UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 63-001
U.S. DEPARTMENT OF ENERGY	)	
	)	ASLBP Nos. 09-876-HLW-CAB01
(High-Level Waste Repository)	)	09-877-HLW-CAB02
	)	09-878-HLW-CAB03
	)	

NRC STAFF ANSWER TO INTERVENTION PETITIONS

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February 9, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 63-001
U.S. DEPARTMENT OF ENERGY	)	
	)	ASLPB Nos. 09-876-HLW-CAB-01
(High-Level Waste Repository)	)	09-877-HLW-CAB-02
	)	09-878-HLW-CAB-03
	)	

NRC STAFF ANSWER TO INTERVENTION PETITIONS

INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(h)(1) and the Notice of Hearing issued by the Commission, the Staff of the U.S. Nuclear Regulatory Commission (Staff) hereby files its response to the petitions for leave to intervene filed by Caliente Hot Springs Resort LLC;[1] the State of California;[2] Clark County, Nevada;[3] the County of Inyo, California;[4] Native Community Action Council;[5] the State of Nevada;[6] the Nevada Counties of Churchill, Esmeralda, Lander and

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[1] "Caliente Hot Springs Resort – NEPA – Impacts on Land Use and Ownership" (CHS Contention), filed Jan. 5, 2009.

[2] "State of California's Petition for Leave to Intervene in the Hearing" (CAL Petition), filed Dec. 20, 2008.

[3] "Clark County, Nevada's Request for Hearing, Petition to Intervene and Filing of Contentions" (CLK Petition), filed Dec. 22, 2008.

[4] "Petition for Leave to Intervene by the County of Inyo, California on an Application by the U.S. Department of Energy for Authority to Construct a Geologic High-Level Waste Repository at a Geological Repository Operations Area at Yucca Mountain, Nevada" (INY Petition), filed Dec. 22, 2008.

[5] "Native Community Action Council Petition to Intervene as a Full Party" (NCA Petition), filed Dec. 22, 2008.

Mineral (jointly);[7] the Nuclear Energy Institute;[8] Nye County, Nevada;[9] the Timbisha Shoshone Tribe (TIM);[10] the Timbisha Shoshone Yucca Mountain Oversight Program Non-Profit Corporation (TOP);[11] and White Pine County, Nevada.[12] "Notice of Hearing and Opportunity to Petition for Leave to Intervene," *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op.); In the Matter of U.S. Department of Energy (High Level Waste Repository); Notice of Hearing and Opportunity To Petition for Leave to Intervene on an Application for Authority To Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain, 73 Fed. Reg. 63,029 (Oct. 22, 2008).

In the following discussion, the Staff provides, first, a brief description of the background of this high-level waste proceeding; second, a discussion of each petitioner's standing to intervene in this proceeding; and third, a discussion of the admissibility of each of the petitioners' proposed contentions. As more fully set forth below, the State of California; Clark County, Nevada; the County of Inyo, California; the State of Nevada; the Nevada Counties of

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[6] "State of Nevada's Petition to Intervene as a Full Party" (NEV petition), filed Dec. 19, 2008.

[7] "Nevada Counties of Churchill, Esmeralda, Lander and Mineral" (4NC Petition), filed Dec. 19, 2008.

[8] "The Nuclear Energy Institute's Petition to Intervene" (NEI Petition), filed Dec. 19, 2008.

[9] "Nye County, Nevada Petition to Intervene and Contentions" (NYE Petition), filed Dec. 19, 2008.

[10] "Timbisha Shoshone Tribe's Petition for Leave to Intervene in the Hearing" (TIM Petition), filed Dec. 22, 2008.

[11] "Timbisha Shoshone Yucca Mountain Oversight Program Non-Profit Corporation Petition to Intervene as a Full Party" (TOP Petition), filed Dec. 22, 2008.

[12] "White Pine County's Request for Hearing and Petition For Leave to Intervene Including Supporting Contentions on the Application by the U.S. Department of Energy for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain" (WHI Petition), filed Dec. 22, 2008.

Churchill, Esmeralda, Lander and Mineral; Nye County, Nevada; the Timbisha Shoshone Tribe; and White Pine County, Nevada have established their standing to intervene in this proceeding. However, Caliente Hot Springs Resort, Native Community Action Council, and Nuclear Energy Institute have not established their standing to intervene in this proceeding, nor have they proposed an admissible contention. Therefore, their requests to intervene in this proceeding should be denied.

Certain of the petitioners (*i.e.*, the State of California; Clark County, Nevada; the County of Inyo California; the Nevada Counties of Churchill, Esmeralda, Lander and Mineral; the Timbisha Shoshone Tribe;[13] and White Pine County, Nevada) that have established standing have failed to proffer an admissible contention, and therefore, in accordance with 10 C.F.R. § 2.309(a), their requests to intervene in this proceeding should be denied. The State of Nevada and Nye County, Nevada have standing and have proffered at least one admissible contention. Finally, the Staff does not oppose the requests of Eureka County, Nevada and Lincoln County, Nevada to participate as interested governmental participants pursuant to 10 C.F.R. § 2.315(c).

BACKGROUND

Congress enacted the Nuclear Waste Policy Act (NWPA) in 1982, establishing a comprehensive program for the identification, licensing, construction, operation, and regulation of geologic repositories for the disposal of high-level waste (HLW). Pub. L. No. 97-425, 96 Stat. 2201 (1983) (codified as amended at 42 U.S.C. §§ 10101-10270). The purpose of the NWPA is "[t]o set forth "a schedule for the siting, construction, and operation of repositories that will provide a reasonable assurance that the public and the environment

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[13] Neither the Timbisha Shoshone Tribe (TIM) nor the Timbisha Shoshone Yucca Mountain Oversight Program Non-Profit Corporation (TOP) submitted an admissible contention.

will be adequately protected from the hazards posed by high-level radioactive waste and such spent nuclear fuel as may be disposed of in a repository." 42 U.S.C. § 10131(b)(1) (2000). Under the NWPA, the Nuclear Regulatory Commission (NRC) decides whether a construction authorization and a license for the repository should be issued. *See id.* §§ 10134(d), 10141(b). Additionally, the NWPA directed the Environmental Protection Agency (EPA) to set generally applicable environmental radiation protection standards. 42 U.S.C. § 10141. The NWPA also provides that the NRC should issue a final decision on the issuance of a construction authorization within three years after the license application is submitted by the DOE, excepting a one year extension, if the NRC complies with reporting requirements. *See id*. § 10134(d).

The NWPA was amended in 1987, by the Nuclear Waste Policy Amendments Act of 1987, (NWPAA) Pub. L. No. 100-203, §§ 5001-5065, 101 Stat. 1330-227 to 1330-255 (1987), (codified in various sections of 42 U.S.C.) The NWPAA decreed Yucca Mountain, Nevada as the sole site that the DOE could consider for the geologic repository in the United States. 42 U.S.C. § 10101 (30). Yucca Mountain is located approximately 90 miles northwest of Las Vegas in Nye County, Nevada. G.I. Sec. 1.1.

On February 14, 2002, the Secretary of Energy recommended the Yucca Mountain site for the construction of a repository to the President, thereby setting in motion the approval process set forth in sections 114 and 115 of the NWPA. See 42 U.S.C. §§ 10134(a)(1); 10135(b), 10136(b)(2). On February 15, 2002, the President recommended the site to Congress. On July 9, 2002, Congress passed a joint resolution, over the State of Nevada's disapproval, approving the development of a repository at Yucca Mountain which President George W. Bush signed on July 23, 2002. See Pub. L. No. 107-200, 116 Stat. 735 (2002) (codified at 42 U.S.C. § 10135) note. This action allowed DOE to develop a license application to submit to the NRC.

On June 3, 2008, DOE submitted the Yucca Mountain Repository License Application to

the NRC seeking authorization to construct a geologic repository at a geologic repository operations area at Yucca Mountain, NV, in accord with the provisions of 10 C.F.R. Part 63. The notice of receipt of this application was published in the *Federal Register* on June 17, 2008. Yucca Mountain, Notice of Receipt and Availability of Application, 73 Fed. Reg. 34,348 (June 17, 2008); corrected 73 Fed. Reg. 40,883 (July 16, 2008). In accord with Section 114(f)(1) of the NWPA, as amended, and the provisions of 10 C.F.R. 63.21(a), the license application was accompanied by the "*Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High Level Radioactive Waste at Yucca Mountain, Nye County, Nevada",* dated February 2002 (FEIS). On June 16, 2008, under separate cover, DOE submitted the "*Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada*", dated June (FSEIS). Also, on June 16, DOE provided the "*Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Waste at Yucca Mountain, Nye County, Nevada – Nevada Rail Transportation Corridor"* dated June 2008 (Rail Corridor SEIS), and the "*Final Environmental Impact Statement for a Rail Alignment for the Construction and Operation of a Railroad in Nevada to a Geologic Repository at Yucca Mountain, Nye County, Nevada"* dated June 2008 (Rail Alignment EIS).[14]

On September 5, 2008, the Staff determined that the application contained sufficient information in accord with 10 C.F.R. Part 2 and Part 63, and was sufficiently complete such that the Staff could begin their detailed technical review. Accordingly, the Staff docketed the application. Department of Energy; Notice of Acceptance for Docketing of a License

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[14] All of these documents can be accessed from the NRC website at http://www.nrc.gov/waste/hlw-disposal/yucca-lic-app.html.

Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area of Yucca Mountain, 73 Fed. Reg. 53,284 (Sept. 15, 2008).

Also on September 5, 2008, the NRC staff issued "*U.S. Nuclear Regulatory Commission Staff's Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain*" (EISADR) (ADAMS Accession No. ML082420342). As discussed in the EISADR, the Staff conducted a review to determine whether it is practicable to adopt the Environmental Impact Statements (EISs) in accordance with the criteria in 10 C.F.R. §51.109(c). As discussed in the EISADR, the Staff concluded that it is practicable to adopt the EISs with supplementation. The Staff concluded that since neither the FEIS, nor the FSEIS adequately address all the impacts on groundwater, or from surface discharges of groundwater, from the proposed action additional supplementation was needed.

On October 17, 2008, the Commission issued its "Notice of Hearing and Opportunity to Petition for Leave to Intervene."[15] *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op.). The Notice of Hearing was subsequently published in the *Federal Register* on October 22, 2008. In the Matter of U.S. Department of Energy (High Level Waste

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[15] In preparation for receiving the license application and the initiation of the licensing proceeding, the Commission had previously established the Advisory Pre-License Application Presiding Officer Board (Advisory PAPO Board) on February 13, 2008. *See* 73 Fed. Reg. 9358 (Feb. 20, 2008.) The Advisory PAPO Board was established to obtain input and suggestions from parties and potential parties on the procedural matters arising from and associated with case management requirements that could be imposed in any adjudication regarding DOE's request for authorization to construct a HLW repository at Yucca Mountain. *Id.* On June 17, 2008, the Commission granted the Advisory PAPO Board authority to issue binding case management orders. *U.S. Dep't. of Energy* (High Level Waste Repository: Pre-Application Matters), CLI-08-14, 67 NRC 402, 406 (June 17, 2008). On June 20, 2008, the Advisory PAPO issued a case management order setting requirements for intervention petitions, contentions, responses and replies, standing arguments, and reference documents/attachments for adjudication. *U.S. Dep't. of Energy* (High Level Waste Repository:) LBP-08-10, 67 NRC 450 (June 20, 2008). Further instructions on contention formatting were issued in an Order ([R]egarding Contention Formatting and Table of Contents), *Dep't. of Energy* (High Level Waste Repository: Pre-Application Matters Advisory PAPO Board), Docket No. PAPO-001, ASLBP No. 08-861-01-PAPO BD01 (September 29, 2008) (unpublished.)

Repository); Notice of Hearing and Opportunity To Petition for Leave to Intervene on an Application for Authority To Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain, 73 Fed. Reg. 63,029 (October 22, 2008). In the Notice of Hearing, the Commission, referencing its previously issued order regarding an extension of time, provided that intervention petitions must be filed no later than 60 days after the date of the publication of the notice in the Federal Register.[16] *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 3, 10). The Commission also extended the time for the filing of answers to intervention petitions and replies thereto to 50 and 14 days thereafter, respectively. *Id.* at 10-11. In addition, the Commission made other modifications to the hearing schedule in 10 C.F.R. Part 2, Appendix D up to and including the First Prehearing Conference Order. *Id*. at 11.

On December 19, 2008, Petitions for Leave to Intervene/Requests for Hearing and contentions were filed via the EIE by the State of Nevada; the Nuclear Energy Institute; Nye County, Nevada; and the Nevada Counties of Churchill, Esmeralda, Lander and Mineral (jointly).

On December 20, 2008, Petitions for Leave to Intervene/Requests for Hearing and contentions were filed via the EIE by the State of California.

On December 22, 2008, Petitions for Leave to Intervene/Requests for Hearing and contentions were filed via the EIE by Clark County, Nevada; the County of Inyo, California;

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[16] On August 13, 2008, in response to a motion from the State of Nevada, the Commission granted a thirty-day extension of time in which to file petitions to intervene and petitions for status as an interested government participant. *U.S. Department of Energy* (High Level Waste Repository) CLI-08-18, 68 NRC __, __ (August 13, 2008) (slip op. at 5-6). The Commission also proposed to provide proportional extensions of time to other participants; the time for answers to the petitions to intervene was doubled from 25 to 50 days, and replies would be due 14 days thereafter. *Id*. at 5. Additionally, the Commission proposed to revise certain deadlines in 10 C.F.R. Part 2, Appendix D, that would extend the period for the First Prehearing Conference from 8 to 16 days after the deadline for filing replies, and the extend the period of issuance of the First Prehearing Conference Order from 30 to 60 days after the First Prehearing Conference. *Id*. at 6.

White Pine County, Nevada; Timbisha Shoshone Tribe; Native Community Action Council; and Timbisha Shoshone Yucca Mountain Oversight Program Non-Profit Corporation.

Additionally, on January 5, 2009, a petition was filed by EIE by Caliente Hot Springs Resort.

On December 22, 2008, Requests to Participate as Interested Governmental Participants were filed by Eureka County, Nevada and Lincoln County, Nevada. Both counties indicated that they will wish to participate in contentions filed by other entities.

On January 15, 2009, DOE filed its answers to the petitions of Caliente Hot Springs Resort, LLC;[17] Clark County, Nevada;[18] the County of Inyo, California;[19] the Native Community Action Council;[20] the Nevada Counties of Churchill, Esmeralda, Lander and Mineral;[21] Nye County, Nevada;[22] Timbisha Shoshone Tribe;[23] Timbisha Shoshone Yucca Mountain Oversight Program Non-Profit Corporation;[24] and White Pine County, Nevada.[25]

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[17] "Answer of the U.S. Department of Energy to Caliente Hot Springs Resort's Petition to Intervene," filed Jan. 15, 2009.

[18] "Answer of the U.S. Department of Energy to Clark County, Nevada's Request for Hearing, Petition to Intervene and Filing of Contentions," filed Jan. 15, 2009.

[19] "Answer of the U.S. Department of Energy to a Petition for Leave to Intervene by the County of Inyo, California on an Application by the U.S. Department of Energy for Authority to Construct a Geologic High-Level Waste Repository at a Geologic Repository Operations Area at Yucca Mountain, Nevada," filed Jan. 15, 2009.

[20] "Answer of the U.S. Department of Energy to the Native Community Action Council Petition to Intervene as a Full Party," filed Jan. 15, 2009.

[21] "Answer of the U.S. Department of Energy to Nevada Counties of Churchill, Esmeralda, Lander and Mineral Petition to Intervene," filed Jan. 15, 2009.

[22] "Answer of the U.S. Department of Energy to Nye County, Nevada Petition to Intervene and Contentions," filed Jan. 15, 2009.

[23] "Answer of the U.S. Department of Energy to the Timbisha Shoshone Tribe's Petition for Leave to Intervene in the Hearing," filed Jan. 15, 2009.

[24] "Answer of the U.S. Department of Energy to the Timbisha Shoshone Yucca Mountain Oversight Program Nonprofit Corporation Petition to Intervene as a Full Party," filed Jan. 15, 2009.

DOE also filed its answers to the requests to participate as interested governmental participants of Eureka County, Nevada[26] and Lincoln County, Nevada[27] on January 15, 2009.

On January 16, 2009, DOE filed its answers to the petitions of the Nuclear Energy Institute;[28] the State of California;[29] and the State of Nevada.[30]

DISCUSSION

I. Preliminary Statement

In order to be admitted as a party to this proceeding, a petitioner must (1) be in substantial and timely compliance with the Licensing Support Network (LSN) requirements set forth in 10 C.F.R. § 2.1003; (2) have legal standing to intervene in the proceeding, as set forth in 10 C.F.R. § 2.309(d); and (3) set forth at least one admissible contention in accordance with 10 C.F.R. § 2.309(f)(1) and 10 C.F.R. §§ 51.109 and 2.326, as applicable.

The Staff individually discusses standing with respect to each petitioner and its responses are set out in detail below. With respect to LSN compliance, the Staff individually addresses compliance with LSN obligations with respect to each petitioner for whom the

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[25] "Answer of the U.S. Department of Energy to White Pine County's Request for Hearing and Petition for Leave to Intervene Including Supporting Contentions on the Application by the U.S. Department of Energy for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," filed Jan. 15, 2009.

[26] "Answer of the U.S. Department of Energy to Eureka County, Nevada's Request to Participate as Interested Governmental Participant," filed Jan. 15, 2009.

[27] "Answer of the U.S. Department of Energy to Lincoln County, Nevada's Corrected Request to Participate as Interested Governmental Participant," filed Jan. 15, 2009.

[28] "Answer of the U.S. Department of Energy to the Nuclear Energy Institute's Petition to Intervene," filed Jan. 16, 2009.

[29] "Answer of the U.S. Department of Energy to State of California's Petition for Leave to Intervene in the Hearing," filed Jan. 16, 2009.

[30] "Answer of the U.S. Department of Energy to the State of Nevada's Petition to Intervene," filed Jan. 16, 2009.

Staff opposes intervention based on failure to comply with LSN obligations, and objects to intervention based on compliance with LSN obligations only when there has been no effort to substantially comply with such obligations. With respect to the admissibility of contentions, the Staff has reviewed each individual contention and sets forth its response to each contention in detail below. The Staff examined each individual contention as a whole and, to the extent possible, on its own merits. As set forth below, the Staff opposes the admission of some of the contentions proffered by the petitioners, does not oppose the admission of others, and opposes the admission of some proffered contentions in part. With respect to standing, contention admissibility, and LSN requirements, the Staff raised objections only where it believed that a petitioner had failed to comply with a regulatory requirement. In addition, the Staff, in this section, addresses certain matters of general applicability as well as certain general assertions made by Nevada in the introductory section of its petition.

A. Consolidation of Issues

As a general matter, the Staff notes if intervention is granted, the Board may, under 10 C.F.R. § 2.316, consolidate (with respect to one or more issues) evidentiary presentations, arguments, briefs, and proposed findings, by those admitted intervenors who have substantially the same interest that may be affected by the proceeding and raise substantially the same questions (*e.g.*, contentions). This would restrict duplicative or repetitive evidence and argument, particularly when parties raise the same issues or contentions. Only parties to a Commission licensing proceeding may be consolidated. *Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 623 (1981).

In all appropriate cases, a single, lead intervenor should be designated to present evidence, conduct cross-examination, submit briefs, and propose findings of fact, conclusions of law, and argument. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 455 (1981). Consolidation of intervenors is not

appropriate when it would prejudice the rights of any intervenor. 10 C.F.R. § 2.316. *See Statement of Policy*, CLI-81-8, 13 NRC at 455 (consolidation not appropriate if it is shown that the record will be incomplete if certain activities are not performed by individual intervenors).

In its Case Management Order, the APAPO Board sought information that would enable it to determine lead intervenors and requested that a petitioner "designate" for each joint contention proffered, "the participant that has authority to act with respect to the contention." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 458 (2008). The Staff notes that a number of the contentions proposed by various petitioners are very similar. For example, NEV-SAFETY-150 through -158 are virtually identical to CLK-SAFETY-003 through -011. *See* NEV Petition at 746-843; CLK Petition at 28-84. Thus, if, petitioners that raise the "same" contentions are granted intervenor status, the Board should consider consolidating and designating a lead intervenor designated regarding the admitted contentions.

B. Affidavits

Some of the petitioners provide affidavits as attachments to their petitions. *See, e.g.*, NEV Petition; CAL Petition; TIM Petition. These petitioners state that they reference affidavits in support of their contentions, claiming that each affidavit identifies the particular contentions in which supporting information is sponsored by the affiant. *See, e.g.,* NEV Petition at 14. However, most of the petitioners' contentions do not have any specific reference to an affidavit. Instead, virtually all of the petitioners affidavits contain the blanket statement that the affiant adopts as his or her own opinions the statements contained within paragraph 5 of those specific contentions identified in an attachment to the affidavit. *See e.g.*, NEV Petition, Attachment 4, Affidavit of Adrian Bath; CAL Petition, Attachment 1, Affidavit of Fred Dilger; TIM Petition, Attachment 1, Affidavit of Fred Dilger. For these

petitioners, in many cases there is no expert support for the statements contained in paragraph 6 of their contentions. *See, e.g.,* CAL Petition, Attachment 1, Affidavit of Fred Dilger at ¶ 3; TIM Petition, Attachment 1, Affidavit of Fred Dilger at ¶ 3; *but cf.* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne, Attachment C (listing only some of Nevada's contentions). The attachment to these affidavits consists of a list of contentions adopted by the affiant. The affidavit then states that the affiant acknowledges that counsel will "assign unique numbers to each of the contentions just prior to the filing of the Petition and will include those unique numbers" in the attachment. *See* Bath Affidavit at ¶ 4; Dilger Affidavit at ¶ 3. The attachment is neither signed nor initialed by the affiant and there is no other indication that the affiant reviewed the list of contentions, and therefore had knowledge of the contents of the list, prior to it being filed.

Further, neither the text of the contention itself nor the affidavit specifies which statements in the contention are attributable to the affiant so the reader is left to assume that either the entire discussion in the noted paragraph is the affiant's opinion or that only those statements not otherwise attributed to a specific document, including legal conclusions, are attributable to that affiant. In some cases, more than one affiant is attributed to statements in the same paragraph. For example, according to the affidavits of Howard S. Wheater, Jonathon Overpeck, and Richard E. Chandler, each adopted as his own the opinions contained in paragraph 5 of NEV-SAFETY-18. *See* NEV Petition, Attachment 13, Affidavit of Howard S. Wheater; Attachment 15, Affidavit of Jonathon Overpeck; and Attachment 19, Affidavit of Richard E. Chandler; TIM Petition, Attachment 2, Affidavit of Cady Johnson at ¶ 3; Attachment 3, Affidavit of Martin Mifflin at ¶ 3. In those cases, the reader is unable to discern which statements in a particular paragraph are attributed to which affiant. The APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455. This lack of specificity with respect to Nevada's affidavits is in direct contradiction with the

APAPO's order.

C. Requests to Participate in Resolution of Uncontested Issues

Several petitioners request, without citing supporting authority, to participate in the resolution of uncontested issues to the same extent, and in the same manner, as DOE or any other party may be allowed to participate in the resolution of those issues. *See* NCAC Petition at 6; NEV Petition at 3; TOP Petition at 6. According to 10 C.F.R. § 2.1023(c)(2), Commission review of uncontested issues relating to the licensing of a geologic repository is not a part of the adjudicatory proceeding. The Commission further elaborated on the effect of section 2.1023(c)(2) in denying a Nevada Petition for Rulemaking: "[w]hen the Commission indicated in the regulations that it would review the uncontested matters outside of the adjudicatory process, it clearly contemplated that these issues would not be subject to a hearing." *See* State of Nevada; Denial of Petition for Rulemaking, 73 Fed. Reg. 62,931, 62,932 (October 22, 2008). Thus, the plain language of the regulation and express intent of the Commission provide no basis for any party to participate in the Commission's review of uncontested issues. The potential parties have had sufficient opportunity through the filing of contentions pursuant to 10 C.F.R. § 2.309 to establish contested issues. No special provision need be made to permit a party to participate in the Commission's nonadjudicatory review of uncontested issues.

II. Standing to Intervene

A. Applicable Legal Requirements

1. General Principles of Standing

In accordance with the NRC's Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders in 10 C.F.R. Part 2, "[a]ny person[31] whose interest may be affected by a proceeding and who desires to participate as a party must file a written request for hearing or petition for leave to intervene and a specification of the contentions that the person seeks to have litigated in the hearing." 10 C.F.R. § 2.309(a). The regulations further provide that the Licensing Board "will grant the request/petition if it determines that the requestor/petitioner has standing under the provisions of [10 C.F.R. § 2.309(d)] and has proposed at least one admissible contention that meets the requirements of [10 C.F.R. § 2.309(f)]." *Id.*

Under the general standing requirements set forth in 10 C.F.R. § 2.309(d)(1), a request for hearing or petition for leave to intervene must state:

> (i) The name, address and telephone number of the requestor or petitioner;
> (ii) The nature of the requestor's/petitioner's right under the Act to be made a party to the proceeding;
> (iii) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding; and
> (iv) The possible effect of any decision or order that may be issued in the proceeding on the requestor's/petitioner's interest.

10 C.F.R. § 2.309(d)(1). The Commission clarified in its Notice of Hearing for this proceeding that pursuant to 10 C.F.R. 2.309(d)(2)(iii), the State and any local government body (county, municipality or other subdivision) in which the geologic repository operations

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[31] "Person" means "(1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency other than the Commission . . . ; any State or any political subdivision of, or any political entity within a state, any foreign government or nation . . . , or other entity; and (2) any legal successor, representative, agent, or agency of the foregoing." 10 C.F.R. § 2.4.

area is located, and any affected Federally-recognized Indian Tribe, as defined in 10 C.F.R. Part 63, need not address the standing requirements in 10 C.F.R. 2.309(d). *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 7). The Commission has also clarified that an "affected unit of government" (AULG), as defined in section 2 of the Nuclear Waste Policy Act (NWPA), need not address the standing requirements of section 2.309(d). *Id.* at 7-8.

To be granted standing in an NRC proceeding, a petitioner must allege an interest within the "zone of interests" protected by the Atomic Energy Act of 1954, as amended (AEA) or other applicable statute. *See, e.g.*, *Quivira Mining Co.* (Ambrosia Lake Facility), CLI-98-11, 48 NRC 1, 8 (1998); *Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 47 (1994); *Metro. Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 316 (1985). A "zone of interests" determination varies depending on the statutory provision at issue. *See Bennett v. Spear*, 520 U.S. 154, 163 (1997). Ultimately the inquiry hinges on whether a petitioner's interests are among those arguably to be protected by the statutory provision at issue. *U.S. Enrichment Corp*. (Paducah, Kentucky), CLI-01-23, 54 NRC 267, 272-73 (2001) (citing *Nat'l Credit Union Admin. v. First Nat'l Bank*, 522 U.S. 479, 492 (1998)).

To determine whether a petitioner has standing to intervene in a proceeding, the Commission "has long looked for guidance to judicial concepts of standing." *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 322-23 (1999); *Metro. Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 (1983); *cf. International Uranium Corp*. (Receipt of Material from Tonawanda, New York), CLI-98-23, 48 NRC 259, 264 (1999) (noting that as an administrative agency, the NRC is not bound to adhere to judicial standing doctrines in assessing whether potential intervenors have a cognizable interest entitling them to intervention in an NRC hearing). The minimum constitutional requirements for standing require a petitioner to demonstrate to the

tribunal: (1) an "injury-in-fact" that is actual or imminent, (2) a "causal connection between the injury and the action complained of," and (3) a likelihood that the injury will be redressable by judicial action. *See Bennett*, 520 U.S. at 167 (1997) (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992)); *Sequoya Fuels Corp. and Gen. Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 71-72 (1994).

2. Standing for Organizations

An organization may have standing to participate in a Commission proceeding in either of two ways. First, an organization may establish standing based on one or more of its members, if one or more of its members have standing in his or her own right (representational standing). Second, an organization may have standing to participate on its own behalf, based on injury to its own organizational interests (organizational standing). *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995).

Where an organization seeks to establish "representational standing," it must show that at least one of its members may be affected by the proceeding and would have standing in his or her own right, it must identify that member by name and address, and it must show that the member "has authorized the organization to represent him or her and to request a hearing on his or her behalf." *See e.g.*, *Consumers Energy Co.* (Palisades Nuclear Power Plant), CLI-07-18, 65 NRC 399, 409 (2007) (citations omitted); *CPU Nuclear Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 202 (2000). Further, for the organization to establish representational standing, the member seeking representation (1) must qualify for standing in his or her own right; (2) the interests that the organization seeks to protect must be germane to its own purpose; (3) and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action. *Private Fuel Storage*, CLI-99-10, 49 NRC at 323 (citing *Hunt v. Washington*

State Apple Advertising Comm'n, 432 U.S. 333, 343 (1977).

The standing requirements for an organization seeking organizational standing are identical to the requirements for an individual seeking to intervene, because "an organization, like an individual, is considered a 'person'" as defined in 10 C.F.R. § 2.4 and as the term is used in 10 C.F.R. § 2.309 regarding standing. *Palisades*, CLI-07-18, 65 NRC at 411. Where an organization seeks to establish "organizational standing" — standing in its own right, independent of its status as the representative of one or more of its members — it must demonstrate 1) a discrete institutional injury to the organization itself 2) that is within the zone of interest protected by the relevant statute. *International Uranium (USA) Corp*. (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001); *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 195-96 (1998). The Commission has repeatedly found that general environmental and policy interests are insufficient for organizational standing. *Palisades*, CLI-07-18, 65 NRC at 411-12 (citation omitted).

B. Petitioners' Standing to Intervene

1. Petitioners That Have Not Demonstrated Standing

a. Caliente Hot Springs Resort, LLC

The NRC Staff opposes the standing of Caliente Hot Springs Resort, LLC (Resort) since it has failed to address the issue of standing in its petition in any way.

Since the Resort is neither a governmental entity nor an affected Federally-recognized Indian Tribe, as defined in 10 C.F.R. Part 63, it is required to address the standing requirements in 10 C.F.R. 2.309(d). *See High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 3, 7-8). The Resort has not addressed standing in its petition.

The Commission Secretary referred the Resort's petition to the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel on January 6, 2009. Memorandum from Annette L. Vietti-Cook to E. Roy Hawkens, Petition with Respect to the U.S. Department

of Energy's Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain in Nye County, Nevada (Jan. 6, 2009) (ADAMS Accession No. ML090060781). The Secretary's letter described the events surrounding the receipt of the Resort's petition, the key points of which are as follows:

1. That the Office of the Secretary initially received the filing by mail on December 22, 2008,
2. That the petition is dated December 19, 2008,
3. That the Office of the Secretary did not serve the filing because it was not received electronically, and
4. That the filing was re-submitted and served on proceeding participants using the e-filing system on January 5, 2009.

Timely petitions to intervene in this proceeding were due no later than December 22, 2008, and were required to have been filed and served electronically by that date. *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 3, 5) (73 Fed Reg. 63,029, 63,031) (Oct. 22, 2008). The requirement to file documents electronically is also included in the Commission's regulations applicable to this proceeding. 10 C.F.R. § 2.1013. The Commission's order emphasized that except for late petitions or contentions under 10 C.F.R. § 2.309(c)(1)(i)-(viii), a "non-timely petition or contention will not be entertained." *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 3-4). The Resort's petition was not filed and served electronically until January 5, 2009. At no time does the Resort address the requirements for late filings under 10 C.F.R. § 2.309(c)(1). Therefore, the Resort's petition should be rejected as untimely.

Furthermore, the Resort's petition does not address the Commission's standing requirements stated at 10 C.F.R. § 2.309(d)(1), and a review of the contents of the Resort's petition indicates that it fails to allege that the Resort will suffer any particularized injury as the result of granting DOE's application. *See Entergy Nuclear Operations, Inc. and Entergy*

Nuclear Palisades, LLC (Palisades Nuclear Plant, James A. FitzPatrick Nuclear Power Plant, Pilgrim Nuclear Power Station, Vermont Yankee Nuclear Power Station, Indian Point Nuclear Generating Unit Nos. 1, 2, & 3, and Big Rock Point), CLI-08-19, 68 NRC __ (August 22, 2008) (slip op at 6). Therefore, the Resort's petition should be rejected for failing to demonstrate standing.

b. Native Community Action Council

Native Community Action Council (NCAC) is a Nevada non-profit corporation composed of a Board of Directors from Native American communities. NCA Petition at 3. It appears that NCAC is seeking to establish standing either as a representative of its members or as an organization. As discussed below, NCAC does not demonstrate standing under either circumstance.

An organization seeking representational standing must, in addition to establishing that one of its members has standing in his or her own right, identify that member by name, and must demonstrate that the member has (preferably by affidavit) authorized the organization to represent him or her and to request a hearing on his or her behalf. *See Palisades*, CLI-08-19, 68 NRC __ (slip op. at 6-7). Further, "[t]he interests that the representative organization seeks to protect must be germane to its own purpose; and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action." *Id.* at 7 (citations omitted).

NCAC claims that its members will be injured by radioactive contamination of the land used, occupied, and shared by the Newe[32] and Nuwuvi[33] and by radiation exposure of both

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[32] The word "Newe" is how the Western Shoshone people refer to themselves and translates in the English language as, "the people". NCAC Petition at 5 n.2.

[33] The word "Nuwuvi" is the language of the Southern Paiute and interpreted in English to (continued. . .)

peoples that is cumulative with the past exposure from weapons testing at the Nevada Test Site from 1951-1994. NCA Petition at 5. If NCAC makes these claims in order to establish representational standing, they are insufficient to show injury in fact to its members because NCAC does not state where its members live or frequent in relation to the proposed repository, nor does NCAC present a viable exposure pathway for how its members will be harmed by the proposed repository at Yucca Mountain. *See Georgia Tech*, CLI-95-12, 42 NRC at 116-17; *CFC Logistics, Inc.* (Materials License), LBP-04-24, 60 NRC 475, 486-87 (2004). Accordingly, NCAC has not established representational standing because NCAC has not established that any of its members has standing in his own right. *See Cleveland Electric Illuminating Co*. (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993). Further, NCAC has not demonstrated that at least one of its members has authorized the organization to represent that member's interests. *See Georgia Tech*, CLI-95-12, 42 NRC at 115, *PFS*, CLI-99-10, 49 NRC at 323.

NCAC claims further injury because under Newe and Nuwuvi customs, Mother Earth is sacred and failure to protect Mother Earth from radioactive material is a violation of their free exercise of religion under the First Amendment of the US Constitution. NCA Petition at 5. NCAC alleges that the "proposed repository would be located in the central Great Basin within the homelands of the Western Shoshone Nation, Newe Sogobia, formally acknowledged by and through the 1863 Treaty of Ruby Valley, 18 Stat. 689-692, Article V. The Yucca Mountain region is acknowledged by the Western Shoshone Nation as 'joint-use' with Nuwuvi, Southern Paiute people." *Id.* at 4. If, through these assertions, NCAC is attempting to establish representational standing, it fails for the same reasons as its claims above, *i.e.* no specific members have been identified and no showing of how members will

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mean "the people". NCAC Petition at 4 n.1.

suffer harm of a radiological nature has been made. Moreover, the alleged violation of free exercise of religion does not fall within the zone of interests protected by the AEA, NWPA, or National Environmental Policy Act (NEPA).[34] Therefore, this claim of injury is insufficient to establish standing.

An organization that seeks to establish organizational standing must demonstrate a discrete institutional injury to the organization itself that is within the zone of interest protected by the relevant statute. *International Uranium (USA) Corp*. (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001); *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, at 195-96 (1998). NCAC is a Nevada non-profit corporation composed of a Board of Directors from Native American communities downwind from the Nevada Test Site that, according to NCAC, experience adverse health consequences known to be plausible from exposure to radiation. NCA Petition at 3. NCAC asserts "a longstanding interest in protecting the high quality of life, health and safety of this and future generations of Newe and Nuwuvi from radiation health effects…." *Id.* at 5. However, NCAC has not shown "any risk of 'discrete institutional injury *to itself*, other than the general environmental and policy interests' " of the type the Commission has repeatedly found insufficient for organizational standing. *Consumers Energy Co.* (Palisades Nuclear

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[34] One licensing board in 1982 did state, in dicta, that a petitioner who alleged a First Amendment violation would be within the zone of interests protected by the AEA. *Philadelphia Electric Co.* (Limerick Generating Station), LBP-82-43A, 15 NRC 1423, 1445-46 (1982) (After finding that the petitioner did not demonstrate injury in fact, the board went on to state that a claim alleging NRC's actions to provide for the common defense and security violated the First Amendment would be within the zone of interests protected by the AEA.). However, since then, the Commission has consistently held that petitioners must allege *radiological* harm to be within the zone of interests protected by the AEA. *See, e.g., International Uranium (USA) Corp*. (Receipt of Material from Tonawanda, New York), CLI-98-23, 48 NRC 259, 265 (1998) ("The AEA concentrates on the licensing and regulation of nuclear materials for the purpose of protecting public health and safety and the common defense and security. The appropriate party to raise safety objections about a specific licensing action is the party who, because of the licensing, may face some radiological harm…."); *Quivira Mining Co.* (Ambrosia Lake Facility), CLI-98-11, 48 NRC 1, 14, 17 (1998) ("[E]nvirocare's purely competitive interests, unrelated to any radiological harm to itself, do not bring it within the zone of interests of the AEA….").

Power Plant), CLI-07-18, 65 NRC 399, 411-12 (2007) (citation omitted). Furthermore, if NCAC is asserting that it has organizational standing because of its organizational purpose of representation of the Newe and Nuwuvi, that claim also fails. The Commission has held that a union's attempt to attain organizational standing based on its organizational interest in protecting its members' safety is merely a representational standing argument and fails to establish organizational standing. *Palisades*, CLI-08-19, 68 NRC at __ (slip op. at 17). Therefore, NCAC has not established organizational standing.

NCAC has not established standing as of right because it has not demonstrated that any of its members have standing or that they have authorized NCAC to represent them, nor has NCAC demonstrated that it has suffered an injury in fact to its organizational interests that is causally connected to the proposed construction authorization and may be redressed by a favorable decision.

c. Nuclear Energy Institute

i. Standing as a Matter of Right

The Staff opposes NEI's representational standing to intervene as a matter of right. NEI seeks to establish representational standing to intervene based on the individual standing of its members. *See* NEI Petition at 1. Six individuals submitted affidavits stating that they authorize NEI to represent their interests in this matter, and set forth the particularized injuries they claim to suffer "as a result of the continuing lack of a licensed high level waste repository." *Id.* at 3; NEI Petition, Attachments 1-6. NEI argues that its members "have standing to intervene based on their role and obligations as set forth in the NWPA and on their direct safety, security, environmental, operational, and financial interests in the timely licensing of the Yucca Mountain waste repository." NEI Petition at 3.

As discussed in the submitted affidavits, the NEI members argue that they qualify for standing in their own right as licensed entities in the nuclear industry with particularized

injuries, such as the financial cost of paying fees to the Nuclear Waste Fund, which absorbs the costs associated with disposal of high-level waste and spent nuclear fuel. *See* NEI Petition at 3; Attachments 1-6. First, NEI claims that the ongoing lack of a national high-level waste repository accrues additional costs to construct and maintain interim storage at both operating and permanently shut-down power reactors. *See* NEI Petition at 4; Attachments 1-6. Second, the members argue that the continuing presence of spent nuclear fuel onsite at power reactors incurs other injuries, such as "occupational radiation exposures" and "environmental impacts." *See* NEI Petition at 4; Attachments 1-6. Third, where NEI members assert that the DOE design of the repository is "overly conservative," they allege that "unnecessary occupational risks and radiological exposures" would occur at power reactor sites and at the repository site. *See* NEI Petition at 5; Attachments 1-6.

The main thrust of NEI's standing argument is an economic one: since its members are the primary sources of funding of the Nuclear Waste Fund, NEI's members "therefore have an interest in the timely licensing of the facility and in the appropriate use of monies from the Fund." *See* NEI Petition at 4. This claim fails to support standing under the "zone of interests" of the governing statutes, the AEA and the NWPA. Under the AEA, it has long been Commission practice to deny standing where the petitioner alleged only a bare economic injury that is not linked to radiological harm. *See Pac. Gas & Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 & 2), CLI-02-16, 55 NRC 317, 336 (2002) ("The 'zone of interests' test for standing in an NRC proceeding does not encompass economic harm that is not directly related to environmental or radiological harm.") (citations omitted); s*ee also Envirocare of Utah, Inc. v. NRC*, 194 F.3d 72 (D.C. Cir. 1999) (holding that NRC was entitled to treat economic harm as outside the zone of interest that would provide standing in a proceeding under the AEA, even if the economic harm might confer standing in an Article III proceeding).

The interest of a cost-effective and timely licensing of the repository also falls outside the

zone of interests of those sections of the NWPA that are pertinent to this proceeding. NEI is correct that the enumerated purposes of the NWPA include establishing "a schedule" to develop a repository "that will provide reasonable assurance that the public and the environment will be adequately protected from the hazards posed by" disposing high-level waste and spent nuclear fuel and establishing a "Nuclear Waste Fund." *See* Nuclear Waste Policy Act, as amended, § 111(b)(1)-(4), 42 U.S.C. § 10131(b)(1)-(4) (2000). However, the plain language of section 111(b) shows that the goal of the NWPA is to provide reasonable assurance of the health and safety of the public and the environment from the disposal of high-level waste and spent nuclear fuel, and simply states that the Nuclear Waste Fund will bear the cost of the activities related to this goal. The statute does not appear to contemplate protecting the pecuniary interests of those contributing to the Nuclear Waste Fund anywhere else in its terms. Rather, it appears to seek to obligate those who are responsible for creating the waste and spent fuel to ensure its safe storage and disposal.

To support its assertion that its interests are within the zone of interests protected by the NWPA, NEI relies on *Nuclear Energy Inst. Inc. v. Envtl. Protection Agency*, 373 F.3d 1251 (D.C. Cir. 2004) as authority for establishing its standing in this proceeding. See NEI Petition at 5-6. In *NEI v. EPA*, the court found that NEI had standing to challenge the EPA's ground-water standards for Yucca Mountain under section 801(a) of Energy Policy Act of 1992 (EnPA), based on the fact that its members are the primary sources of funding of the Nuclear Waste Fund. 373 F.3d at 1279. *NEI v. EPA,* however, did not endorse NEI's standing under the NWPA. Further, that court reiterated the established principle that standing is based on the "particular provision of law" upon which the petitioner relies, not the statutory scheme in general. *Id.* at 1280. (citing *Bennett v. Spear*, 520 U.S. 154, 175-76 (1997). In this proceeding, the Commission is acting under its authority under section 114 of the NWPA. Section 114(a)(2)(d) of the NWPA requires the Commission to consider DOE's application for a construction authorization "in accordance with the laws applicable to such applications,"

that is, the AEA. 42 U.S.C. § 10134(a)(2)(d) (2000). As discussed above, the Commission has held that economic considerations unrelated to radiological harm are not an interest protected by the AEA. *See Diablo Canyon*, CLI-02-16, 55 NRC at 336. Accordingly, NEI's reliance on *NEI v. EPA* is misplaced. For these reasons, NEI has failed to support representational standing based on its economic interests argument.

NEI's second claim that its members will suffer "occupational risks and radiological exposures" due to interim storage and disposal, and DOE's "conservatism" in the LA, also fails to support standing under the zone of interests of the governing statute, the AEA. *See* NEI Petition, Attachment 2, Affidavit of J.A. Stall ¶ 9. NEI also argues that certain aspects of the repository design and specifications for fuel canisters could lead to "unnecessary occupational exposures" for workers at power reactor sites and at the repository site. *See* NEI Petition Attachment 1, Affidavit of Rodney J. McCullum ¶¶ 19-20. However, NEI does not purport to represent the workers at the power reactor sites, and NEI has not shown that the workers authorize NEI to represent them here. *See Palisades,* CLI-07-18, 65 NRC at 409 (noting that to claim representational standing, organizations must demonstrate that they have the permission of the members, authorizing the organization to represent them in a proceeding). Therefore, NEI has failed to meet this basic requirement of representational standing for employees of its members. Similarly, NEI does not purport to represent the prospective workers at the repository site, and therefore NEI may not claim representational standing on their behalf. Accordingly, NEI's standing cannot be based on representing workers at either location. Moreover, the linchpin of NEI's argument of the impacts of interim storage and DOE conservatism is undoubtedly economic. NEI repeatedly cites the financial burden of developing and maintaining interim onsite storage and potential increase in the project's overall cost due to "overly conservative" aspects of DOE's License Application. *See, e.g.*, NEI Petition at 3-5; NEI Petition, Attachment 1, McCullum Affidavit ¶¶ 15-18. As discussed above, a bare economic injury not traced to radiological harm falls outside the

zone of interests of the AEA. *See Diablo Canyon*, CLI-02-16, 55 NRC at 336. Therefore, NEI has not supported standing under the zone of interests of the AEA.

Finally, NEI's generalized grievance of "environmental impacts" due to interim storage of spent nuclear fuel is an "assertion[ ] of broad public interest," which "do[es] not establish the particularized interest necessary for participation by an individual or group in agency adjudicatory processes." *See Three Mile Island*, CLI-83-25, 18 NRC at 332. NEI has not particularized a specific environmental injury that its members might sustain as a direct impact of the construction authorization proceeding. NEI has not alleged any distinct environmental harm or cognizable interest under the governing statute, NEPA. Therefore, NEI has not supported standing under NEPA.

For these reasons, NEI has not asserted the appropriate health, safety, or environmental interests sufficient to support standing in an NRC proceeding. Accordingly, the NRC Staff opposes NEI's representational standing.

ii. Discretionary Intervention

NEI also argues that if it is not granted standing as a matter of right, it should be granted discretionary intervention. NEI Petition at 7. As discussed below, the NRC staff opposes the grant of discretionary intervention to NEI. In determining whether discretionary intervention should be permitted, the Commission has indicated that the licensing boards should be guided by the following factors:

> (1) [W]eighing in favor of allowing intervention --
>
> (i) The extent to which the requestor's/petitioner's participation may reasonably be expected to assist in developing a sound record;
>
> (ii) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding; and
>
> (iii) The possible effect of any order which may be entered in the proceeding on the requestor's/petitioner's interest;
>
> (2) [W]eighing against allowing intervention --

> (i) The availability of other means whereby requestor's/petitioner's interest will be protected;
>
> (ii) The extent to which the requestor's/petitioner's interest will be represented by existing parties; and
>
> (iii) The extent to which requestor's/petitioner's participation will inappropriately broaden the issues or delay the proceeding.

10 C.F.R. § 2.309(e); *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 & 2), CLI-76-27, 4 NRC 610, 616 (1976). The Commission has noted that "discretionary intervention is an extraordinary procedure, and will not be allowed unless there are compelling factors in favor of such intervention." Final Rule, "Changes to Adjudicatory Process," 69 Fed. Reg. 2182, 2201 (Jan. 14, 2004). Of the six factors, the primary consideration is whether the petitioner has demonstrated the capability and willingness to contribute to the development of the evidentiary record. *See* 69 Fed. Reg. at 2201; *Pebble Springs*, CLI-76-27, 4 NRC at 617; *General Public Utilities Nuclear Corp.* (Oyster Creek Nuclear Generating Station), LBP- 96-23, 44 NRC 143, 160 (1996). The petitioner should "show [a] significant ability to contribute on substantial issues of law or fact which will not otherwise be properly raised or presented . . . ." *Pebble Springs*, CLI-76-27, 4 NRC at 617. Although NEI maintains that its experts on repository safety "will provide direct, substantive expertise" "in the areas where NEI seeks to participate," NEI Petition at 7, NEI has not demonstrated that *only* its experts, and not the experts of admitted parties, would be able to properly raise or present the issues in the proceeding. For the second factor, the nature and extent of the petitioner's interests, NEI reiterated essentially the same interests it espoused in its petition for standing as a matter of right. *Id.* at 8. Interests which do not establish a right to intervention because they are not within the zone of interests to be protected by the Commission should not be considered as positive factors for the purposes of granting discretionary intervention. *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), LBP-78-11, 7 NRC 381, 388, *aff'd*, ALAB-470, 7 NRC 473 (1978). For the third factor, the

possible effect of an order on the petitioner's interests, as members of the nuclear industry, NEI asserts that it is self-evident that any decision in the construction authorization proceeding will directly and substantially impact NEI's members. NEI Petition at 8. However, as discussed above, NEI's interests are not within the zone of interests to be protected by the Commission in this proceeding, and therefore this vague assertion of an impact on the nuclear industry does not weigh in favor of NEI's intervention. *See Enrico Fermi*, LBP-78-11, 7 NRC at 388.

The factors weighing against intervention also do not balance in NEI's favor. The most important factor weighing against discretionary intervention is the third factor, the potential to inappropriately broaden or delay the proceeding. *See* 69 Fed. Reg. at 2201. Although NEI has expressed an interest in expediting the proceeding, *see* NEI Petition at 8, NEI ultimately supports the grant of a construction authorization to DOE, but then takes issue with DOE's purported "over-conservatism" in its LA. *See id.* at 1, 4-5. Litigation of NEI's contentions would inappropriately broaden or delay the proceeding when both DOE and NEI support grant of the construction authorization. Another factor weighing against intervention is the fact that both DOE and NEI support the construction authorization. *See* 10 C.F.R. § 2.309(e)(2)(ii). Even though NEI asserts that its interests and DOE's interests "are not identical," NEI Petition at 8, in its defense for this criterion, NEI states that "[n]o party other than DOE will support the project and demonstrate its acceptability with the same vigor and technical expertise as would NEI." *Id.* It can then be inferred that NEI's interests, even if "not identical" to DOE's, "will be represented by [an] existing part[y]" to some large extent. *See* 10 C.F.R. § 2.309(e)(2)(ii). Along these lines, NEI's interests, to support the construction authorization, also "will be protected" to some large extent by DOE in this proceeding. *See* 10 C.F.R. § 2.309(e)(2)(i). Therefore, NEI has not met its burden of demonstrating that it should be granted discretionary intervention in this proceeding. Accordingly, for all of the foregoing reasons, the NRC staff opposes discretionary intervention by NEI.

2. Petitioners That Have Demonstrated Standing

a. California

The NRC Staff does not oppose California's standing to intervene in this proceeding based on California's argument of threatened harm "posed by the migration of radioactive material from the repository into California's groundwater." CAL Petition at 9.

b. Clark County, Nevada

As an "affected unit of local government," Clark County need not address the issue of standing. *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 7-8).

c. Inyo County, California

As an "affected unit of local government," Inyo County need not address the issue of standing. *Id*.

d. Nevada

Pursuant to 10 C.F.R. § 2.309(d)(2)(iii), the State of Nevada need not address the issue of standing because Yucca Mountain is located within the State's boundaries. *Id.* at 7.

e. Nevada Counties of Churchill, Esmeralda, Lander and Mineral

As "affected units of local government," the Nevada Counties of Churchill, Esmeralda, Lander and Mineral need not address the issue of standing. *Id.* at 7-8.

f. Nye County, Nevada

Pursuant to 10 C.F.R. § 2.309(d)(2)(iii), Nye County need not address the issue of standing because Yucca Mountain is located within the County's boundaries. *Id.* at 7.

g. Timbisha Shoshone Tribe

Pursuant to the Commission's Notice of Hearing, the Timbisha Shoshone Tribe (Tribe), because of its status as an affected Federally-recognized Indian Tribe, does not need to

address standing requirements in its petition to intervene. *Id.* However, two separate petitions to intervene, one by Darcie Houck (TIM Petition), Esq. and one by Joe Kennedy (TOP Petition), were filed on behalf of the Tribe. Timbisha Shoshone Tribe's Petition for Leave to Intervene in the Hearing, Dec. 22, 2008 (TIM Petition), at 2-4; Timbisha Shoshone Yucca Mountain Oversight Program Non-Profit Corporation Petition to Intervene as a Full Party, Dec. 22, 2008 (TOP Petition), at 3-4. Each petitioner bases its standing argument on the assertion that it represents the Timbisha Shoshone Tribe.

There is evidence of significant conflict between the two Petitioners as to who is the rightful Tribal leader. For this reason, identifying the authorized representative of the Tribe for the purpose of this proceeding is difficult without additional supporting evidence from the Petitioners themselves. In a letter dated February 29, 2008, the Bureau of Indian Affairs, Central California Agency (BIA), recognized Joe Kennedy as Chairman of the Timbisha Shoshone Tribal Council. Letter from Troy Burdick, Superintendent, Bureau of Indian Affairs, Central California Agency, to Joe Kennedy, Timbisha Shoshone Tribe (Feb. 29, 2008). However, in a letter dated October 17, 2008, BIA recognized actions taken during a September 20, 2008 General Council meeting that removed Joe Kennedy as Tribal Chairman and recognized George Gholson as the new Chairman. BIA clarified, in a letter dated November 10, 2008, that decisions to acknowledge Tribal action are not final for the Department of Interior until the opportunity for appeal is exhausted, and since there is an outstanding appeal, BIA continued "to recognize Mr. Kennedy and Mr. Beaman and the Tribal Council seated prior to January 20, 2008" (the February 29, 2008 BIA letter recognized the results of a January 20th meeting) for government-to-government purposes. This letter also acknowledged that the decision in the October 17, 2008 letter was also subject to appeal. On November 13, 2008, the Timbisha Tribal Council chaired by Mr. Kennedy filed a notice of appeal of BIA's October 17, 2008 decision that recognized George Gholson as the new Chairman. Letter from Troy Burdick, Superintendent, Bureau of Indian Affairs, Central

California Agency, to Joe Kennedy, Timbisha Shoshone Tribe and George Gholson (Oct. 17, 2008). Copies of these letters are attached hereto as Attachment A, Tribal Representation Letters.

On December 4, 2008, the Regional Director of the Bureau of Indian Affairs, Pacific Regional Office affirmed the BIA decision of October 17, 2008. Letter from Dale Morris, Regional Director, Bureau of Indian Affairs, Pacific Regional Office, to John Peebles, Esq., Fredericks Peebles & Morgan LLP, Judith A. Shapiro, Esq., Attorney for Appellants, and Darcie Houck, Esq., Fredericks Peebles & Morgan LLP (Dec. 4, 2008). This December 4, 2008 decision recognized the Tribal Council as established during the September 20, 2008 meeting with Mr. Gholson as Tribal Chairman. Furthermore, this decision was made effective immediately, but could be appealed to the Interior Board of Indian Appeal within 30 days of receipt of the decision. The Staff is not aware of whether such an appeal has been filed. However, on December 17, 2008, the Timbisha Shoshone Tribe as represented by the Tribal Council chaired by Joe Kennedy (Tribe as represented by Joe Kennedy), filed a complaint for declaratory and injunctive relief in the United States District Court for the Eastern District of California seeking review of the December 4, 2008 decision of the Regional Director of the Bureau of Indian Affairs. Complaint for Declaratory and Injunctive Relief, Timbisha Shoshone Tribe v. Kempthorne, No. 2:08-cv-03060-MCE-DAD (E.D. Cal. Dec. 17, 2008). On December 19, 2008, the Tribe as represented by Joe Kennedy, filed a motion for a temporary restraining order and preliminary injunction seeking to enjoin the implementation of the December 4, 2008 decision of the Regional Director of the Bureau of Indian Affairs. *Ex Parte* Application for Temporary Restraining Order and Preliminary Injunction on Shortened Time, Timbisha Shoshone Tribe v. Kempthorne, No. 2:08-cv-03060-MCE-DAD (E.D. Cal. Dec. 19, 2008). The supporting memorandum contains exhibits which include the letters from the Bureau of Indian Affairs referenced by the Staff. Memorandum of Points and Authorities in Support of Application for Temporary Restraining Order and

Preliminary Injunction, Timbisha Shoshone Tribe v. Kempthorne, No. 2:08-cv-03060-MCE-DAD (E.D. Cal. Dec. 19, 2008). The application for a temporary restraining order was denied on December 23, 2008, and the motion for a preliminary injunction was withdrawn that same day. Memorandum and Order, Timbisha Shoshone Tribe v. Kempthorne, No. 2:08-cv-03060-MCE-DAD (E.D. Cal. Dec. 23, 2008); Notice of Withdrawal of Motion for PI, Timbisha Shoshone Tribe v. Kempthorne, No. 2:08-cv-03060-MCE-DAD (E.D. Cal. Dec. 23, 2008). However, as of February 3, 2009, the complaint is still pending.

In light of the apparent recent leadership disputes between the Petitioners, and the two separate petitions received by the NRC, the NRC Staff submits that each petitioner should be required to specifically establish its authorization to represent the Tribe or address whether it, as a non-governmental entity, meets the NRC's standing requirements. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-00-5, 51 NRC 90, 98 (2000) ("The petitioners bear the burden to allege facts sufficient to establish standing.").

h. White Pine County, Nevada

As an "affected unit of local government," White Pine County need not address the issue of standing. *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 7-8).

III. Interested Governmental Participants

A. Eureka County, Nevada

The Staff does not object to the participation of Eureka County, an "affected unit of local government," as an interested governmental participant pursuant to 10 C.F.R. § 2.315(c).

B. Lincoln County, Nevada

The Staff does not object to the participation of Lincoln County, an "affected unit of local government," as an interested governmental participant pursuant to 10 C.F.R. § 2.315(c).

IV. Compliance with 10 C.F.R. § 2.1003

Pursuant to 10 C.F.R. § 2.1012(b)(1), a petitioner, including a potential party given access to the Licensing Support Network (LSN), may not be granted party status under 10 C.F.R. § 2.309 or status as an interested governmental participant under § 2.315, if it cannot demonstrate substantial and timely compliance with the requirements of § 2.1003 at the time it requests participation in the HLW proceeding under § 2.309 or § 2.315. *See also High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 4). Section 2.1003 requires each potential party, interested government participant, and party to certify, in compliance with procedures implemented under § 2.1009, that it has made its documentary material available on the LSN. Pursuant to § 2.1009(b), this certification must be made to the Pre-License Application Presiding Officer (PAPO). In addition, a petitioner will not be found to be in substantial and timely compliance unless the petitioner complies with all of the PAPO's orders regarding electronic availability of documents. *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 4).

A person denied party or interested governmental participant status pursuant to § 2.1012(b)(1) may request such status upon a showing of subsequent compliance with the requirements of § 2.1003. *Id*. at 4 n.1; s*ee also Submission and Management of Records and Documents Related to the Licensing of a Geologic Repository for the Disposal of High-Level Radioactive Waste,* 54 Fed. Reg. 14,925, 14,937 (April 14, 1989) (A person denied such status "may later come into compliance and be admitted to the hearing, assuming they meet all the requirements in § 2.1014 or 10 CFR 2.715(c) [currently 2.309 or 2.315(c)] for admission."). However, any such a party or interested governmental participant subsequently admitted into the proceeding must take the proceeding as they find it and the proceeding shall not be delayed in order to accommodate any such party. *See High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 4 n.1); *see also* 54 Fed. Reg. at 14,937.

As of the last day to file requests for hearings, December 22, 2008, all but two of the petitioners have certified, pursuant to 10 C.F.R. § 2.1003 that they have made their documentary material available on the LSN. The Caliente Hot Springs Resort has never made any documentary material available on the LSN and, it has never participated in any manner or to any extent, not even minimally, in the pre-license application phase of the proceeding. The Resort, even if found to have standing and to have proffered an admissible contention, should not be granted party status until it can demonstrate compliance with the requirements of § 2.1003.

Further, the Staff is not aware that the Timbisha Shoshone Tribe (TIM) has filed a certification to the PAPO that it has made its documentary material available on the LSN, although the Staff is aware that TIM has made documentary material available on the LSN. TIM should be required to file a certification of compliance with section 2.1003 before it is permitted to participate in this proceeding, in the event that its petition is found to be otherwise in compliance with section 2.309.

V. Petitioners' Proffered Contentions

A. Legal Standards for Admissibility of Contentions

1. General Requirements for Admissibility

The legal requirements governing the admissibility of contentions are well established, and are set forth in the Commission's Rules of Practice at 10 C.F.R. § 2.309(f)(1). To be admitted, a contention must satisfy the following requirements:

> (i) Provide a specific statement of the issue of law or fact to be raised or controverted;
>
> (ii) Provide a brief explanation of the basis for the contention;
>
> (iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;
>
> (iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the

> proceeding;
>
> (v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; [and]
>
> (vi) . . . [P]rovide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief[.]

10 C.F.R. § 2.309(f)(1). Failure to comply with any one of the 10 C.F.R. § 2.309(f)(1) requirements is grounds for dismissal of the contention. Changes to Adjudicatory Process, 69 Fed. Reg. 2,182, 2,221 (Jan. 14, 2004); *see also Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999).

It is well established that the purpose of the contention rule is to "focus litigation on concrete issues and result in a clearer and more focused record for decision." 69 Fed. Reg. at 2,202; *see also Vermont Yankee Nuclear Power Corp v. NRDC*, 435 U.S. 519, 553-54 (1978). The Commission has stated that it "should not have to expend resources to support the hearing process unless there is an issue that is appropriate for, and susceptible to, resolution in an NRC hearing." 69 Fed. Reg. at 2202.

The Commission has also noted that the "contention rule is strict by design." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). Strict adherence to these requirements serves (1) to focus the proceeding "on real disputes susceptible of resolution in an adjudication"; (2) to put other parties sufficiently on notice of the issues "and thus give[s] them a good idea of the claims they will be either supporting or opposing"; and (3) to assure that the hearing process is "triggered only by those able to proffer at least some

minimal factual and legal foundation in support of their contentions." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999).

Similarly, long-standing Commission precedent establishes that contentions may only be admitted in an NRC licensing proceeding if they fall within the scope of issues set forth in the *Federal Register* notice of hearing and comply with the requirements of former § 2.714(b) (subsequently restated in § 2.309(f)), and applicable Commission case law. *See, e.g.*, *Public Service Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 & 2), ALAB-316, 3 NRC 167, 170-71 (1976); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), LBP-91-19, 33 NRC 397, 400 (1991). In addition to the requirements set out above, "no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding." 10 C.F.R. § 2.335(a); *see also Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 218 (2003).

2. Individual Admissibility Requirements

Commission case law and rulings from the Advisory Pre-license Application Presiding Officer ("APAPO") Board's case management order on contentions requirements, *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450 (2008), provide additional guidance on the individual contention admissibility requirements.

a. Specific Statement of the Legal or Factual Issue

An admissible contention must provide a specific statement of the legal or factual issue sought to be raised. 10 C.F.R. § 2.309(f)(1)(i). The APAPO Board emphasized that "potential parties shall also strive to frame narrow, single-issue contentions." *High-Level Waste Repository,* LBP-08-10, 67 NRC at 454. Although single-issue contentions may result in an overall greater number of contentions and some duplication, contentions should be specific enough "to define the relevant issues for eventual rulings on the merits, and not

require the parties or licensing boards to devote substantial resources to narrow or clarify them." *Id.*

b. Brief Explanation of the Basis for the Contention

An admissible contention must provide a brief explanation of the basis for the contention, "indicating the potential validity of the contention." 10 C.F.R. § 2.309(f)(1)(ii); Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989). The brief explanation also helps define the scope of a contention. *See Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-28, 56 NRC 373, 379 (2002). The basis of a contention must be set forth with reasonable specificity "to put the other parties on notice as to what issues they will have to defend against or opposed." *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), ALAB-899, 28 NRC 93, 97 (1988), *aff'd sub nom. Massachusetts v. NRC*, 924 F.2d 311 (D.C. Cir. 1991), *cert. denied*, 502 U.S. 899 (1991).

c. Within the Scope of the Proceeding

An admissible contention requires a showing that "the issue raised is within the scope of the proceeding." 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co*. (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). A licensing board "does not have the power to explore matters beyond those which are embraced by the notice of hearing for the particular proceeding." *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-90 n.6 (1979). Therefore, contentions outside of the prescribed scope of the proceeding must be inadmissible.

The scope of the proceeding on DOE's Application to seek a construction authorization

for a geologic repository at a geologic repository operations area at Yucca Mountain is limited to contested safety, security, or technical issues. *High-Level Waste Repository*, CLI-08-25, 67 NRC at __ (slip op. at 9). The Commission's regulations in 10 C.F.R. Part 63 and the environmental regulations related to a construction authorization for a geologic repository under 10 C.F.R. Part 51 detail the specific matters that must be considered for the construction authorization to be granted. The failure of a proposed contention to demonstrate that an issue is within the scope of a proceeding is grounds for its dismissal. 69 Fed. Reg. at 2221; *PFS*, CLI-99-10, 49 NRC at 325.

d. Materiality

An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the issue of the contention would impact the grant or denial of the pending construction authorization. *See* Rules of Practice for Domestic Licensing Proceedings-Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,163, 33, 172 (Aug. 11, 1989)). The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 450, 455.

e. Concise Statement of Supporting Facts or Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention

adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" should "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 450, 455. A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citation omitted).

f. Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "'bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Millstone*, CLI-01-24, 54 NRC at 358 (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

B. Petitioners' Proffered Contentions

1. Opposed Contentions

a. Safety Contentions

4NC-SAFETY-1 - INSUFFICIENT ANALYSIS IN THE LICENSE APPLICATION AND SAR OF TRANSPORTATION CONTAINER USAGE AND CORRELATING IMPACTS ON WORKER SAFETY

> The Department of Energy (DOE) is required to include, in the Safety Analysis Report (SAR), a description of the "processes" of the site that might affect the design of the geologic repository operations area and performance of the geologic repository. 10 C.F.R. § 63.21(c)(I) (2008). The type of container DOE will receive at the repository and the resulting impact of that shipping container selection on Repository worker safety is one such "process" DOE must analyze in the SAR. The Nuclear Regulatory Commission (NRC) may only authorize construction of the repository at Yucca Mountain if there is "reasonable assurance" that the radioactive material can be "received and possessed in a geologic repository operations area...without unreasonable risk to the health and safety of the public." 10 C.F.R. § 63.31(a)(3)(vi) (2008). In order to make such a conclusion, the Commission shall consider whether "DOE's proposed operating procedures to protect health and to minimize danger to life or property are adequate." 10 C.F.R. § 63.31(a)(3)(vi) (2008). Thus, NRC should consider the impacts on worker safety resulting from an accurate estimate of the type and number of canisters used to ship SNF to the repository.

4NC Petition at 29. The Four Nevada Counties allege that it is likely that Yucca Mountain will receive spent nuclear fuel (SNF) in Transportation, Aging, and Disposal canisters (TADs) in a significantly smaller percentage than the 90 percent of SNF in TADS contemplated by the license application. *Id*. The Four Nevada Counties argue that DOE has not adequately addressed the “process” of the type of shipping container DOE will receive at the repository and the impacts of that selection on worker safety. *Id*.

Staff Response

The Staff opposes the admission of 4NC-SAFETY-1 because it: (a) does not raise an issue within the scope of the proceeding; and (b) does not demonstrate that the issue is material to the findings the NRC must make to support the action involved in the proceeding. *See* 10 C.F.R. § 2.309(f)(1)(iii) and (iv).

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

The Four Nevada Counties question whether the license application's design for the surface facilities that is based on a 90 percent TAD canistered approach for handling commercial SNF is realistic, speculate that the repository will likely receive a smaller percentage of TADs than accounted for in the license application, and express concerns about uncertainties regarding the use of TADs, such as who will purchase TADs and whether commercial generators will repackage fuel. 4NC Petition at 30-31. According to its SAR, DOE expects to receive 90 percent of commercial SNF in TAD canisters that have been loaded, sealed, internally dried, and inserted by the commercial nuclear utilities. SAR Section 1.2.1.1 at 1.2.1-2; SAR Section 1.2.1.1.2 at 1.2.1-4. DOE expects the remaining 10 percent of commercial SNF that is in a dual-purpose canister or uncanistered to be transferred into a TAD canister in the Wet Handling Facility at Yucca Mountain. SAR Section 1.2.1.1.2 at 1.2.1-4. The Staff reviews what DOE proposes in its license application. *See* 10 C.F.R. § 63.31. Any changes DOE may make to its SAR will be governed by the procedures set forth in 10 C.F.R. § 63.44. If the Four Nevada Counties' prediction comes true and less than 90 percent of commercial SNF is received at Yucca Mountain in TADs, the NRC would expect DOE to comply with the requirements of 10 C.F.R. § 63.44. Consequently, 4NC-SAFETY-1 is outside the scope of this proceeding and should not be admitted.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

In its license application, DOE proposed a surface facilities design based on receiving 90 percent of commercial SNF in TADs. SAR Section 1.2.1.1.2 at 1.2.1-4. As discussed above, the Four Nevada Counties' argument based on speculation that future operation will be different from what is contained in the license application is therefore not material to the findings the NRC must make to support the action involved in this proceeding, i.e. to grant or deny the construction authorization based on the license application submitted by DOE. *See* 10 C.F.R. § 2.309(f)(1)(iv). Therefore, the Staff opposes the admission of 4NC-SAFETY-1

as it does not satisfy all of the requirements contained in 10 C.F.R. § 2.309(f)(1).

CLK-SAFETY-001 – THE DOE'S INADEQUATE TREATMENT OF UNCERTAINTY

> Treatment of uncertainty in the Safety Analysis Report ("SAR") is neither complete, integrated, nor unbiased. Three important sources of uncertainty that impact the SAR results – data assumptions, model assumptions, and methods assumptions – appear in the SAR primarily as assumptions, screening "analyses," and claims of conservatism, presented without associated technical bases. As a result, risk could be much higher than calculated. The DOE's evaluation of risk is therefore unreliable and fails to comply with the safety requirements of 10 CFR Part 63.

CLK Petition at 3. Clark County argues that the treatment of uncertainty in the entire Safety Analysis Report (SAR), both preclosure and postclosure is inadequate. Specifically Clark County argues that DOE's omission in its preclosure analysis of justifications for many assumptions, screening analyses and claims of conservatism renders the results of the analysis unreliable. *Id.* In the postclosure portion of the SAR, Clark County argues that DOE's treatment of uncertainty is inadequate. *Id*. at 4.

Staff Response

As discussed below, however, Clark County's contention is not supported by facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Clark County fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, CLK-SAFETY-001 should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. However, even if a contention references an expert opinion, that expert must still provide the basis or explanation for that opinion. *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). As an initial matter, Clark County states that DOE's assessment of risk is difficult to evaluate and that it is not possible for Clark County to identify all the cases of DOE's inadequate treatment of uncertainty. CLK

Petition at 8, 10-11. Clark County refers to the examples listed in Table 1. *Id*. at 11.

However, none of the examples provided in Table 1 alleged to demonstrate DOE's inadequate treatment of uncertainty are supported by fact, documents, or expert opinions. Many of the examples in Table 1 reference the findings of other organizations, such as the Independent Performance Assessment Review (IPAR) Panel, the Nuclear Waste Technical Review Board (NWTRB) and the NRC Staff to support Clark County's assertions regarding the inadequacies of the application. *See id.* at 12-21. Other examples have no specific references, although Clark County did attach an affidavit from Dr. Dennis C. Bley. CLK Petition, Attachment 4. Dr. Bley states that he adopts as his own "the opinions and statement expressed in contention CLK-SAFETY-001." Declaration of Dennis Bley, ¶ 3. The Staff, therefore, assumes that for those assertions made in Table 1 that are not otherwise supported are the opinions of Dr. Bley.

None of the examples cited by Clark County in its table provide any explanation for the basis of its assertion that DOE inappropriately considered risk in either its preclosure or postclosure analyses. Many of the statements in the table simply question whether there is data or a model to support an assertion in the SAR, without explaining why the questioned assumptions are inadequate. For example, under "Data Assumptions," "Unjustified Assumptions," item 1.1.3 notes that the analysis supporting SAR Section 1.6.3.4.1 provides no basis for the claim that all midair collisions and flights into terrain occur during maneuvering. *Id*. at 13. However, other than asking "Does data or a model support this?" Clark County fails to specify why DOE's assumption is not valid. *See also* items 1.1.2; 1.1.4, at *id.* In another item in Table 1, Dr. Bley states that DOE needs to explain assertions regarding the assumptions used in an evaluation of drip shield and waste package early failure. *See* item 2.3.3, CLK Petition at 17. But there is no explanation of how or why DOE's assumptions are inadequate. These statements, even if supported by an expert, are insufficient to demonstrate a genuine dispute with the application. Commission case law

requires an expert to explain the basis for his or her opinion. Mere conclusory statements or bald assertions are inadequate. *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) ("[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate.") (citations omitted). None of the items discussed in Table 1 provide an explanation of the basis of the expert's conclusion. Accordingly, CLK-SAFETY-001 should be rejected for failure to meet 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citation omitted). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.")

Clark County only briefly addresses the requirements of section 2.309(f)(1)(vi). Clark County asserts that, as discussed in section 5 of its contention, the LA does not comply with 10 C.F.R. sections 63.111, 63.113 and 63.114. CLK Petition at 22. In section 5 of its contention Clark County asserts that "in an analysis that seeks to quantify all events with probabilities greater than 1 chance in 10,000 over 10,000 years (1×10^{-8} per year),

uncertainty is the key to an adequate analysis; it must be thoroughly treated, allowing for the wide variety of possible futures as well as uncertainty in underlying assumptions, models and data." CLK Petition at 8. To the extent that Clark County is asserting that DOE is required to quantify all events that have probabilities greater than 1×10^{-8} per year, Clark County misunderstands the requirements of Part 63. Pursuant to 10 C.F.R. § 63.342, DOE need not evaluate the impacts of any event, even if it meets the threshold probability of 1×10^{-8}, if the results of the performance assessments would not be changed significantly. Thus, DOE is not required to quantify all events as Clark County appears to assert.

The only other statement Clark County makes to meet this criterion is that the failure to address uncertainty could lead to an underestimation of risk to the workers in the preclosure analysis and to an underestimation of the consequences of postclosure radioactive releases which could have economic and social impacts to the residents of Clark County. CLK Petition at 22. This assertion is inadequate as Clark County does not reference any specific section of the SAR with which it claims to have a dispute. *See* 10 C.F.R. § 2.309(f)(1)(vi) (requiring specific references to those portions of the application with which the petitioner alleges a dispute). Further, many of the issues raised by Clark County have, in fact, been addressed by DOE in the SAR. None of the examples provided in by Clark County in Table 1 demonstrate that the alleged deficiencies in DOE's analyses would have any effect on DOE's analyses and, thus, do not raise a dispute on a material issue.

For example, on Table 1 under "Model Assumptions," "Unjustified Assumptions," Clark County identifies issues associated with dust deliquesance as it would have an effect on localized corrosion. CLK Petition at 14-16. Based on examples of where outside organizations had questions on this issue, Clark County asserts that "an objective treatment of uncertainty is needed." CLK Petition at 16. However, DOE discusses localized corrosion in the SAR, including dust deliquesance, and Clark County fails to raise any dispute with respect to this discussion. *See* SAR at 2.3.6-41. In another example Clark county states

"We have not found that the effects of stresses introduced during handling mishaps are considered in the SAR." Item 2.2.2, CLK Petition at 16. However, DOE has addressed this issue in section 2.3.6 of the SAR. SAR at 2.3.6-60. *See also* item 2.3.2, CLK Petition at 16, failing to recognize that the SAR does discuss how commercial spent fuel bounds the results of Naval fuel (SAR at 2.4-541, 542); item 2.3.3, CLK Petition at 17, failing to recognize that the SAR does address early failure scenarios for the drip shield (SAR at 2.3.6-14, 15).

Clark County's references to Staff RAIs, the IPAR Panel, and the NWTRB also do not indicate that a genuine dispute exists with the LA. Turning first to Clark County's reliance on the Staff's RAIs, (*see* Clark County Petition at 9, 10), it is well settled in Commission proceedings that mere reference to Staff RAIs is insufficient to demonstrate a genuine dispute on a material issue of law or fact with the applicant. *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 336-37 (1999). In *Oconee* the Commission stated that "Petitioners seeking to litigate contentions must do more than attach a list of RAIs and declare an application 'incomplete.' It is their job to review the application and to identify <u>what</u> deficiencies exist and explain <u>why</u> the deficiencies raise material safety concerns." *Id*. at 337 (emphasis in the original). However, Clark County fails to explain how or why the issues it raises demonstrate a genuine dispute with the applicant on a specific portion of the application. Accordingly, to the extent that Clark County relies on the existence of Staff RAIs to demonstrate inadequacies in the SAR, its contention should be rejected.

Similarly Clark County's references to the opinions of other outside organizations such as the IPAR Panel and the NWTRB fail to demonstrate a genuine dispute with the applicant. The Commission, in the *Oconee* proceeding, stated, in affirming the dismissal of a contention based solely on Staff RAIs, that "the petitioners did not posit any reason or support *of their own* – no alleged facts and no expert opinions – to indicate that the application is materially deficient." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 337 (1999) (emphasis added). Although here Clark County is not relying on Staff RAIs, the same concerns apply. Clark County does not posit any reason or support of its own (or of its expert) to demonstrate that the application is materially deficient. Accordingly, Clark County's reliance on the opinions of the IPAR Panel and NWTRB does not support the admission of this contention. Thus, for the reasons discussed above, CLK-SAFETY-001 fails to meet the requirements of 10 C.F.R. §2.309(f)(1)(vi) and it should be rejected.

CLK-SAFETY-002 - THE DOE'S FAILURE TO ANALYZE MISSILE TESTING

> The SAR improperly failed to analyze the risks to the proposed repository at Yucca Mountain associated with ground-to-ground missile testing at the Nevada Test Site ("the NTS").

CLK Petition at 23. Clark County alleges that SAR Section 1.6.3.4.1 improperly eliminated analysis of ground-to-ground missile testing at the Nevada Test Site (NTS) because "there are no final and definitive assurances or evidence that ground-to-ground missile testing at the NTS will never again be conducted and never again pose a threat during the pre- or post-closure periods." CLK Petition at 23.

Staff Response

The Staff opposes the admissibility of CLK-SAFETY-002 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not establish a genuine dispute with DOE's license application. The Staff also objects, in part, to this contention because, to the extent it relies on the joint statement of the Secretaries of Energy, Defense, and State, it does not satisfy 10 C.F.R § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). A "[m]ere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (internal citation omitted); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Station, Units 1 & 2). LBP-02-4, 55 NRC 49, 66 (2002) ("Mere reference to documents does not, however, provide an adequate basis for a contention.") (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 & 2), CLI-98-25, 48 NRC 325, 348 (1998)). Clark County fails to meet its burden of presenting supporting

facts or expert opinion.

CLK-SAFETY-002 presents historical information about nuclear weapons testing in the United States. *See* CLK Petition at 25-26. In addition, Clark County references a joint statement issued in 2007 by the Secretaries of Energy, Defense, and State noting "that delays in modernizing the nuclear weapons stockpile raise 'the prospect of having to return to *underground* nuclear testing to certify existing weapons.'" *Id.* at 26 (emphasis added). However, Clark County does not explain how the background information or joint statement relates to the issue in the contention, which is a concern with ground-to-ground missile testing at the Nevada Test Site. *See id.* at 23. Even if the United States were to conduct nuclear testing in the future, such testing would be underground as the United States is a party to a treaty that bans atmospheric nuclear weapons testing. *See* Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, *done* Aug. 5, 1963, 14 U.S.T. 1313, 480 U.N.T.S. 43. Therefore, the joint statement and related background information on nuclear weapons testing does not support the contention's apparent concern with above-ground missile testing. Consequently, this information does not provide adequate supporting facts under 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A petitioner must show that a genuine dispute exists with the applicant on a material issue of law or fact and include references to the specific portions of the application that the petitioner disputes and the supporting reasons for each dispute. 10 C.F.R. § 2.309(f)(1)(vi). Clark County only references SAR Section 1.6.3.4.1, which addresses the preclosure safety analysis. However, Clark County asserts that DOE has failed to meet the postclosure requirements. Clark Petition at 24-25 (citing 10 C.F.R. §§ 63.31(a)(2), 63.31(a)(3), 63.21(c)(9), 63.21(c)(15), 63.113, and 63.114). Because Clark County does not reference anything in the postclosure portion of the license application or anything that demonstrates how the analysis in SAR Section 1.6.3.4.1 is applicable to the postclosure period, the

contention fails to demonstrate a genuine dispute on a material issue of law or fact with respect to Clark County's claim that the SAR improperly failed to analyze risks associated with ground-to-ground missile testing during the postclosure period. Clark County also does not explain how DOE's analysis in a preclosure SAR section, 1.6.3.4.1, fails to comply with these postclosure regulations. Therefore, Clark County has not alleged a genuine dispute on a material issue of law or fact with respect to the pre-closure period. Consequently, CLK-SAFETY-002 does not establish a genuine dispute on a material issue of fact or law and should not be admitted. *See* 10 C.F.R. § 2.309(f)(1)(vi).

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to justify its rationale for eliminating analysis of ground-to-ground missile testing at the Nevada Test Site in SAR Section 1.6.3.4.1. *See* ADAMS Accession Nos. ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ADAMS Accession Nos. ML090090034, ML090090035. To the extent this response addresses the issue raised in CLK-SAFETY-002, the contention may be moot.

CLK-SAFETY-003 - THE DOE MISCALCULATES BASALTIC MAGMA MELTING DEPTH

> SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, which indicate the probability of igneous activity disrupting a repository drift, underestimates that probability, likely by two or more orders of magnitude, because it assumed incorrectly that melting to produce basaltic magma will be in the shallow lithospheric mantle and not in the deeper asthenosphere.

CLK Petition at 28. In this contention, which is virtually identical to NEV-SAFETY-150, Clark County argues that basalt magma is produced in the asthenosphere, and not in the lithosphere. *Id.* Clark County discusses studies that it asserts indicate that deep melting is present in the Yucca Mountain area. *Id.* at 29-33. Clark County concludes that the probability estimate for igneous events is based on where (*i.e.* at what depth) basalt magma is produced, and because DOE did not use the correct depth, the probability estimate for future igneous activity is incorrect. *Id.* at 34.

Staff Response

The Staff opposes the admission of CLK-SAFETY-003 as explained below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Pub. Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references.

Fansteel, Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Clark County has not supported its assertion that DOE has underestimated the probability of melting "likely by two or more orders of magnitude." *See* CLK Petition at 34. Clark County fails to demonstrate or explain how the arguments it makes and literature it cites regarding whether deep melting or shallow melting occurred support an error by two or more orders of magnitude for the probability estimate of igneous activity in DOE's application. *See* Clark Petition at 29-34.

Clark County provides an affidavit from Dr. Eugene I. Smith who simply states that the opinions and statements expressed in contention CLK-SAFETY-003 are his own. CLK Petition, Attachment 3, Affidavit of Eugene I. Smith. However, Dr. Smith does not provide any further explanation to support the assertions contained in CLK-SAFETY-003. *See id.* "An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citing *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation) LBP-98-7, 47 NRC 142, 181 (1998)). None of the information presented in the contention estimates the probability of future activity based solely on the assumption of deeper-mantle magma source regions. The County gives no explanation to support the assertion that DOE's probability estimate is inaccurate by two or more orders or magnitude. *See* CLK Petition at 34. The assertion of the large change is therefore conclusory, and, thus must be rejected. *See USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the

petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

Clark County does not provide an analysis or reference that show how the issue of contention would make a difference with respect to a finding of "reasonable expectation" necessary to support the construction authorization under 10 C.F.R.§ 63.31(a)(2). Further, Clark County has not shown how the contention would affect the repository postclosure performance objectives of 10 C.F.R. § 63.113. For example, there is no showing that the claimed error would cause the radiological exposures to the reasonably maximally exposed individual (RMEI) to be exceeded, and thus § 63.113(b) to be violated. Thus Clark County has not shown a material dispute with the application on a relevant issue. *See* 10 C.F.R. § 2.309(f)(1)(vi).

CLK-SAFETY-003 seeks to raise a dispute with SAR subsections 2.2.2.2.3.1, 2.3.11.2.2 and "related" sections. To the extent that Clark County seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. Here, because Clark County does not specify which other "related" sections of the SAR it wishes to dispute, except for 2.3.11.2.2.5 (CLK Petition at 30), the contention fails to meet criterion 6 with respect to those other unidentified sections. If Clark County wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Clark County believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants

themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Clark County has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For all of the foregoing reasons, CLK-SAFETY-003 is inadmissible and should be rejected.

CLK-SAFETY-004 - THE DOE IGNORES THE TIME SPAN OF BASALTIC VOLCANISM

> SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, which indicate the probability of igneous activity disrupting a repository drift, underestimates that probability, likely by two or more orders of magnitude, because the DOE ignored the entire 11 million year span of basaltic volcanism near Yucca Mountain.

CLK Petition at 35. In support of the contention, which is virtually identical to NEV-SAFETY-151, Clark County states that "DOE considered only the past 5 million years of the geologic record." *Id.* Clark County argues that during the past 11 million years, two "super-episodes" of volcanism occurred, and the Lathrop Wells eruption 78,000 years ago represents the beginning of a third "super-episode." *Id.*

Staff Response

The Staff opposes admission of CLK-SAFETY-004 for the reasons given below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Pub. Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, "[a]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,'

'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citing *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation) LBP-98-7, 47 NRC 142, 181 (1998)). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *USEC*, CLI-06-10, 63 NRC at 455 (citation omitted).

Clark County has not supported its assertion that DOE has underestimated the probability of igneous activity disrupting a repository drift "likely by two or more orders of magnitude." *See* CLK Petition at 38. Although Clark County provided expert support for this contention, *see* CLK Petition, Attachment 3, Affidavit of Eugene I. Smith, the affidavit does not provide further insight into the contention, but states that Dr. Smith adopts the contention as his own opinion. *See id.* However neither the affidavit nor the contention provide a reasoned basis why the application is wrong, by two orders of magnitude, on its probability estimate. Clark County failed to demonstrate or explain how the arguments it made and literature it cited regarding the "ignored" time period and the start of a third "super-episode" of activity affect the probability of igneous activity and support the idea that DOE erred by two or more orders of magnitude in DOE's application. *See* CLK Petition at 37-39. Thus the contention lacks requisite support and is not admissible. See *USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license

application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

Contrary to the plain-language of the contention's allegation that DOE "ignored" (CLK Petition at 35) the 11 million year volcanic history, Clark County *acknowledges* that that SAR discussed eruptions over the past 11 million years. CLK Petition at 37 (quoting SAR subsection 2.3.11.2.1.1 at 2.3.11-16). Clark County instead shifts its argument from ignoring the past 11 million years to a dispute over placing emphasis on the past 5 million years. *Compare id.* at 35 *with id.* at 37.

In SAR subsection 2.3.11.2.1.1, "Igneous Framework" (SAR at 2.3.11-15 to 2.3.11-18), DOE discussed the diverse volcanic activity from as long ago as 14 million years, which is even longer ago than the period Clark County alleges DOE ignored. For example, the SAR stated "[t]he earliest volcanism in the Yucca Mountain region was dominated by a major episode of caldera-forming silicic (rhyolitic) volcanism that occurred between 15 and 11 million years ago, forming the southwestern Nevada volcanic field (Sawyer et al. 1994)." SAR at 2.3.11-15. The discussion continued and noted "[a]round 11 million years ago, the character of volcanism changed from rhyolitic (silicic) to basaltic, and the volume of material erupted decreased dramatically compared to the final rhyolitic eruptions." *Id.* at 2.3.11-16. Another example is where the SAR stated (regarding drilling) that "[t]hree other basalt units encountered by drilling ranged in age from approximately 9.5 million years to 11.2 million years." *Id.* at 2.3.11-18. Each of these examples demonstrates that the period was not

ignored. Thus, Clark County is mistaken in its assertion that the history was "ignored" (CLK Petition at 35), and its contention cannot be admitted because there is not a genuine dispute with the application.

Clark County does not provide an analysis or reference that show how the issue of contention would make a difference with respect to a finding of “reasonable expectation” necessary to support the construction authorization under 10 C.F.R.§ 63.31(a)(2). Further, Clark County has not shown how the contention would affect the repository postclosure performance objectives of 10 C.F.R. § 63.113. For example, there is no showing that the claimed error would cause the radiological exposures to the reasonably maximally exposed individual (RMEI) to be exceeded, and thus § 63.113(b) to be violated. Thus Clark County has not shown a genuine dispute with the application on a material issue. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Last, CLK-SAFETY-004 seeks to raise a dispute with SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and “related” sections. To the extent that Clark County seeks to raise an issue with a “related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Clark County does not specify which other “related” sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Clark County wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Clark County believes are “related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one

of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Clark County has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For all of the foregoing reasons, CLK-SAFETY-004 is inadmissible and should be rejected.

CLK-SAFETY-005 - THE DOE IMPROPERLY FOCUSES ON UPPER CRUSTAL EXTENSION PATTERNS

> SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, which indicate the probability of igneous activity disrupting a repository drift, underestimate that probability, likely by two or more orders of magnitude, because the DOE focuses improperly on upper crustal extension patterns to explain volcano location and the timing of volcanic events.

CLK Petition at 40. In support of this contention, which is virtually identical to NEV-SAFETY-152, Clark County asserts that when DOE used crustal structures and extension rates to explain the location and timing of volcanic activity near Yucca Mountain, DOE ignored the role of the asthenospheric mantle and a step-change in the thickness of the lithosphere and improperly focused on upper crustal extension patterns. *Id.* The County asserts that because DOE thought no single base-case conceptual model was appropriate, that DOE did not understand the volcanism of the region. *Id.* at 42. The county discusses some literature on possible relationships between "pocket viscosity," the viscosity of the surrounding asthenosphere, and rate of upwelling. *Id.* at 42-47. Lastly, Clark County asserts that a "proper understanding" of volcanism near Yucca Mountain would show that DOE underestimated the probability of igneous activity disrupting a repository drift by two or more orders of magnitude. *Id*. at 47.

Staff Response

The Staff opposes admission of CLK-SAFETY-005 for the reasons below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *USEC*, *Inc.* (American Centrifuge), CLI-06-10, 63 NRC 451, 455 (2006) (citing *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 213 (2003)). An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a

reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *Id.* at 472 (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

Clark County provided expert support for CLK-SAFETY-005. CLK Petition, Attachment 3, Affidavit of Eugene I. Smith. The affidavit does not provide further insight into the contention, but states that the Dr. Smith adopts the contention as his own opinion. *See id.* Regarding Clark County's assertion in the contention that DOE has underestimated the probability of an igneous event disrupting the repository "likely by two or more orders of magnitude," (CLK Petition at 40), the County's expert has offered no explanation about how the expert determined this large change, thus the claim is unsupported. *See* USEC, CLI-06-10, 63 NRC 451 at 472. Clark County offered a discussion on two mechanisms that "may produce upwelling responsible for adiabatic meting" (CLK Petition at 47) and stated that it is possible that the two mechanisms might interact to "produce even more vigorous upwelling flow" (*id.*), but made no effort to relate its discussion of upwelling rates to DOE's probability calculations. *See id*. at 42-47. Thus, the discussion by the expert does not support the contention. *See USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing

view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citation omitted). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."), *aff'd*, CLI-07-25, 66 NRC 101 (2007).

Clark County has not identified a genuine dispute on a material issue with the application. The reason the County said DOE underestimated the probability was because "DOE focuses improperly on upper crustal extension patterns." CLK Petition at 40. However, as will be discussed, Clark County does not proffer information that shows such an improper focus, and information in the SAR indicates otherwise.

The probabilistic volcanic hazard analysis (PVHA) conducted for the Yucca Mountain site described the estimated annual frequency of intersection of the repository by an igneous event and the methods used to develop that estimate. SAR Subsection 2.2.2.2 at 2.2-90. In SAR Subsection 2.2.2.2.3.1 "Geologic Basis for the Probabilistic Volcanic Hazard Analysis," DOE wrote that interpretations of how and where magmas form, and what processes control the timing and location of magma ascent through the crust, underpin the conceptual model of volcanism. SAR Subsection 2.2.2.2.3.1 at 2.2-96. DOE noted "[s]ome PVHA experts distinguished between deep (mantle source) and shallow (upper crustal structure and stress field) processes when considering different scales (regional and local) of spatial control on volcanism." *Id.* at 2.2-97. Therefore, it does not appear that DOE limits its focus to upper crustal extension patterns. Thus, Clark County fails to identity a genuine dispute with the application, and its contention should be rejected. *See Susquehanna*, LBP-07-10, 66 NRC at 24.

The Commission may authorize construction of a geologic repository operations area at the Yucca Mountain site if it determines, in part, that there is "reasonable expectation" that

the materials can be disposed of without unreasonable risk to the health and safety of the public. 10 C.F.R.§ 63.31(a)(2). Clark County does not provide an analysis or reference that show how the issue of contention would make a difference with respect to a finding of "reasonable expectation" necessary to support the construction authorization under 10 C.F.R.§ 63.31(a)(2). Further, Clark County has not shown how the contention would affect the repository postclosure performance objectives of 10 C.F.R. § 63.113. For example, there is no showing that the claimed error would cause the radiological exposures to the reasonably maximally exposed individual (RMEI) to be exceeded, and thus § 63.113(b) to be violated. Thus Clark County has not shown a genuine dispute with the application on a material issue. *See* 10 C.F.R. § 2.309(f)(1)(vi).

CLK-SAFETY-005 seeks to raise a dispute with SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and "related" sections. CLK Petition at 40. To the extent that Clark County seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC.281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Clark County does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Clark County wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Clark County believes are "related" to the named sections. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Clark County has not identified the "related" sections that it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

CLK-SAFETY-006 - THE DOE IMPROPERLY EXCLUDES THE DEATH VALLEY VOLCANIC FIELD AND GREENWATER RANGE FROM VOLCANISM CALCULATIONS

> SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, which indicate the probability of igneous activity disrupting a repository drift, underestimate that probability, likely by two or more orders of magnitude, because the DOE does not include the Death Valley volcanic field in the Greenwater Range as part of the area to be considered for hazard calculations.

CLK Petition at 49. In support of this contention, which is virtually identical to NEV-SAFETY-153, and similar to INY-SAFEY-3, Clark County states that Probabilistic Volcanic Hazard Assessment ("PVHA") ignored the Greenwater Range, and, due the size of the field, it should be considered. *Id.* Also, activity five million years ago at the range was contemporaneous with activity near Yucca Mountain. *Id.* at 51. Clark County surmises that because of similar mineralogy and chemistry, and physical proximity, the Greenwater Range is associated with Yucca Mountain, and inclusion of the range would increase the estimated probability of a repository disruption. *Id.* at 52. Clark County states that had this activity been considered, the probability of igneous activity disrupting the storage would be likely by two or more orders of magnitude. *Id.* at 53.

Staff Response

The Staff opposes admission of CLK-SAFETY-006 for the reasons given below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Pub. Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references"

should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, "[a]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citing *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation) LBP-98-7, 47 NRC 142, 181 (1998)).

Clark County provided expert support for CLK-SAFETY-006. CLK Petition, Attachment 3, Affidavit of Eugene I. Smith. The affidavit does not provide further insight into the contention, but states that the Dr. Smith adopts the contention as his own opinion. *See id.*

Clark County has not supported its assertion that DOE has underestimated the probability of igneous activity disrupting a repository drift "likely by two or more orders of magnitude." *See* CLK Petition at 49. Clark County failed to demonstrate or explain how the arguments it made regarding the Greenwater range support the idea that DOE erred by two or more orders of magnitude in its calculation of disruption probability. *See* CLK Petition at 51-53. Likewise, where Clark County asserts that ignoring the Death Valley field resulted in underestimation of the igneous activity disruption probability (CLK Petition at 52), Clark offers no explanation how consideration of the field would increase the probability. Such an unsupported claim does not support admissibility. *See USEC*, CLI-06-10, 63 NRC at 472. The assertion that the Greenwater Range must be included is conclusory because Clark County has not given any explanation on why Greenwater *must* be included even if closely associated with Yucca Mountain. *See* CLK Petition at 52. The County has provided no data to show the effect of including the range produces an increase of the event of concern, the

igneous intercept probability, by two orders of magnitude. Thus, the contention is unsupported. *See USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

Clark County's contention fundamentally fails because Clark County ignores the fact that the Greenwater Range *was* considered by DOE. The probability of intersection of the repository by a volcanic event was as determined by the PVHA. SAR Section 2.3.11.2.2 at 2.3.11-14 (citing CRWMS M&O (Civilian Radioactive Waste Management System Management and Operating Contractor) 1996. *Probabilistic Volcanic Hazard Analysis for Yucca Mountain, Nevada*. BA0000000-01717-2200-00082 REV 0. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19971201.0221. (LSN# DEN000861156)). In Figure 3-23 "Alternative regions of interest used as background source zones in Bruce Crowe's PVHA model," the expert considered a region designated as AVIP (Amargosa Valley Isotopic Province) that extends beyond the 20 km range desired by Clark County. *See Probabilistic*

Volcanic Hazard Analysis for Yucca Mountain, Nevada at 3-75. Thus, the County's assertion that the Greenwater Range was not considered is incorrect; the PVHA panel did, in fact, consider the Greenwater and Death Valley volcanoes in 1996 when they included consideration of a bounding area that went beyond 20 km. There is thus no genuine dispute between DOE and the County on this issue.

Clark County does not provide an analysis or reference that show how the issue of the contention would make a difference with respect to a finding of "reasonable expectation" necessary to support the construction authorization under 10 C.F.R.§ 63.31(a)(2). Further, Clark County has not shown how the contention would affect the repository postclosure performance objectives of 10 C.F.R. § 63.113. For example, there is no showing that the claimed error would cause the radiological exposures to the reasonably maximally exposed individual (RMEI) to be exceeded, and thus § 63.113(b) to be violated. Thus Clark County has not shown a material dispute with the application on a relevant issue. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Clark County seeks to raise a dispute with SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and "related" sections. To the extent that Clark County seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Clark County does not specify which other "related" sections of the SAR it

wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Clark County wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Clark County believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Clark County has not identified any additional SAR sections that it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

CLK-SAFETY-007 - THE DOE IMPROPERLY ESTIMATES IGNEOUS EVENT PROBABILITY FOR 10,000 YEARS AND 1,000,000 YEARS

> DOE wrongly assumes in SAR Subsections 2.3.11 and 2.3.11.1 and related subsections that its approach to estimating the probability of igneous events for the first 10,000 years is applicable to the probability estimate for 1,000,000 years as well, because its approach fails to consider deep melting models or the entire period of volcanism from 11 million years to the present.

CLK Petition at 54. As support of its contention, which is virtually identical to NEV-SAFETY-154, the County alleges that, while DOE used shallow melting models, deep melting models are more relevant and will increase the rate of predicted future volcanic activity. *Id.* at 56. Also, the County claims that of deep melting models and the "entire volcanic record" implies a future third "super-episode" of volcanic activity in the Yucca Mountain area. *Id.* at 57.

Staff Response

The Staff opposes admission of CLK-SAFETY-007 for the reasons set forth below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Pub. Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further,

"[a]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citing *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

Clark County provided expert support for CLK-SAFETY-007. CLK Petition, Attachment 3, Affidavit of Eugene I. Smith. However, the affidavit does not provide further insight into the contention, but simply states that the Dr. Smith adopts the contention as his own opinion. *See id.*

Clark County has not supported its assertion that DOE has underestimated the probability of igneous activity disrupting a repository drift "likely by two or more orders of magnitude." *See* CLK Petition at 57. Clark County failed to demonstrate or explain how the arguments it made regarding the consideration of time periods from eleven million years ago support the idea that DOE erred by two or more orders of magnitude in its calculation of igneous disruption probability. *See* CLK Petition at 57-58. Thus the contention is unsupported, and not admissible. *See USEC*, CLI-06-10, 63 NRC at 472.

Clark County asserts that if DOE took the correct approach, the probability of an igneous activity event disrupting a repository drift would increase by two or more orders of magnitude. *See* CLK Petition at 75. Clark County offers no citation or explanation about how this value was determined. Accordingly it is unsupported. *See USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a

dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

Clark County has failed to identify a genuine dispute regarding the application because, in fact, the application did consider both deep melting models and the period from 11 million years ago to the present. Regarding the period from 11 million years ago to present, in subsection 2.3.11.2.1.1, "Igneous Framework" (SAR at 2.3.11-15 to 2.3.11-18), DOE discussed igneous activity in the region that started as long ago as 14 million years. For example, the SAR at 2.3.11-15 states, "The earliest volcanism in the Yucca Mountain region was dominated by a major episode of . . . volcanism that occurred between 15 and 11 million years ago. . . ." The SAR at 2.3.11-18 states that "(t)hree other basalt units encountered by drilling ranged in age from approximately 9.5 million years to 11.2 million years." Each of these examples demonstrates that the period was not ignored. Thus, Clark County is mistaken in its assertion, and its contention cannot be admitted because there is not a genuine dispute with the application.

The probability of intersection of the repository by a volcanic event was determined by the PVHA. SAR at 2.3.11-14 (citing CRWMS M&O (Civilian Radioactive Waste Management System Management and Operating Contractor) 1996. Probabilistic Volcanic Hazard Analysis for Yucca Mountain, Nevada. BA0000000-01717-2200-00082 REV 0. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19971201.0221. (LSN# DEN000861156)). In Appendix

E, “Elicitation Interview Summaries” of the PVHA, there are discussions regarding magma, including generation depth. *E.g.* PVHA at RC-2 of 22 (discussing maximum depth of magma generation around 100-150 km for post five-million-year basalt). The discussions demonstrate that, for deep melting, Clark County’s contention fails because Clark County ignores the fact that deep melting was considered by DOE. This also indicates a failure to raise a genuine dispute regarding a material issue of law or fact.

Clark County does not provide an analysis or reference that show how the issue of contention would make a difference with respect to a finding of “reasonable expectation” necessary to support the construction authorization under 10 C.F.R.§ 63.31(a)(2). Further, Clark County has not shown how the contention would affect the repository postclosure performance objectives of 10 C.F.R. § 63.113. For example, there is no showing that the claimed error would cause the radiological exposures to the reasonably maximally exposed individual (RMEI) to be exceeded, and thus § 63.113(b) to be violated. Thus Clark County has not shown a genuine dispute with the application on a material issue. *See* 10 C.F.R. § 2.309(f)(1)(vi).

CLK-SAFETY-007 seeks to raise a dispute with SAR Subsections 2.3.11 and 2.3.11.1 and “related” sections. To the extent that Clark County seeks to raise an issue with a “related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide “sufficient information to show that a genuine dispute exists on a material issue of law or fact.” This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Clark County does not specify which other “related” sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Clark County wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Clark County believes are “related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Clark County has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

CLK-SAFETY-007 asserts that "compliance periods as long as 1,000,000 years" must be considered, but DOE "essentially ignores this requirement." CLK Petition at 54. Clark County does not specify the "requirement" being "essentially ignore[d]", Clark County does state that DOE applied the pre-10,000 year calculations to the post-10,000 year compliance period, and thus the County's concern over probability applies to the longer post-closure compliance period. *See id.* Thus, it appears that this contention relates to the one million year compliance period in 40 C.F.R. 197.13(a), the standard recently issued by the Environmental Protection Agency. *See* Public Heath and Environmental Radiation Protection Standards for Yucca Mountain, Nevada, 73 Fed. Reg. 61,256 (Oct. 15, 2008).

The NRC has not yet published a final rule implementing the EPA dose standard. *See* Implementation of a Dose Standard After 10,000 Years [Proposed Rule], 70 Fed. Reg. 53,313 (Sept. 8, 2005). It has long been agency policy that Licensing Boards "should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission." *See, e.g.*, *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345; *Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), ALAB-813, 22 NRC 59, 86 (1985); *Potomac Elec. Power Co*. (Douglas Point Nuclear Generating Station, Units 1 & 2), ALAB-218, 8 AEC 79, 85 (1974). To consider in adjudicatory proceedings "issues presently to be taken up by the Commission in rulemaking would be, to say the least, a wasteful duplication of effort." *Douglas Point,* ALAB-218, 8 AEC at 85. Thus, to the extent that the contention is challenging the longer period of geological stability, i.e. one million years, it is inadmissible.

For all of the foregoing reasons, CLK-SAFETY-007 is inadmissible and should be rejected.

CLK-SAFETY-008 - THE DOE IGNORES 11-MILLION YEAR VOLCANISM DATA AND INSTEAD RELIES ON ONLY 5-MILLION YEAR VOLCANISM DATA

> The DOE's approach to determining the frequency of future igneous events wrongly ignores the data set obtained from core, which along with surface data provides a record of volcanism back to 11 million years that requires consideration, and wrongly relies instead on the chemistry of surface basalt erupted over the past 5 million years. This approach obscures long-term trends and provides an inaccurate prediction of future events.

CLK Petition at 59. The contention is virtually identical to NEV-SAFETY-155. Clark County disputes SAR 2.3.11.2.1.1, which, according to the County, asserts that the chemistry of buried basalt bodies is essentially the same as basalt exposed on the surface. *Id.* Thus the County believes DOE is ignoring core chemistry data. *Id.* The County points to the results of a study that identified different rock types in core samples than at the surface. *Id.* at 61. From the core and surface data, Clark County states that there were two episodes of volcanic activity separated by millions of years of quiescence. *Id.* at 62. The County states that the millions of years between the events makes it a "strong possibility" that an event 78,000 years ago might be the start of a new eruptive episode. *Id.* at 62. Therefore, Clark County asserts that DOE's probability of igneous activity disrupting a repository drift is underestimated by two or more orders of magnitude. *Id*. at 63.

Staff Response

The Staff oppose admission of CLK-SAFETY-008 for the reasons set forth below

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention

adequately. *See Arizona Pub. Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Further, "[a]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citing *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

The expert support for CLK-SAFETY-008, *see* CLK Petition, Attachment 3, Affidavit of Eugene I. Smith, is insufficient to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v). The affidavit does not provide further insight into the contention, but states that the Dr. Smith adopts the contention as his own opinion. *See* Smith Affidavit. Regarding Clark County's assertion in the contention that DOE has underestimated the probability of an igneous event disrupting the repository "likely by two or more orders of magnitude," (CLK Petition at 63), the County's expert has offered no explanation about how the expert determined this large change, thus the claim is unsupported. *See USEC*, CLI-06-10, 63 NRC at 472. Clark County fails to demonstrate or explain how the arguments it makes regarding the considering time periods from eleven million years ago along with core chemistry data support its assertion that DOE erred by two or more orders of magnitude in its calculation of igneous disruption probability. *See* CLK Petition at 61-63.

Similarly, there is no sufficient explanation to support a finding of a "strong possibility" that the Latrhop Wells cone event of 78,000 years ago "may herald the beginning of an new eruptive episode." *See id*. at 62. The support offered is the observation that millions of years of quiet passed between events. Such support is simply not sufficient. *See USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

The contention is incorrectly asserts that that DOE "ignores the data set obtained from core, . . . and wrongly relies instead on the chemistry of surface basalt erupted over the past 5 million years. " CLK Petition at 59. However, DOE did not ignore those sources of information. In subsection 2.3.11.2.1.1, "Igneous Framework" (SAR at 2.3.11-15 to 2.3.11-18), DOE discussed activity from as long ago as 14 million years. For example, the SAR at 2.3.11-15 states, "[t]he earliest volcanism in the Yucca Mountain region was dominated by a major episode of . . . volcanism that occurred between 15 and 11 million years ago. . . ." As

a second example, the SAR at 2.3.11-18 states, regarding drilling that, "[t]hree other basalt units encountered by drilling ranged in age from approximately 9.5 million years to 11.2 million years." These examples demonstrate that the older period and core data were not ignored; more than just surface chemistry was considered. Thus, Clark County is mistaken in its belief, and its contention cannot be admitted because there is not a genuine dispute with the application.

Clark County does not provide an analysis or reference that show how the issue of contention would make a difference with respect to a finding of "reasonable expectation" necessary to support the construction authorization under 10 C.F.R.§ 63.31(a)(2). Further, Clark County has not shown how the contention would affect the repository postclosure performance objectives of 10 C.F.R. § 63.113. For example, there is no showing that the claimed error would cause the radiological exposures to the reasonably maximally exposed individual (RMEI) to be exceeded, and thus § 63.113(b) to be violated. Thus Clark County has not shown a genuine dispute with the application on a material issue. *See* 10 C.F.R. § 2.309(f)(1)(vi).

CLK-SAFETY-008 seeks to raise a dispute with SAR subsections 2.2.2.2.3.1, 2.3.11.2.1.1, 2.3.11.2.2 and "related" sections. CLK Petition at 59 & 63. To the extent that Clark County seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Clark County does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Clark County wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Clark County believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Clark County has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

CLK-SAFETY-009 - DOE FAILS TO CONSIDER ALTERNATIVE IGNEOUS EVENT MODELS

> The DOE's assessment of the frequency of igneous events does not consider appropriate alternative conceptual models that are consistent with available data and current scientific understanding, with the result that uncertainty is underestimated and not properly characterized.

CLK Petition at 64. In this contention (which is virtually identical to NEV-Safety-156), Clark County asserts that DOE's assessment of igneous events (which assumes shallow melting produces basaltic magma) fails to consider "appropriate conceptual models that are consistent with available data and current scientific interpretation," and thus underestimates and improperly characterizes uncertainty. CLK Petition at 64.

Staff Response

This contention should be rejected because it fails to meet requirements for admission under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See USEC*, *Inc.* (American Centrifuge), CLI-06-10, 63 NRC 451, 455 (2006) (citation omitted). Clark County does not meet this standard.

Clark County, citing the SAR and other documents, claims that DOE's probability estimate for igneous activity that would disrupt the repository relies heavily on the "Probabilistic Volcanic Hazards Analysis for Yucca Mountain, Nevada, BA0000000-01717-2200-00082, Rev. 0," June 26, 1996 (LSN# DEN000861156) (PVHA) that is based on an assumption regarding the depth of basaltic magma and is not consistent with published research, papers and calculations which indicate deep melting models more accurately explain volcanism over the last 10 million years. *See* CLK Petition at 66-69. Clark County notes that DOE has not updated its 1996 Probabilistic Volcanic Hazards Analysis for Yucca

Mountain and does not consider this "alternate model" for volcanism. *See* CLK Petition at 66-71. Clark County, again, focuses on the depth of basaltic magma and does not proffer information that shows the failure to consider this "alternate model" results in an underestimation of uncertainty in DOE's assessment of the probability of future igneous events. Thus, the main concern in the contention is not supported.

The Affidavit of Eugene Smith (CLK Petition, Attachment 3) contains the statement that the affiant adopts as his "own opinion" statements made in the Petition concerning this contention. Because the affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess the basis for the expert's opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute regarding a material issue of law or fact, Clark County must show that resolution of the dispute would make a difference in the outcome of the proceeding. *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 333-34 (1999). Clark County has not raised a genuine dispute with DOE concerning the depth of basaltic melting or alternative models. The SAR statement quoted by Clark County that "'PVHA experts generally view volcanism in the Yucca Mountain region as . . . resulting from melting processes in the upper lithospheric mantle'" does not necessarily mean all of the experts who contributed to the PVHA held the same views regarding melting depths. *See* CLK Petition at 66 (quoting SAR 2.2.2.2.3.1 at 2.2-97). For example, the discussion of the interview of Dr. Michael Sheridan indicates: "volcanism involves generation of a melt from a source zone within the asthenosphere or lower

lithosphere." PVHA Report, Appendix E at MS-2 of 22. The PVHA process also included workshops that considered alternative conceptual models and the PVHA Report includes a discussion of the contributions of various conceptual models. *See* PVHA Report, Section 2.1 at 2-19 to 2-21; *id.* at Section 4.2, at 4-9 to 4-52.

In addition, although Clark County cites information it believes shows that deep melting of basaltic magma more accurately explains volcanism during the last 10 million years, *see* CLK Petition at 66-70, it does not proffer information would indicate that its concern would make a difference in the outcome in the proceeding. Clark County claims that DOE has underestimated the probability of repository disruption, but it provides no analysis to indicate the extent of the alleged underestimate or how assumptions regarding magma depth would affect such estimates. *See* CLK Petition at 64, 66-71. Clark County also fails to show (or even allege) that use of the alternate model would significantly change the estimate of the probability-weighted dose incurred by the RMEI. *See* C.F.R. §§ 63.31(a)(2), 63.303. Consequently, the contention fails to raise a genuine dispute as required by 10 C.F.R. § 2.309(f)(1)(vi).

Clark County's reference to "related" SAR subsections, *see* CLK Petition at 64, also fails to meet the § 2.309(f)(1)(vi) requirement that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section requires that information proffered must include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention failed to reference a specific portion of the application).

Because Clark County does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to raise a dispute regarding those unidentified sections. If Clark County wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Board, Staff and Applicant

should not have to guess which sections are involved. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). A purpose of the contention rule is to put other parties on notice as to a petitioner's specific grievances and claims they will be either supporting or opposing. *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Given Clark County's failure to identify additional SAR sections which it disputes, this contention, if otherwise found to be admissible, should be limited to raising a dispute only as to the specific SAR subsections identified.

In sum, the contention does not met 10 C.F.R. § 2.309(f)(1)(v) and (vi) and should be rejected.

CLK-SAFETY-010 - THE DOE IGNORES IGNEOUS EVENT DATA EVALUATED SINCE 1996 IN THE [TSPA]

> DOE's assessment of the frequency of igneous events in the LA ignores information and analyses since 1996 which would, if considered, have required a significant change in the total systems performance assessment, and, as a result, the LA is not complete and accurate in all material respects.

CLK Petition at 72. In the contention (which is virtually identical to NEV-SAFETY-157), Clark County claims DOE's assessment of the frequency of igneous events ignores information since 1996, which, if considered, would have required a "significant change" in DOE total systems performance assessment, and therefore the LA is not complete and accurate in all material respects**.** CLK Petition at 72.

Staff Response

For the reasons discussed below, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *USEC*, *Inc.* (American Centrifuge), CLI-06-10, 63 NRC 451, 455 (2006) (citation omitted). Clark County meets this standard in part if this contention is viewed strictly as a contention of omission.

Clark County lists 12 documents dated after 1996 that it claims are not considered in the license application. *See* CLK Petition at 73-74. The only document that it discusses and deems "a major omission" or "critical" is the "Probabilistic Volcanic Hazard Analysis Update (PVHA-U) for Yucca Mountain, Nevada Rev. 01" (09/02/2008) (LSN#DEN001601965). *See id.* at 74. Clark County also speculates that the failure to consider these documents results in underestimating the probability of igneous events. *Id.* But, Clark County apparently concedes the "possibility that changes in hazard assessment models and calculations [would be] modest." *See id*. at 74. Because Clark County offers nothing more than conclusory

assertions and does provide a quantitative or qualitative analysis that shows that the effect of consideration of the PVHA-U or other references, the contention is not supported.

The affidavit of Eugene Smith (CLK Petition, Attachment 3) contains the statement that he adopts as his "own opinion" statements made in the Petition regarding the contention. However, because the affidavit does not set forth a reasoned basis for Clark County's position, it is difficult to assess the basis for his opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing

Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Although Clark County claims omission of the PVHA-U is significant, Clark County, has not proffered a basis to conclude that the missing information raises a genuine dispute with the Applicant regarding estimate of the probability igneous activity. Merely listing the documents, without explanation, does not raise a genuine dispute with the applicant. The Board and parties should not be expected to sift through the reports to uncover arguments not advanced by Clark County. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999). In addition, contrary to Clark County's assertion, the SAR contains information indicating that DOE "considered" information available after 1996. *See, e.g.,* SAR Table 2.3.11-4 (at 2.3.11-96) (probability estimates published through 2000; SAR Section 2.3.11 at 2.3.11-25 (aeromagnetic data).

The only document Clark County deems a "critical omission" is the PVHA-U. *See* CLK Petition at 74. Clark County, however, concedes "the possibility that changes in hazards assessments and calculations would be modest" if the results of the PVHA-U were considered. *See id.* Thus, Clark County has not offered a basis to conclude it raises a genuine dispute with the Applicant.

In addition, Clark County does not proffer a reasoned basis that shows the significance of the alleged "omissions" with respect to calculation of the probability of igneous activity. Thus, it fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

Clark County's reference to "related" SAR subsections, *see* CLK Petition at 75, also fails to meet the § 2.309(f)(1)(vi) requirement that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section requires that information proffered must include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007)

(contention failed to reference a specific portion of the application).

Because Clark County does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to raise a dispute regarding those unidentified sections. If Clark County wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Board, Staff and Applicant should not have to guess which sections are the "related" sections. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). A purpose of the contention rule is to put other parties on notice as to a petitioner's specific grievances and claims they will either support or oppose. *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Given Clark County's failure to identify additional SAR sections which it disputes, this contention, if otherwise found to be admissible, should be limited to raising a dispute only as to the specific SAR subsections identified.

In sum, the contention is not admissible because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(iv).

CLK-SAFETY-011 - THE DOE LACKS SUFFICIENT GEOPHYSICAL DATA TO SUPPORT ITS VOLCANIC MODEL

> High-quality geophysical data is necessary to answer the fundamental question as to whether volcanoes are primarily controlled by upper crustal structure or mantle. DOE's approach to predicting the location and frequency of future eruptions, as reflected in SAR Subsection 2.2.2.2.3.1 and related subsections, relies heavily on upper crustal structures and the local stress field, but does not provide sufficient geophysical data to support this model. This is inadequate because high-quality geophysical data are necessary to confirm or rule out the proposition, supported by the currently available data, that the primary control of the location of a basaltic field near Yucca Mountain is asthenospheric mantle processes.

CLK Petition at 76. In the contention, Clark County claims that DOE's approach to predicting the frequency and location of volcanoes lacks "high-quality geophysical data" to support the model, which are critical for comparing deep versus shallow melting models by revealing the location of low–viscosity (hot zones). CLK Petition at 76.

Staff Response

For the reasons discussed below, the contention is not admissible under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *USEC*, *Inc.* (American Centrifuge), CLI-06-10, 63 NRC 451, 455 (2006) (citation omitted).

Clark County, citing the SAR and other documents, asserts that DOE's relies heavily on the "control exerted by upper crustal structures and the local stress field to predict" future igneous activity, that geophysical studies provide important information for predicting the location of future volcanism, and that the primary control of the location of a basaltic field is the process in the asthenospheric mantle and not the upper crustal structure or local stress

fields. *See* CLK Petition at 78-84.

The Affidavit of Dr. Eugene Smith (CLK Petition, Attachment 3) contains the statement that he adopts as his "own opinion" statements made in the contention. Because the affidavit does not set forth a reasoned basis for Clark County's position, it is difficult to assess the basis for his opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, Nevada must show that resolution of the dispute would make a difference in the outcome of the proceeding. *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 333-34 (1999). Clark County's claim that DOE did not consider "high-quality geophysical data" does not identify a genuine dispute of material fact with the applicant. Clark County ignores that the PVHA panel report cited in the Application (SAR at Section 2.2.2.2, pg. 2.2-90 *et seq.*) considered geophysical data. *See* "Probabilistic Volcanic Hazards Analysis for Yucca Mountain, Nevada, BA0000000-0717-2200-00082 Rev 0" (6/26/1996) (LSN# DEN000861156) (PVHA Report, Appendix B, at B-1 to B-7). Clark County proffers no information that disputes the quality of this data or that consideration of data concerning the depth of basaltic magma would provide information that would make a difference with respect to a finding that there is a reasonable expectation that radioactive materials can be disposed of without unreasonable risk to the health and safety of the public. Therefore, Clark County fails to show a genuine dispute regarding a material issue of law or fact.

Clark County's reference to "related" SAR subsections, *see* CLK Petition at 78, 84, also fails to meet the § 2.309(f)(1)(vi) requirement that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section requires that information proffered must include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (contention failed to reference a specific portion of the application). Because Clark County does not specify the other "related" sections of the SAR it wishes to dispute, the contention fails to raise a dispute regarding those unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Board, Staff and Applicant should not have to guess which sections are the "related" sections. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). A purpose of the contention rule is to put other parties on notice as to a petitioner's specific grievances and claims they will be either supporting or opposing. *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Given Nevada's failure to identify additional SAR sections which it disputes, this contention, if otherwise found to be admissible, should be limited to raising a dispute only as to the specific SAR subsections identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309(f)(1)(v) and (vi) and should be rejected.

CLK-SAFETY-012 - THE DOE'S PRIOR INSTITUTIONAL FAILURES RENDER IT UNFIT TO BE A LICENSEE

> The DOE lacks the requisite institutional integrity to be granted a license to construct and operate a repository in a safe and secure manner for high level radioactive waste and spent nuclear fuel at Yucca Mountain.

CLK Petition at 85. CLK-SAFETY-012 alleges that DOE's past actions reveal a history of failures to meet procedural, legal and contractual obligations. *See id.* Clark County asserts, that taken together, these actions call into question DOE's qualifications as an NRC licensee. *See id.*

Staff Response

For the reasons discussed below, this contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that "the issue raised is within the scope of the proceeding." 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co*. (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). A licensing board "does not have the power to explore matters beyond those which are embraced by the notice of hearing for the particular proceeding." *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-90 n.6 (1979). Therefore, contentions outside of the prescribed scope of the proceeding must be inadmissible. CLK-SAFETY-012 questions whether DOE has the requisite integrity to be the licensee to construct the proposed Yucca Mountain repository. *See id.* The contention raises an issue of whether, if a construction authorization is granted, DOE should be the entity to which it is granted. This contention falls outside the scope of this proceeding and thus must be dismissed.

This proceeding was initiated when the Commission issued "Notice of Hearing and Opportunity to Petition for Leave to Intervene." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __, (Oct. 17, 2008) (slip op.). The Notice stated that the scope of the hearing was to "consider the application for construction authorization filed by DOE pursuant to Section 114 of the Nuclear Waste Policy Act of 1982 (NWPA), 42 U.S.C. 10134, and pursuant to 10 C.F.R. Parts 2 and 63." *Id.* at __ (slip op. at 1).

Section 114(b) of the NWPA clearly and specifically designates the Department of Energy as the sole statutorily mandated entity that has been selected to construct and operate the proposed Yucca Mountain repository ("[T]he Secretary [of Energy] shall submit to the [Nuclear Regulatory] Commission an application for a construction authorization for a repository. . ."). There is no statutory or regulatory provision that would permit any entity other than DOE to construct and operate the proposed Yucca Mountain repository. Therefore, by virtue of this statutory mandate, DOE is the appropriate applicant.

Clark County cites a number of prior Commission cases to support admission of its contention. These include: *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002); *Duke Power Co*. (Catawba Nuclear Station, Units 1 & 2), LBP-82-116, 16 NRC 1937 (1982); and *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-9, 21 NRC 1118 (1985).

None of these cases, however, involved repository licensing. *Millstone* was concerned with the transfer of items from technical specifications to licensee-controlled documents as part of an NRC-initiated program to improve technical specifications at all nuclear power reactors. CLI-01-24, 54 NRC 349. In *Catawba,* a Licensing Board ruled on various pending motions related to discovery. LBP-82-116, 16 NRC 1937. In *Three Mile Island.* The Commission lifted the effectiveness of its 1979 enforcement order directing that a reactor remain shut down. CLI-85-9, 21 NRC 1118, at 1157. Consequently, the Commission

precedent cited by Clark County is not directly applicable to a consideration of DOE's license application pursuant to the NWPA. Finally, the NRC inspection and oversight process will provide ongoing confidence into the future that DOE, as the licensee will comply with applicable regulations. *See*, Final Rule, Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada, 66 Fed. Reg. 55,732, 55,744 (Nov. 2, 2001) ("Should the Commission authorize construction of a geologic repository at Yucca Mountain, the NRC staff will conduct an ongoing, performance-based inspection program to evaluate DOE's compliance with the performance objectives and any conditions established in the construction authorization. . .").

Therefore, CLK-SAFETY-012 falls outside the scope of this proceeding, and thus fails to meet 10 C.F.R. § 2.309(f)(1)(iii). Accordingly, this contention should be rejected.

INY-SAFETY-1 – FAILURE TO ADEQUATELY DESCRIBE AND ANALYZE THE FLOW PATH IN THE LOWER CARBONATE AQUIFER THROUGH WHICH CONTAMINANTS MAY MIGRATE AND ADVERSELY IMPACT AREAS WITHIN THE COUNTY OF INYO

> The applicant (or "DOE") failed to include in the Yucca Mountain Repository License Application ("LA") and Safety Analysis Report ("SAR") a description and analysis of the flow path in the lower carbonate aquifer through which contaminants can migrate from the proposed repository site to the biosphere including to areas within the County of Inyo.

INY Petition at 3. INY-SAFETY-1 asserts that DOE's SAR does not adequately address the possibility of radionuclide contamination of the lower carbonate aquifer, which is below the repository site. *Id.* INY-SAFETY-1 contends the SAR does not address the possibility that continued groundwater pumping in the vicinity of the proposed repository would reverse the upward hydraulic gradient that, under current conditions, prevents groundwater from moving into the lower carbonate aquifer, thus potentially causing contamination of that aquifer. *Id.* at 5-7. Inyo does not dispute that under current conditions, the upward hydraulic gradient would prevent radionuclide contamination from the proposed repository from reaching the lower carbonate aquifer. *Id.* However, Inyo alleges that the SAR does not account for the possibility that continued groundwater pumping could reverse that upward gradient and cause contamination of the lower carbonate aquifer at some point in the future. *Id.* Inyo asserts that it has conducted recent research that suggests that if radionuclides were to reach the lower carbonate aquifer, contamination could migrate to the springs in Death Valley National Park and other locations. *Id* at 7-8. Inyo asserts that DOE's performance assessments do not consider this scenario, in violation of 10 C.F.R. § 63.342. *Id.* at 12-13.

Staff Response

The Staff opposes admission of INY-SAFETY-1 because the contention: (a) is not supported by a concise statement of facts or expert opinion; (b) does not demonstrate that a genuine dispute exists with respect to a material issue of fact or law; and (c) constitutes an

impermissible attack on the Commission's regulations. *See* 10 C.F.R. §§ 2.309(f)(1)(iv),(v), and (vi); 2.335(a).

10 C.F.R. § 2.335(a): Challenge to a Commission Rule or Regulation

Collateral attacks, explicit or implicit, on the Commission's regulations are not permitted unless a waiver is explicitly granted. 10 C.F.R. § 2.335(a). "Petitioners may not seek an adjudicatory hearing 'to attack generic NRC requirements or regulations, or to express generalized grievances about NRC policies'." *Dominion Nuclear Connecticut, Inc.* (Millstone Power Station, Unit 2), CLI-03-14, 58 NRC 207, 218 (2003) (internal citation omitted.). Here, Inyo is challenging the requirements of 10 C.F.R. § 63.305 without requesting the specific permission necessary to do so. *See* 10 C.F.R. § 2.335. Thus, as discussed below, this contention is an impermissible attack on the Commission's regulations.

10 C.F.R. § 63.305 explicitly states that:

> DOE should not project changes in society, the biosphere (other than climate), human biology, or increases or decreases of human knowledge or technology. In all analyses done to demonstrate compliance with this part, DOE must assume that all of those factors remain constant as they are at the time of submission of the license application.

10 C.F.R. § 63.305(b). The Statements of Consideration for 10 C.F.R. Part 63 make clear that "[c]haracteristics of the reference biosphere and the reasonably maximally exposed individual are to be based on current human behavior and biospheric conditions in the region, as described in § 63.305 and § 63.312." Final Rule, Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,805 (Nov. 2, 2001). INY-SAFETY-1 contends that "[w]ithout question, increased local regional groundwater pumping in the future is reasonably foreseeable, and…has the potential to impact the upward gradient in the lower carbonate aquifer," causing potential migration of radionuclides from the repository to Death Valley springs. INY Petition at 10. INY-SAFETY-1 is premised on a change in the biosphere unrelated to climate

and therefore seeks to impose upon the applicant a requirement contrary to that set forth in 10 C.F.R. § 63.305. INY-SAFETY-1 therefore represents an impermissible challenge to 10 C.F.R. § 63.305 and should be rejected. In addition, to the extent that INY-SAFETY-1 alleges that "increased local regional groundwater pumping in the future" could reverse the upward gradient, it is premised on a change in human activity and constitutes an additional, impermissible attack on section 63.305.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. If a contention references an expert opinion, that expert must still provide the basis or explanation for that opinion in order to comply with Section 2.309(f)(1)(v). *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The Staff does not dispute that Inyo County provides in INY-SAFETY-1 facts and expert opinion with respect to the speed at which contaminants could migrate, via the lower carbonate aquifer, from the repository site to Death Valley Springs. *See* INY Petition at 7-15. However, as discussed below, INY-SAFETY-1 is not supported by facts or expert opinion with respect to whether radionuclide contamination from the proposed repository could reach the lower carbonate aquifer, a premise upon which INY-SAFETY-1 depends.

INY-SAFETY-1 contends that because the scenario it sets forth has greater than a 1 in 10,000 chance of occurring within 10,000 years, it should have been considered in the LA. INY Petition at 11-12. Inyo does not dispute that, under current conditions, the upward hydraulic gradient prevents radionuclide contamination from the proposed repository from reaching the lower carbonate aquifer. *See id*. at 7. However, Inyo County asserts that "a continuation of current levels of local groundwater pumping and/or additional regional groundwater pumping that is foreseeable in the future could reduce or eliminate the upward gradient," thereby allowing radionuclide contamination from the proposed repository to reach the lower carbonate aquifer at some point in the future. *Id.* INY-SAFETY-1 does not provide

any support for its assertion that this scenario meets the probability threshold for consideration in the performance assessment at 10 C.F.R. § 63.342, or that its impact would be sufficiently significant to require consideration even if it met the probability threshold. Inyo asserts that "the County's recent report" demonstrates that "such groundwater pumping has the potential to impact the upward gradient in the lower carbonate aquifer." *Id.* at 10. However, although the document to which Inyo refers, Bredehoeft and King's "*The Potential For Contaminants Transport Through the Carbonate Aquifer Beneath Yucca Mountain Nevada*," Hydrodynamics Group LLC, 2008, unpublished (LSN CAL 00000029), does contain a statement to this effect on page 17, the report explicitly declines to take a position on the likelihood of contaminants entering the aquifer:

> We are making no assertions about the likelihood of contaminants migrating into the Carbonate Aquifer. We address one question only – should contaminants get to the Carbonate Aquifer, how long will they take to reach the biosphere.

Bredehoeft and King, "*The Potential For Contaminants Transport Through the Carbonate Aquifer Beneath Yucca Mountain Nevada*," Hydrodynamics Group LLC, 2008, unpublished (LSN CAL 00000029) at 3 (emphasis in original). In fact, neither this document nor any other facts or statements in this contention support Inyo's assertion that a greater than 1 in 10,000 chance exists that within 10,000 years, groundwater pumping at current or expect future levels will reverse the upward hydraulic gradient currently separating the lower carbonate aquifer from radionuclide contamination from the proposed repository and that, therefore, such a scenario should have been considered in the SAR. *See* 10 C.F.R. § 63.342. In fact, the attachment to the affidavit of Mr. Gaffney, ostensibly in support of INY-SAFETY-1, though it is not referenced by, and does not reference, INY-SAFETY-1, notes that Inyo's scientific data "supports the conclusion" that the upward gradient will prevent migration of radionuclides from the repository to the lower carbonate aquifer. *See* INY Petition,

Attachment A, Affidavit of Matthew Gaffney, at 2. INY-SAFETY-1 therefore is based only on Inyo's assumption and speculation that the upward gradient will be eliminated at some point in the future and contaminants from the proposed repository will enter the lower carbonate aquifer. A contention based on such "bare assertions and speculation" is not admissible. *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000). Nor does Inyo provide any support for the stated opinion that reversal of the gradient would inevitably allow contaminants from the proposed repository to reach the lower carbonate aquifer, nor for the claim that radiological exposures would be significantly altered, even if this scenario were to occur. 10 C.F.R. § 2.309(f)(1)(v) requires that an expert opinion in support of a contention must explain the basis for the opinion, and Inyo County has not done so. *See USEC*, CLI-06-10, 63 NRC at 472. INY-SAFETY-1 therefore is not adequately supported by facts or expert opinion and should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact," identify either specific portions of, or alleged omissions from, the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than " ' bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.' " *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)).

INY-SAFETY-1 contends that the SAR is inadequate because it does not account for the possibility that radionuclides from the proposed repository could reach Death Valley Springs via the lower carbonate aquifer. INY Petition at 3. However, as DOE notes, the conceptual groundwater flow model used in creating the performance assessment is already consistent with the scenario described by Inyo County in that it already considers radionuclide movement through groundwater to Death Valley springs. *See, e.g.,* Repository SEIS, Vol. 3 p. CR-324, Response to Comment – RRR000091/0002; SAR § 2.4.4.

INY-SAFETY-1 does not provide any rationale, argument, basis, or support that the LA's performance assessment would be altered in any way depending on whether water reached the accessible environment via the lower carbonate aquifer, as opposed to by other potential channels. It merely asserts that the LA is deficient in not considering such a scenario. In addition, Inyo County, as stated above, has not demonstrated that the scenario posited in INY-SAFETY-1 meets the probability threshold for consideration in the TSPA or that the impacts of such a scenario would result in a significant change to the TSPA even if they were considered. Rather, INY-SAFETY-1 speculates, without basis, that such a scenario could occur and, that if it were to occur, that it could be significant to the repository's performance. This is insufficient to raise a genuine dispute with respect to any specific portion of the license application.

For all the foregoing reasons, INY-SAFETY-1 is not admissible and should be rejected.

INY-SAFETY-2 - FAILURE TO ADEQUATELY DESCRIBE AND ANALYZE THE IMPACT OF THE REPOSITORY IN COMBINATION WITH A CONTINUATION OF EXISTING LEVELS OF GROUNDWATER PUMPING ON THE POTENTIAL MIGRATION OF CONTAMINANTS FROM THE PROPOSED REPOSITORY

> The applicant (or "DOE") failed to include in the Yucca Mountain Repository License Application ("LA") and Safety Analysis Report ("SAR") a description and analysis of the impact of a continuation of existing levels of groundwater pumping in the vicinity of the proposed repository on the flow path in the saturated zone through which contaminants can migrate from the proposed repository site to the biosphere including to areas within the County of Inyo.

INY Petition at 26. INY-SAFETY-2 asserts that DOE's SAR does not adequately address the possible impacts that a continuation of existing levels of groundwater pumping in the vicinity of the proposed repository could have on the flow path of radionuclides in the saturated zone, through which contaminants could migrate offsite to various locations in the biosphere. *Id.* INY-SAFETY-2 is similar to INY-SAFETY-1 in that both contentions assert that continued groundwater pumping could alter the existing upward hydraulic gradient between the lower regional carbonate aquifer and the overlying volcanic aquifers. *Id.* at 5-7, 29. INY-SAFETY-2 asserts that "should such groundwater pumping eliminate the upward gradient, contaminants from the repository could potentially enter the saturated zone and migrate to the biosphere at Devil's Hole, Ash Meadows, Amargosa Valley, and Death Valley." *Id*. at 32. Inyo asserts that it has conducted recent research that suggests that if radionuclides were to reach the lower carbonate aquifer, contamination would quickly migrate to the springs in Death Valley National Park. *Id* at 30-32. Inyo also asserts that DOE's performance assessments do not consider this scenario and that, in the absence of such consideration, the NRC cannot determine that there is a reasonable assurance that the repository will be operated "without unreasonable risk to the health and safety of the public," in violation of 10 C.F.R. § 63.31. *Id.* at 32.

Staff Response

The Staff opposes admission of INY-SAFETY-2 because the contention: (a) is not supported by a concise statement of facts or expert opinion; (b) does not demonstrate that a genuine dispute exists with respect to a material issue of fact or law; and (d) constitutes an impermissible attack on the Commission's regulations. *See* 10 C.F.R. §§ 2.309(f)(1)(iv),(v), and (vi); 2.335(a).

10 C.F.R. § 2.335(a): Challenge to a Commission Rule or Regulation

Collateral attacks, explicit or implicit, on the Commission's regulations are not permitted unless a waiver is explicitly granted. 10 C.F.R. § 2.335(a). Petitioners may not seek an adjudicatory hearing to attack generic NRC requirements or regulations, or to express generalized grievances about NRC policies. *Dominion Nuclear Connecticut, Inc.* (Millstone Power Station, Unit 2), CLI-03-14, 58 NRC 207, 218 (2003) (internal citations omitted). Here, Inyo is challenging the requirements of 10 C.F.R. § 63.305 without requesting the specific permission necessary to do so. *See* 10 C.F.R. § 2.335. Thus, as discussed below, this contention is an impermissible attack on the Commission's regulations.

10 C.F.R. § 63.305 explicitly states that:

> DOE should not project changes in society, the biosphere (other than climate), human biology, or increases or decreases of human knowledge or technology. In all analyses done to demonstrate compliance with this part, DOE must assume that all of those factors remain constant as they are at the time of submission of the license application.

10 C.F.R. § 63.305(b). The Statements of Consideration for 10 C.F.R. Part 63 make clear that "[c]haracteristics of the reference biosphere and the reasonably maximally exposed individual are to be based on current human behavior and biospheric conditions in the region, as described in § 63.305 and § 63.312." Final Rule, Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,805 (Nov. 2, 2001). INY-SAFETY-2 contends that DOE has failed to

account for "the possibility that a continuation of current levels of local groundwater pumping and/or additional regional groundwater pumping that is foreseeable in the future could reduce or eliminate the upward gradient," causing potential migration of radionuclides from the repository to Death Valley springs. INY Petition at 32. INY-SAFETY-2 is therefore premised on a change in the biosphere unrelated to climate and therefore seeks to impose upon the applicant a requirement contrary to that set forth in 10 C.F.R. § 63.305. INY-SAFETY-2 thus represents an impermissible challenge to 10 C.F.R. § 63.305 and should be rejected. In addition, to the extent that INY-SAFETY-2 alleges that "additional regional groundwater pumping that is foreseeable in the future," *see* INY Petition at 32, could reverse the upward gradient, it is premised on a change in human activity and constitutes an additional, impermissible attack on section 63.305.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. If a contention references an expert opinion, that expert must still provide the basis or explanation for that opinion in order to comply with Section 2.309(f)(1)(v). *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The Staff does not dispute that Inyo County provides in INY-SAFETY-2 facts and expert opinion with respect to the speed at which contaminants could migrate, via the lower carbonate aquifer, from the repository site to Death Valley Springs. *See* INY Petition at 28-32. However, as discussed below, INY-SAFETY-2 is not supported by facts or expert opinion with respect to whether radionuclide contamination from the proposed repository could reach the saturated zone, a premise upon which INY-SAFETY-2 depends.

INY-SAFETY-2 argues that future groundwater pumping in the vicinity of the proposed repository could impact the upward gradient that, under current conditions, would prevent radionuclide contamination from the proposed repository from reaching the saturated zone. INY Petition at 29-30. Inyo County does not dispute that, under current conditions, the

upward hydraulic gradient prevents radionuclide contamination from the proposed repository from reaching the lower carbonate aquifer. *See id*. at 29-30. However, Inyo asserts that "a continuation of current levels of local groundwater pumping and/or additional regional groundwater pumping that is foreseeable in the future could reduce or eliminate the upward gradient," thereby allowing radionuclide contamination from the proposed repository to reach the saturated zone at some point in the future, and that the SAR is deficient for failing to consider this possibility. *Id.* at 32. However, while INY-SAFETY-2 argues that this sequence of events could occur, it provides no basis whatsoever upon which one could conclude that it will occur or is substantially likely to occur, such that it would require consideration in the performance assessment, see 10 C.F.R. §§ 63.114(d), 63.342. Nor does Inyo provide a basis that its impact, should this sequence of events occur, would be sufficiently significant, such that it would appreciably alter the expected radiological exposure to the RMEI or the accessible environment.

Inyo asserts that "the County's recent report" demonstrates that "such groundwater pumping has the potential to impact the upward gradient in the lower carbonate aquifer." *Id.* at 31. However, although the document to which Inyo County refers, Bredehoeft and King's "*The Potential For Contaminants Transport Through the Carbonate Aquifer Beneath Yucca Mountain Nevada*," Hydrodynamics Group LLC, 2008, unpublished (LSN CAL 00000029), does contain a statement to this effect on page 17, the report explicitly declines to take a position on the likelihood of contaminants entering the aquifer:

> We are making no assertions about the likelihood of contaminants migrating into the Carbonate Aquifer. We address one question only – should contaminants get to the Carbonate Aquifer, how long will they take to reach the biosphere.

Bredehoeft and King, "*The Potential For Contaminants Transport Through the Carbonate Aquifer Beneath Yucca Mountain Nevada*," Hydrodynamics Group LLC, 2008, unpublished

(LSN CAL 00000029) at 3 (emphasis in original). In fact, neither this document nor any other facts or statements in Inyo's County's contention support its assertion that reversal of the upward gradient is substantially likely enough to require consideration in the performance assessment or, if it were to occur, that its result would be to significantly change the radiological exposure to the RMEI or the accessible environment.

In fact, the attachment to the affidavit of Mr. Gaffney, ostensibly in support of INY-SAFETY-2, though it is not referenced by, and does not reference, INY-SAFETY-2, notes that Inyo County's scientific data "supports the conclusion" that the upward gradient will prevent migration of radionuclides from the repository to the lower carbonate aquifer. *See* INY Petition, Attachment A, Affidavit of Matthew Gaffney, at 2. INY-SAFETY-2 therefore is based only on Inyo's assumption and speculation that the upward gradient will be eliminated at some point in the future and contaminants from the proposed repository will enter the saturated zone. Nor has Inyo offered any documentary support for the proposition that contaminants from the proposed repository would reach the lower carbonate aquifer or saturated zone. Finally, Inyo has not offered any support for the proposition that, even were the upward gradient reversed and contaminants from the proposed repository did reach the lower carbonate aquifer, radiological exposures to the RMEI or the accessible environment would be significantly altered. A contention based on such "bare assertions and speculation" is not admissible. *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000). Although the text of paragraph 5 has been purported to have been adopted by at least one expert, Inyo does not provide any support for the stated opinion that reversal of the gradient would allow contaminants from the proposed repository to reach the lower carbonate aquifer, nor for the claim that radiological exposures to the RMEI or the accessible environment would be significantly altered, even if this scenario were to occur. 10 C.F.R. § 2.309(f)(1)(v) requires that an expert opinion in support of a contention must explain the basis for that opinion, and Inyo County has not done so. *See USEC*, CLI-06-10, 63 NRC

at 472. INY-SAFETY-2 therefore is not adequately supported by facts or expert opinion and should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact," identify either specific portions of, or alleged omissions from, the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than " ' bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.' " *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)).

INY-SAFETY-2 contends that the SAR is inadequate because it does not account for the possibility that radionuclides from the proposed repository could reach Death Valley Springs and other locations via the saturated zone. INY Petition at 32. However, the conceptual flow model used in formulating DOE's performance assessment is already consistent with the scenario described by Inyo. *See, e.g.,* Repository SEIS, Vol. 3 p. CR-324, Response to Comment – RRR000091/0002; *see also* SAR § 2.4.4.

INY-SAFETY-2 does not provide any rationale or support for its assertion that the LA's performance assessment would be altered in any way depending on whether water reached the accessible environment via the saturated zone, as opposed to by other potential channels. It merely asserts that the LA is deficient in not considering such a scenario. In addition, as stated above in the Staff's response regarding 10 C.F.R. § 2.309(f)(1)(v), INY-SAFETY-2 does not set forth any basis upon which one could conclude that the likelihood of

the sequence of events hypothesized by Inyo County is such that it would require consideration in the performance assessment. Nor does Inyo County demonstrate that consideration of the effects alleged in INY-SAFETY-2 would result in a significant change in radiological exposure to the RMEI or to the accessible environment. Therefore, INY-SAFETY-2 does not raise a genuine dispute of material fact or law with respect to any portion of the license application and must be rejected.

For all the foregoing reasons, INY-SAFETY-2 is not admissible.

INY-SAFETY-3 - FAILURE TO ADEQUATELY DESCRIBE AND ANALYZE THE VOLCANIC FIELD IN THE GREENWATER RANGE IN AND ADJACENT TO DEATH VALLEY NATIONAL PARK

> The applicant (or "DOE") failed to include in the Yucca Mountain Repository License Application ("LA") and Safety Analysis Report ("SAR") and description and analysis of the probability of igneous activity disrupting the site of the proposed repository. The applicant reports in the SAR in sections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, that the probability of igneous activity disrupting a repository drift is 1.7 x 10-8 events/year. The Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain , Nye County Nevada, June 2008, ("Final SEIS")[35] reports in section 3.1.3.1.3 (page 3-21) that the average probability of such activity is 1 chance in 6,300 that a volcanic dike could disrupt the repository during the first 10,000 years. These estimates underestimate the probability of igneous activity, likely by two or more orders of magnitude, because the applicant does not include the Death Valley volcanic field in the Greenwater Range as part of the area to be considered for hazard calculations.

INY Petition at 64. In this contention, Inyo County asserts that DOE has improperly characterized the size and shape of the volcanic field around Yucca Mountain and that the field should be expanded to include volcanoes in the Greenwater Range near Death Valley. INY Petition at 64. Inyo County asserts that the Greenwater Range is within the geographic area for which DOE should have considered igneous activity and that the Greenwater range is geologically similar to Yucca Mountain. *Id.* at 67-68. Inyo County argues that had DOE considered the Greenwater Range, the probability of igneous activity would have to be revised "likely by two or more orders of magnitude." *Id.* at 70.

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[35] Inyo County's issues related to NEPA compliance are addressed in the Staff's response to INY-NEPA-6.

Staff Response

The NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

The Commission's regulations at 10 C.F.R. § 2.309(f)(1)(iv) require that an issue must be material to the findings the Commission must make. "Any issues of law or fact raised in a contention must be material to the grant or denial of the license application in question, i.e., they must make a difference in the outcome of the licensing proceeding so as to entitle the petitioner to cognizable relief…This requirement of materiality embodies the notion that an alleged error or deficiency regarding a proposed licensing action must have some significance relative to the agency's general responsibility and authority to protect the public health and safety and the environment." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179-80 (1998).

The contention generally alleges non-compliance with various regulations in 10 C.F.R. Part 63, including the requirement in 10 C.F.R. § 63.31(a)(2) which "states that the NRC may authorize issuance of a construction authorization for Yucca Mountain if it determines that there is reasonable assurance or expectation the materials described in the application can be disposed of without unreasonable risk to the health and safety of the public." INY Petition at 65. Inyo asserts that an allegation of non-compliance with 10 C.F.R. Part 63 makes the contention material. *Id.* Inyo County, however, must demonstrate that the *issue raised* is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corporation* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 333-34 (1999) (quoting Rules of Practice for Domestic Licensing Proceedings - Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). *See also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d

1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993) (information material to a decision whether to grant a radioactive byproduct materials license). In this proceeding, the finding the Staff must make is of whether "there is reasonable assurance that ...radioactive materials ...can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and ...there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, whether 63.31(a)(3)(ii) has been met. Here, Inyo County fails to provide any analysis or reference that supports its proposition that the probability weighted dose estimate was impacted by the alleged omission of Greenwater Range from DOE's analysis such that it would make a difference with regard to a finding that 63.31(a)(3)(ii) has been met. Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(iv) and Inyo County has not shown how the alleged omission is material to any required NRC findings, thus the contention cannot be admitted.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Furthermore, assertions, without further explanation, even from an expert, are insufficient to meet the requirement of 10 C.F.R. § 2.309(f)(1)(v). *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Here, Inyo County fails to provide support for its assertion

that DOE has underestimated the probability of igneous activity "likely by two or more orders of magnitude." INY Petition 70.

As a preliminary matter, it is not clear whether this contention is supported by an affidavit.[36] However, even if the contention is associated with an affidavit, as discussed below, it is inadmissible. Inyo County references research performed by its consultant (Dr. Smith) on volcanism. *See* INY Petition at 67. However, the research cited by Inyo County simply notes that Death Valley basalt is closely associated with Yucca Mountain Basalt. INY Petition at 67-68. Based on this research, Inyo County makes the unsupported statement that therefore the "hazard assessment for Yucca Mountain should consider the Greenwater volcanoes near Death Valley." INY Petition at 68-69. However, the relevancy of the Greenwater volcanoes was considered in DOE's 1996 PVHA. As documented in the PVHA report what Inyo refers to as "Greenwater volcanics" were, in fact, given consideration as part of the Amargosa Valley Isotopic Province (AVIP). *See* CRWMS M&O (Civilian Radioactive Waste Management System Management and Operating Contractor) 1996. Probabilistic Volcanic Hazard Analysis for Yucca Mountain, Nevada. BA0000000-01717-2200-00082 REV 0 at Fig. 3-23 (LSN# DEN000861156), Fig. 3-23, page 3-75. Even if Inyo County's allegation that DOE failed to consider the Greenwater Range were true, Inyo County fails to explain how consideration of the Greenwater volcanoes would cause DOE to underestimate the probability for ingenious activity at Yucca Mountain or what impact this underestimation would have on DOE's SAR. Nor is there is any support to suggest that even if these

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[36] INY-SAFETY-3 appears to be associated with an affidavit from Eugene I. Smith. Dr. Smith's affidavit states that "Contentions 8 and 9 comprised of several paragraphs are contained in the petition. I hereby adopt as my own opinions the statements contained within Paragraph 5 of Contentions 7 and 8 that are based upon research conducted by me and scientific colleagues. Those two contentions are listed as INY-SAFETY-4 and INY-NEPA-4." Smith Affidavit at 2nd ¶ 4. Consequently it is not clear from the affidavit which contentions Dr. Smith supports because three different sets of numbers are used to refer to the contentions Dr. Smith supposedly supports.

volcanoes were counted into a probability calculation, that this would increase probability of a future eruption "likely by two or more orders of magnitude." None of Inyo County's assertions, even if supported by an expert, are sufficient to meet the requirement of 10 C.F.R. § 2.309(f)(1)(v). INY-SAFETY-3 is, therefore, inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). Here, Inyo County references specific portions of DOE's SAR documents that it claims to dispute, specifically SAR subsections 2.2.2.2, 2.2.2.2.3.1, 2.3.11.2.1.1, and 2.3.11.2.2.5. See INY Petition at 70. However, as discussed upon, Inyo County only provides conclusory allegations that DOE has underestimated the probability of igneous activity at Yucca Mountain. See Id. Accordingly, INY-SAFETY-3 fails to meet provide sufficient information to show a genuine dispute with the applicant. For the foregoing reasons, the Staff opposes admission of INY-SAFETY-3.

INY-(JOINT) SAFETY-4: FAILURE TO INCLUDE THE REQUIREMENTS OF THE NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS), DATED MARCH 1, 2004, AND RELATED DOCUMENTATION IN SECTION 5.7 EMERGENCY PLANNING OF THE YUCCA MOUNTAIN REPOSITORY SAFETY ANALYSIS REPORT (SAR).

> The applicant failed to include key interoperability and standardized procedure and terminology requirements of the National Incident Management System (NIMS), in the Emergency Planning required as part of the Safety Analysis Report [Yucca Mountain Repository License Application, General Information and Safety Analysis Report. DOE/RW-0573 REV 0. 2008 (SAR Section 5.7; SAR pp 5.7-1 to 5.7-55). LSN DEN001592183] to sufficiently ensure the ability of Nye County and other offsite agencies to properly plan and respond to onsite emergency actions. *See* requirements at 10 CFR 63.161 and 10 CFR 72.32(b).

INY Petition at 86. INY-(JOINT) SAFETY-4 asserts that SAR Section 5.7 fails to include key interoperability and standardized procedure and terminology requirements of the National Incident Management System (NIMS), as required by 10 CFR §§ 63.161 and 72.32(b). *Id.* As a result of this alleged failure, Inyo County argues that offsite agencies lack needed information to properly plan and respond to onsite emergency actions. *Id.*

Staff Response

The Staff opposes admission of INY-(JOINT) SAFETY-5 because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1) to demonstrate that the issue raised is the scope of the proceeding and to raise a genuine dispute regarding the application.

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that "the issue raised is within the scope of the proceeding." 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). This proceeding was initiated when the Commission issued "Notice of Hearing

and Opportunity to Petition for Leave to Intervene." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __, (Oct. 17, 2008) (slip op.). The Notice stated that the scope of the hearing was to "consider the application for construction authorization filed by DOE pursuant to Section 114 of the Nuclear Waste Policy Act of 1982 (NWPA), 42 USC 10134, and pursuant to 10 CFR Parts 2 and 63." *Id*. at __ (slip op. at 1).

10 C.F.R. § 63.21(c)(21) requires DOE to include in the SAR supporting its application for a construction authorization a description of an emergency plan as required by 10 C.F.R. § 63.161. Section 63.161 requires DOE to develop an emergency plan based on the criteria of 10 C.F.R. § 72.32(b). INY-(JOINT) SAFETY-4 acknowledges that "[t]he SAR addresses NRC directives and DOE requirements," including the requirement to submit a description of an emergency plan based on the criteria of 10 C.F.R. § 72.32(b), as required by 10 C.F.R. § 63.21(c)(21). *See* INY Petition at 86. However, Inyo County argues that, in addition to describing an emergency plan that meets the NRC criteria for an emergency plan, DOE's should also describe how the emergency plan will meet the requirements of NIMS. However, the scope of the instant proceeding is limited to the requirements of 10 C.F.R. Part 63. *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 1). Disputes over whether DOE has met other requirements outside of Part 63 are outside the scope of this proceeding. Therefore, INY-(JOINT) SAFETY-4 does not comply with 10 C.F.R. § 2.309(f)(1)(iii) and, therefore, is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner argues was improperly omitted must be dismissed. *See Sacramento Municipal Utility District*

(Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

Here, Inyo County acknowledges that DOE has complied with NRC regulations related to the emergency plan description. INY Petition at 89. The county asserts that DOE must also describe how its emergency plan will meet the NIMS criteria. However, as discussed above, the NIMS criteria are outside the scope of the instant proceeding. Inyo County identifies no other specific error or omission in the SAR, and, therefore, has not shown a genuine dispute with regard to a material issue of law or fact, as required by 10 C.F.R. § 2.309(f)(1)(vi). For this reason, INY-(JOINT) SAFETY-4 is inadmissible.

For the reasons discussed above, INY-(JOINT) SAFETY-4 should be rejected.

INY-(JOINT) SAFETY-5 (NYE-(JOINT) SAFETY-6) – THE LA LACKS ANY JUSTIFICATION OR BASIS FOR EXCLUDING POTENTIAL AIRCRAFT CRASHES AS A CATEGORY 2 EVENT SEQUENCE

> Contrary to the requirements of 10 CFR 63 to provide the technical basis for the inclusion or exclusion of specific human-induced hazards in the repository preclosure safety analysis, the Department of Energy (DOE) has merely assumed the U.S. Air Force (USAF) will restrict their activities in the repository vicinity. No basis or justification for that assumption is provided by DOE in its repository License Application (LA) or supporting documents.

INY Petition at 97. INY-(JOINT) SAFETY-6 was jointly sponsored by Nye County (the lead), the Four Nevada Counties, and Inyo County. *Id.* at 102. In this contention, petitioners assert that DOE failed to provide the technical basis or justification for excluding aircraft hazard to surface facilities as an initiating event. *Id.* at 97. The petitioners state, citing SAR Section 1.6.3.4.1 at 1.6-22, that " '[t]he accident analysis conducted assumed that such flight restriction would occur.' " *Id*. The petitioners assert that "[n]o further basis or justification of this critical assumption is discussed." *Id*.

Staff Response

The Staff opposes the admission of INY-(JOINT) SAFETY-6 in that it does not provide sufficient facts or expert opinions to support the petitioners' position on the issue, and it does not demonstrate that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

In order for a contention to be admissible under the standards set forth in 10 C.F.R. § 2.309(f)(1)(v), the contention must provide a concise statement of the facts or opinions supporting the contention together with reference to the specific sources the petitioner intends to rely upon. A contention will be inadmissible if the petitioner has offered no tangible information, no experts, no substantive affidavits, but instead only bare assertions

and speculation. *USEC, Inc*. (American Centrifuge Plant), LBP-05-28, 62 NRC 585, 597 (2005), citing *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

In paragraph 5.b. of the contention, the petitioners assert that "[w]ithout the flight restrictions assumed by DOE, its calculation of aircraft crash event sequence probability would likely have significantly different results." INY Petition at 101. The petitioners base this assertion on an assumption used in the SAR and for a calculation in a supporting document. *Id*. From this, the petitioners "*presume*[ ] that without the unjustified assumption that an aircraft crash into repository facilities would be much more probable and categorized as a category 2 event sequence per 10 CFR 63.2." *Id*. Petitioners do not cite any expert opinion or facts in support of these conclusions. Rather, they are bare assertions and speculation and, therefore, do not meet the standard in § 2.309(f)(1)(v) that requires contentions to have supporting facts or expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioners state that DOE "has merely assumed the U.S. Air Force (USAF) will restrict their activities in the repository vicinity. No basis or justification for that assumption is provided by DOE in its repository License Application (LA) or supporting documents." INY Petition at 97. The petitioners cite SAR Sections "1.6.3.4.1, pp. 1.6-21, 6-22, and 6-23, Section 5.7; SAR pp 5.7-1 to 5.7-55" as the "relevant LA sections." *Id.* at 102. However, the petitioners do not address SAR Section 1.9.3, Table 1.9-10, or SAR Section 5.8.3. In SAR Section 1.9.3, DOE states that "[p]rocedural safety controls are activities performed by both repository and nonrepository personnel whose actions affect repository activities to ensure that operations are within the analyzed conditions of the PCSA [preclosure safety analysis] and TSPA. SAR Section 1.93. at 1.9-19. Table 1.9-10 identifies the preclosure procedural safety controls. *Id.* Procedural Safety Controls 15 through 18 relate to aircraft operational controls. SAR Table 1.9-10 at 1.9-144 to 1.9-145. Further, DOE states in SAR Section

5.8.3:

> Prior to receipt of a license to receive and possess SNF and HLW, and in accordance with 10 CFR 63.121(c), controls will be implemented to ensure that the requirements of 10 CFR 63.111(a) and (b) are met. The site boundary, as shown in Figure 5.8-2, will be considered as the boundary of the preclosure controlled area under the definition of 10 CFR 20.1003. Such land use controls will include ensuring that U.S. Air Force flight activities in the proximity of the GROA remain within the repository performance analysis considerations of existing and projected U.S. Air Force flight activity (Section 1.6.3.4.1).

SAR Section 5.8.3 at 5.8-7. The petitioners do not reference these portions of the license application or address why these explanations are not adequate to justify DOE's treatment of U.S. Air Force activities over the proposed flight restricted airspace. Consequently, the petitioners have failed to establish a genuine dispute on a material issue of fact or law, and the contention is inadmissible on this basis. *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.") (citations omitted).

NEI-SAFETY-01- SPENT NUCLEAR FUEL DIRECT DISPOSAL IN DUAL PURPOSE CANISTERS

> The License Application ("LA") fails to permit direct disposal of dual purpose canisters ("DPCs") containing commercial spent nuclear fuel and is therefore inconsistent with "as low as is reasonably achievable" ("ALARA") principles, unnecessarily generates additional low-level radioactive waste ("LLRW"), and wastes limited resources.

NEI Petition at 9. NEI argues the LA statement that all commercial spent nuclear fuel will be loaded into Transportation, Aging, and Disposal (TAD) canisters for disposal is inconsistent with ALARA, leads to unnecessary generation of LLRW, and results in increased resource use and costs because DPCs can be directly disposed of in the repository. NEI Petition at 9. NEI claims that workers at either Yucca Mountain or reactor sites will be unnecessarily exposed to increased radiation as a result of unloading the fuel from DPCs and reloading it into TADs. NEI Petition at 9.

Staff Response

The Staff opposes the admission of NEI-SAFETY-01 because it: (a) does not raise an issue material to the findings the NRC must make to support the action involved in the proceeding; and (b) insofar as the contention relates to reactor sites' compliance with ALARA, it does not raise an issue within the scope of this proceeding. *See* 10 C.F.R. § 2.309(f)(1)(iii) and (iv).

10 C.F.R. § 2.309(f)(1)(iii) – Within the Scope of the Proceeding

To the extent NEI-SAFETY-01 claims activities that occur at the reactor sites will not be ALARA, it does not raise an issue within the scope of this proceeding. NEI cites 10 C.F.R. § 50.40 to show that reactor licensees must comply with Part 20. NEI Petition at 10. Without regard to the merits of NEI's claim, this issue is outside the scope of this proceeding, which is whether a construction authorization should be granted or denied for the Yucca Mountain high-level waste repository, based on the application submitted by DOE. *10 C.F.R. §*

2.309(f)(1)(iv) – Materiality

With regard to materiality, an admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. *Id; see PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007); *Southern Nuclear Operating Company* (Early Site Permit for Vogtle ESP Site), LBP-07-03, 65 NRC 237, 253 (2007).

NEI states that 10 C.F.R § 63.111 provides that the geologic repository operations area must comply with 10 C.F.R. Part 20. NEI Petition at 10. While this assertion is true, the ALARA principle applies to the operational and decommissioning phases of the repository, but not to the achievement of the long-term performance objective. Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,751 (Nov. 2, 2001). In promulgating Part 63, the Commission received a comment that the ALARA principle should be used to design critical repository structures, systems, and components so that the performance of certain design features, particularly barriers, would be optimized, but the Commission declined to extend ALARA into postclosure requirements. *Id.* at 55,762.

The decision regarding how to package spent nuclear fuel for disposal in the repository is a design decision affecting postclosure repository performance; it is not part of the operations of the geologic repository operations area. *See* 10 C.F.R § 63.2 ("*Engineered barrier system* [EBS] means the waste packages, including engineered components and systems other than the waste package (e.g., drip shields), and the underground facility."); SAR at 2-6 ("The EBS is comprised of the emplacement drift, drip shield, waste package, naval SNF structure, waste form and waste package internals (*including transportation, aging, and disposal canisters*; naval canisters; HLW canisters; and DOE SNF canisters), waste package pallet,

and invert features.") (emphasis added); and 10 C.F.R. § 63.113 (requiring the EBS and natural barriers to be designed to meet postclosure performance objectives for the geologic repository). Therefore, the ALARA principle does not apply to DOE's choice to place commercial spent nuclear fuel in TADs rather than DPCs for disposal.[37] As a result of this decision, even if spent nuclear fuel is repackaged at Yucca Mountain, the ALARA principle is not violated with respect to workers at Yucca Mountain because the repacking is a result of a decision designed to meet postclosure performance objectives to which ALARA is not applicable. Accordingly, in order to grant or deny the construction authorization sought by DOE, the NRC does not need to make a finding regarding whether disposal of commercial spent nuclear fuel in TADs as opposed to DPCs is ALARA, and the contention does not raise a material issue.

Because NEI-SAFETY-01 (a) does not raise an issue material to the findings the NRC must make to support the action involved in the proceeding; and (b) insofar as the contention relates to reactor sites' compliance with ALARA, it does not raise an issue within the scope of this proceeding, NEI-SAFETY-01 does not satisfy the NRC's contention admissibility requirements and should be rejected.

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[37] In accordance with 10 C.F.R. § 63.111, the geologic repository operations area must meet the requirements of 10 C.F.R. Part 20. Therefore, if workers at Yucca Mountain do repackage spent nuclear fuel, then such repackaging must done in accordance with the requirements of 10 C.F.R. Part 20 (ALARA).

NEI-SAFETY-02 - INSUFFICIENT NUMBER OF NON-TAD SNF SHIPMENTS TO YUCCA MOUNTAIN

> Yucca Mountain's surface facility design capability to receive not less than 90% of commercial spent nuclear fuel ("SNF") in Transportation, Aging, and Disposal ("TAD") canisters is inconsistent with "as low as is reasonably achievable" ("ALARA") principles.

NEI Petition at 13. NEI claims that because the repository surface facilities are designed to receive at least 90 percent of commercial spent nuclear fuel at the repository in TAD canisters, this will cause reactor site workers to unload commercial SNF from dual-purpose canisters (DPCs) and transportable bare fuel casks (BFCs) and reload it into TAD canisters, which results in unnecessary exposure to radiation to reactor site workers and is therefore inconsistent with ALARA principles. NEI Petition at 13. NEI alleges that the exposure to radiation is unnecessary because DOE has already "analyzed the environmental impacts of an alternative scenario whereby up to 25% of SNF would be received at Yucca Mountain in non-TAD canisters and casks and concluded that there would be little if any additional environmental impacts." *Id.*

Staff Response

The Staff opposes the admission of NEI-SAFETY-02 in that it: (a) does not raise an issue within the scope of the proceeding; (b) does not demonstrate that the issue is material to the findings the NRC must make to support the action involved in the proceeding; and (c) does not contain adequate supporting facts or expert opinion. *See* 10 C.F.R. § 2.309(f)(1)(iii), (iv), and (v).

10 C.F.R. § 2.309(f)(1)(iii) – Within the Scope of the Proceeding

NEI-SAFETY-02 does not raise an issue within the scope of this proceeding. NEI's essential argument is that to meet the design requirements in the LA, a large amount of SNF will need to be repackaged into TADs at the reactor sites before being transported to Yucca

Mountain. NEI Petition at 16. This repackaging at reactor sites will result in greater doses to workers at the reactor sites than if the repackaging occurred at Yucca Mountain, which, according to NEI, is inconsistent with ALARA. *Id.* Even assuming there would be a violation of ALARA, it would be at the reactor sites. The contention does not allege that DOE would violate its ALARA requirements for occupational dose or any other applicable requirements at the Yucca Mountain high-level waste repository, but that the methodology used in the Yucca Mountain LA will cause reactor licensees to do so when SNF is reloaded into TADs. *Id*. Without regard to the merits of NEI's contention, the issue raised by NEI is outside the scope of this proceeding, which is whether a construction authorization should be granted or denied for the Yucca Mountain high-level waste repository, based on the application submitted by DOE.

NEI contends that the surface facility design capability to receive at least 90 percent of commercial SNF in TADs instead of DPCs or BFCs will increase dose to workers at reactor sites and thus is inconsistent with ALARA principles. NEI Petition at 15-16. However, in order to issue the construction authorization, under Part 63, the Staff need only find that DOE meets the requirements of 10 C.F.R. Part 20 with respect to the geologic repository operations area. *See* 10 C.F.R § 63.111(a). While NEI cites 10 C.F.R. § 50.40 to demonstrate that reactors are required to comply with 10 C.F.R. Part 20, nothing in 10 C.F.R. Part 63 requires DOE to ensure that reactor licensees meet 10 C.F.R. Part 20, and the NRC is not required to make any findings under 10 C.F.R. Part 50 in order to grant or deny DOE's application for a construction authorization. *See* 10 C.F.R. § 2.309(f)(1)(iv); *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007); *Southern Nuclear Operating Company* (Early Site Permit for Vogtle ESP Site), LBP-07-3, 65 NRC 237, 253 (2007). Therefore, whether or not reactor sites will comply with the ALARA requirements in 10 C.F.R. Part 20 is not material to this proceeding.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEI provides the affidavit of two experts, Brian Gutherman and Richard Loftin, in support of NEI-SAFETY-02. NEI Petition, Attachment 8. They conclude that "to be consistent with the principles of ALARA, DOE should amend the LA to design the Yucca Mountain surface facilities to receive up to 25% of SNF in DPCs and BFCs so that repackaging of SNF from DPCs and BFCs occurs at the repository rather than at reactor sites." *Id.* at ¶ 48. However, in support of NEI-SAFETY-01, both Brian Gutherman and Richard Loftin conclude that DOE's decision to unload SNF from DPC and repackage it into TAD canisters would be inconsistent with ALARA principles, whether the repackaging would occur at reactor sites or the repository. NEI Petition, Attachment 7 at ¶ 71. NEI's experts state in one instance that repackaging SNF from DPCs into TADs is inconsistent with ALARA, but then state that this repackaging should be conducted at the repository instead of at reactor sites. These statements are inconsistent with one another and, therefore, cannot support NEI's contention. Moreover, because of this inconsistency, the experts' statements that repackaging of the fuel, regardless of where, would be inconsistent with ALARA lack a reasoned basis or explanation. In a comparable situation, a licensing board has stated "an expert opinion that merely states a conclusion…without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion as it is alleged to provide a basis for the contention." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). Consequently, NEI fails to provide an adequate supporting expert opinion for NEI-SAFETY-02,[38] and therefore, it is inadmissible. *See USEC,*

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[38] Brian Gutherman and Richard Loftin also supply an affidavit in support of NEI-SAFETY-01. NEI Petition, Attachment 7. Their conclusion that the repackaging of commercial SNF is inconsistent with ALARA because it causes unnecessary exposure to workers, whether at Yucca Mountain or reactor sites, should be disregarded because it is inconsistent with their position in support of NEI-SAFETY-02, where they advocate the position that workers at Yucca Mountain should repackage (continued. . .)

Inc. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

Because NEI-SAFETY-02 fails to meet the criteria set forth in 10 C.F.R. § 2.309(f)(1)(iii), (iv), and (v), the Staff opposes its admissibility.

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commercial SNF from DPCs into TADs. *See* NEI Petition at 11, 15. However, NEI also provided the expert opinion of Dr. Matthew Kozak in support of the position taken in NEI-SAFETY-01, *i.e.* failure to permit direct disposal of DPCs is inconsistent with ALARA. NEI Petition, Attachment 7 at ¶ 71. Because Dr. Kozak has not provided inconsistent opinions in his affidavits, the Staff does not object to NEI-SAFETY-01 on the basis that it does not satisfy 10 C.F.R. § 2.309(f)(1)(v).

NEI-SAFETY-03 - EXCESSIVE SEISMIC DESIGN OF AGING FACILITY

> The design requirement stated in Section 1.2.7.1.3.2.1 of the License Application (LA) Safety Analysis Report (SAR) specifying that the vertical aging overpack system "must withstand a seismic event characterized by horizontal and vertical peak ground accelerations of 96.52 ft/s2 (3g) without tipover and without exceeding canister leakage rates" is excessively conservative, goes beyond the necessary safety margin, and is not consistent with ALARA [as low as is reasonably achievable] principles.

NEI Petition at 17. NEI alleges that the "3g design requirement is excessively conservative and inappropriate," and "the excessive design requirement could increase licensing uncertainty and delay, and could increase the occupational exposures associated with the facility." *Id.*

Staff Response

The Staff opposes the admissibility of this contention because the assertion that the excessive design could lead to licensing uncertainty and delay fails to meet 10 C.F.R. § 2.309(f)(1)(iv) in that NEI has failed to demonstrate this issue is material. The remainder of the contention, which relates to an increase in occupational exposures, fails to meet 10 C.F.R. § 2.309(f)(1)(v) and (vi) in that NEI does not provide supporting facts or expert opinion nor demonstrates that there is a genuine dispute with the license application on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(iv) – Materiality

NEI alleges that the overly conservative design of the aging overpack system unnecessarily increases licensing uncertainty and risk of delay. NEI Petition at 18. However, NEI cites nothing to support its claim that the NRC must consider the possibility of uncertainty or delay when evaluating the license application for the proposed repository at Yucca Mountain. Therefore, NEI has failed to demonstrate that this claim is material to the findings the NRC must make.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEI alleges that "[t]he 3g design requirement[39] is not consistent with ALARA principles." NEI Petition at 18. However, NEI does not provide any facts or expert opinion to specifically address how ALARA principles would be violated by the 3g design requirement. One of NEI's experts states that "the aging casks will likely be designed differently from current dry storage systems, possibly with some structural element or apparatus to prevent overturning." NEI Petition, Attachment 10, Affidavit of Brian Gutherman ¶ 8. This speculative statement is contradicted by DOE in SAR Section 1.2.7.1.3.2.1, wherein DOE states "[t]he design of the vertical aging overpacks permits placement on the aging pads without the requirement for seismic restraints or other tie-downs." The same NEI expert states "[i]nstallation of such an element or apparatus, adjacent to each previously loaded aging cask, will cause the workers involved to receive a higher radiation dose than if the cask could be deployed in the free-standing mode." Gutherman Affidavit ¶ 8. This NEI expert is speculating that the design for the vertical aging overpack will be different than described in the SAR at 1.2.7.1.3.2.1 and speculating how installation of some structural element or apparatus to prevent overturning will be accomplished. Moreover, while the expert does allege that workers will receive higher radiation doses, he does not provide facts, or even claim, that those higher doses would be inconsistent with ALARA.

While NEI characterizes the occupational exposure doses to workers as "unnecessary," NEI's expert did not perform a cost-benefit analysis, as is contemplated by ALARA, and did not provide factual information to support NEI's "unnecessary" dose assertion. *See*

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[39] NEI refers to the requirement that "the vertical aging overpack system of the aging facility 'must withstand a seismic event characterized by horizontal and vertical peak ground accelerations of 96.52 ft/s^2 (3g) without tipover and without exceeding canister leakage rates'" as the 3g design requirement. NEI Attachment 9 at 2-3.

10 C.F.R. §§ 20.1003, 20.1101(b). For instance, NEI's expert does not state how Part 63 requirements would be satisfied if DOE removed the alleged excessive conservatisms from its design. *See* 10 C.F.R. § 20.1003 (mandating consideration of "the purpose for which the licensed activity is undertaken"). Similarly, the expert does not address the changes in benefits to the public health and safety as a result of the less conservative design. *See* 10 C.F.R. § 20.1003 (requiring balancing of "the economics of improvements in relation to benefits to the public health and safety"). Consequently, NEI has failed to meet its burden pursuant to 10 C.F.R. § 2.309(f)(1)(v) of providing facts or expert opinion to support its claim that the 3g design requirement is inconsistent with ALARA principles.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEI claims that "the conservative DOE approach may lead to unnecessary occupational doses at the operational repository." NEI Petition at 18. NEI cites 10 C.F.R. Part 20 and specifically 10 C.F.R. § 20.1101(b) for the proposition that occupational doses must be ALARA. NEI Petition at 18. Part 20 requires an applicant to make a *reasonable* effort to maintain radiation exposures ALARA, consistent with the purpose of the activity undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest. 10 C.F.R. § 20.1003. In promulgating revisions to Part 20, the Commission noted that compliance with the requirement to incorporate the ALARA concept into a radiation protection program will *not* be judged on "whether exposures and doses represent an absolute minimum or whether the licensee has used all possible methods to reduce exposures." Standards for Protection Against Radiation, 56 Fed. Reg. 23,360, 23,367 (May 21, 1991). Accordingly, NEI's assertion that the dose will be unnecessary without a complete ALARA analysis is insufficient to establish a genuine dispute with the license application on a material issue of fact or law

and, therefore, does not satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In sum, the staff oppose admission of this contention.

NEI-SAFETY-04 - LOW IGNEOUS EVENT IMPACT ON TSPA

> The Department of Energy (DOE) in the License Application (LA) has modeled the scenario of a volcano at the Yucca Mountain site in the Total System Performance Assessment (TSPA). Based on an unreasonable set of assumptions that postulate the complete failure of every waste package in the repository, DOE conservatively concludes that intrusive igneous events that intersect the repository account for approximately 40% of the total dose over a 10,000 year period. Based on an analysis and calculation by the Electric Power Research Institute (EPRI), DOE has been excessively conservative in its treatment in the LA TSPA of the consequences of a potential igneous event. NEI contends that in fact substantial additional safety margin exists in this area. NEI contends that if DOE considered a reasonably expected intrusive igneous scenario, the related consequences would show no significant release of radionuclides. DOE's conservative treatment and results could contribute to licensing uncertainty and could delay the development of the repository.

NEI Petition at 23. NEI alleges that DOE uses an unreasonable set of assumptions in the TSPA that lead to an excessively conservative estimate of the consequences of a potential igneous event. NEI Petition at 23. NEI believes that "if DOE considered a reasonably expected intrusive igneous scenario, the related consequences would show no significant release of radionuclides." NEI Petition at 23. NEI alleges that DOE's conservatism "could contribute to licensing uncertainty and could delay the development of the repository." NEI Petition at 23.

Staff Response

The Staff opposes the admissibility of NEI-SAFETY-04 because (a) it fails to meet 10 C.F.R. 2.309(f)(1)(iv) in that NEI has failed to demonstrate the issues raised in the contention are material to the findings the NRC must make to support the grant or denial of the construction authorization, and (b) insofar as the contention relates to licensing uncertainty and delay of the development of the repository, it does not meet 10 C.F.R. 2.309(f)(1)(iii) because it does not raise an issue within the scope of this proceeding. *See* Changes to

Adjudicatory Process, 69 Fed. Reg. 2182, 2221 (Jan. 14, 2004) (failure to comply with any of the § 2.309(f)(1) requirements is grounds for dismissal); *see also Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999).

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

NEI alleges that the result of DOE's excessive conservatism could be licensing uncertainty and delay of the development of the repository. NEI Petition at 23. However, the Notice of Hearing specifies the matters to be considered in the hearing are "whether the application satisfies the applicable safety, security, and technical standards of the AEA and NWPA and the NRC's standards in 10 CFR Part 63 for construction authorization for a high-level waste geologic repository, and also whether the applicable requirements of the National Environmental Policy Act (NEPA) and NRC's NEPA regulations, 10 CFR Part 51, have been met." *U.S. Department of Energy* (High Level Waste Repository); Notice of Hearing and Opportunity To Petition for Leave to Intervene on an Application for Authority To Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain, 73 Fed. Reg. 63,029, 63,029 (Oct. 22, 2008). Licensing uncertainty and possible delay do not fall within the safety, security, and technical or environmental standards that the NRC considers. Therefore, NEI has failed to demonstrate that NEI-SAFETY-04 is within the scope of the hearing.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

In addition, NEI has failed to demonstrate that the issues raised in NEI-SAFETY-04 are material to any finding NRC must make to support the grant or denial of the construction authorization for the geologic repository at Yucca Mountain. While NEI asserts that DOE has overestimated the dose due to the assumption that all waste packages fail in its model of a future intrusive igneous event, NEI does not allege, much less demonstrate, that DOE fails to comply with the regulatory requirements cited by NEI, 10 C.F.R. §§ 63.114, 63.113, 63.311, and proposed 63.342(c). *See* NEI Petition at 23, 25. As such, NEI has not demonstrated

that this contention is material to the findings NRC must make to support the action involved in this proceeding, and NEI-SAFETY-04 is, therefore, inadmissible. *See* 10 C.F.R § 2.309(f)(1)(iv)*; PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007); *Southern Nuclear Operating Company* (Early Site Permit for Vogtle ESP Site), LBP-07-03, 65 NRC 237, 253 (2007). Accordingly, NEI-SAFETY-04 should be denied.

NEI–SAFETY-05 – EXCESSIVE CONSERVATISM IN THE POSTCLOSURE CRITICALITY ANALYSIS

> The postclosure criticality analysis described in Section 2.2.1.4.1.1 of the License Application (LA) Safety Analysis Report (SAR) provides a substantial safety margin, is excessively conservative, and will unnecessarily lead to the expectation that disposal control rod assemblies be inserted in some fuel assemblies at nuclear power plants prior to shipment to disposal.

NEI Petition at 31. In support of this contention, NEI states that Section 2.2.1.4.1.1, which sets forth postclosure criticality methodology, "goes well beyond what is appropriate or necessary to assure safety." *Id*. at 32. NEI argues that "from the perspective of the nuclear industry," the analysis will create "a de facto expectation that disposal control rod assemblies (Section 2.2.1.4.1.1.3) be inserted into some fuel assemblies at the nuclear power plants" and that an increased occupational dose will result to the workers who are required to insert the assemblies. *Id*. NEI further argues that the resultant dose to such workers will not be As Low As Reasonably Achievable ("ALARA"), as required by 10 C.F.R. § 20.1101(b). *Id*. at 31-32. NEI argues that existing industry practice in this area provides a sufficient margin of safety. *Id*. at 32.

Staff Response

The Staff opposes the admission of NEI-SAFETY-5, in that it: (a) does not raise an issue material to the findings the NRC must make to support the action involved in the proceeding; and (b) does not raise an issue within the scope of this proceeding. *See* 10 C.F.R. § 2.309(f)(1)(iii) and (iv).

10 C.F.R. § 2.309(f)(1)(iii) - Scope

NEI-SAFETY-5 does not raise an issue within the scope of this proceeding. NEI's essential argument is that "de-facto" requirement to insert disposal control assemblies into fuel assemblies at nuclear power plants will violate those plants' requirement to keep

occupational dose ALARA, a requirement found at 10 C.F.R. §§ 50.40 and 2201(b). NEI Petition at 31-32. The contention does not allege that the Yucca Mountain high-level waste repository will violate its ALARA requirements for occupational dose or any other applicable requirements, but that the methodology used in the Yucca Mountain LA will cause reactor licensees to do so when disposal control rod assemblies are inserted into spent fuel assemblies at those facilities. *Id*. at 31-32. Without regard to the merits of NEI's contention, the issue raised by NEI is outside the scope of this proceeding, which is whether a construction authorization should be granted or denied for the Yucca Mountain high-level waste repository, based on the application submitted by DOE.

10 C.F.R. § 2.309(f)(iv) - Materiality

With regard to materiality, an admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. *Id; see PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007); *Southern Nuclear Operating Company* (Early Site Permit for Vogtle ESP Site), LBP-07-03, 65 NRC 237, 253 (2007).

NEI-SAFETY-5 claims that the LA's overly conservative criticality analysis for the Yucca Mountain facility will lead to other nuclear facilities exposing their workers to a dose that is greater than ALARA, in violation of their 10 C.F.R. § 20.1101(b) requirement. NEI Petition at 31-32. Section 20.1101(b) requires each licensee to use, to the extent practical, procedures and controls to ensure that the dose from that facility to workers and to members of the public be ALARA. 10 C.F.R. § 20.1101(b). Although the contention references the ALARA requirement applicable to the high-level waste repository, *see* NEI Petition at 31-32, it does not claim that occupational exposure from the Yucca Mountain facility will be greater than ALARA or address exposure to individuals from the Yucca Mountain facility in any way. If

NEI-SAFETY-5 were admitted and litigated, its outcome would not in any way affect or bear on the NRC's decision to issue, or decline to issue, the construction authorization for Yucca Mountain sought by DOE.[40] Therefore, because the subject matter of the contention would not impact the grant or denial of the pending construction authorization in any way, it does not raise an issue material to the findings that the NRC must make in order to issue or decline to issue the construction permit and therefore should not be admitted.

Accordingly, NEI-SAFETY-5 does not meet the NRC's contention admissibility requirements and should be rejected.

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[40] For example, the expert affidavit supporting NEI-SAFETY-5 states that the LA SAR's criticality assumption that full flooding with water will occur is unrealistic and that the criticality analysis should have instead considered configurations less than fully flooded, which the affidavit claims will "increase the number of assemblies that do not require disposal control rod assemblies." *See* NEI Petition at Attachment 12, "Affidavit of Everett L. Redmond II, In Support of Proposed Contention NEI-SAFETY-05" at 3. Even if this assertion were correct, altering this assumption and thereby increasing the number of fuel assemblies not requiring disposal control rod assemblies to be installed at the originating nuclear power plant would have no impact on the NRC's decision to grant or deny the construction authorization application since, as NEI's expert testifies, altering the assumption in this manner "would still maintain a high level of conservatism" and therefore presumably not, at least according to NEI, appreciably alter the performance of the repository or its compliance with applicable requirements. *Id*. at 5.

NEI-SAFETY-06 - DRIP SHIELDS ARE NOT NECESSARY

> The drip shields that the Department of Energy ("DOE") proposes as part of the Engineered Barrier System ("EBS") are not necessary because the repository is capable of meeting regulatory requirements with significant performance margin and defense in depth without drip shields. Installation of the drip shields will result in significant and unnecessary radiation exposures, resource use, and costs, and is therefore inconsistent with "as low as is reasonably achievable" ("ALARA") principles.

NEI Petition at 35. In this contention, NEI asserts that the drip shields proposed by DOE as part of the EBS are not necessary and that consequently their installation violates ALARA principles because it will lead to unnecessary radiation exposures for site workers and use of resources. NEI Petition at 35. In particular, NEI claims that the drip shields are not necessary to meet regulatory requirements because DOE's post-closure analysis is overly-conservative. *Id.*

Staff Response

The NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

The Commission's regulations at 10 C.F.R. § 2.309(f)(1)(iv) require that an issue must be material to the findings the Commission must make. "Any issues of law or fact raised in a contention must be material to the grant or denial of the license application in question, i.e., they must make a difference in the outcome of the licensing proceeding so as to entitle the petitioner to cognizable relief…This requirement of materiality embodies the notion that an alleged error or deficiency regarding a proposed licensing action must have some significance relative to the agency's general responsibility and authority to protect the public health and safety and the environment." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179-80 (1998). *See also PPL Susquehanna*

LLC (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007); *Southern Nuclear Operating Company* (Early Site Permit for Vogtle ESP Site), LBP-07-3, 65 NRC 237, 253 (2007).

In this contention, NEI claims that the installation of drip shields is not necessary and violates ALARA principles as defined in 10 C.F.R. Part 20, "Standards for Protection Against Radiation." NEI Petition at 36. NEI claims that "the repository will comply with regulatory requirements with significant performance margin without the titanium drip shields and the fabrication and installation of the drip shields will thus result in (1) unnecessary radiation exposures to repository site workers; (2) unnecessary use of resources; and (3) the unnecessary expenditure of billions of dollars. Hence the repository design's inclusion of titanium drip shields is not consistent with ALARA principles." *Id.* at 36-37.

NEI states that 10 C.F.R § 63.111 provides that the geologic repository operations area must comply with 10 C.F.R. Part 20. NEI Petition at 10. While this assertion is true, the ALARA principle applies to the operational and decommissioning phases of the repository, but not to the achievement of the long-term performance objective. Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,751 (Nov. 2, 2001). In promulgating Part 63, the Commission received a comment that the ALARA principle should be used to design critical repository structures, systems, and components so that the performance of certain design features, particularly barriers, would be optimized, but the Commission declined to extend ALARA into postclosure requirements. *Id.* at 55,762. The decision regarding the use of drip shields is a design decision affecting postclosure repository performance; it is not part of the operations of the geologic repository operations area.[41] *See* 10 C.F.R § 63.2 ("*Engineered barrier system*

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[41] In accordance with 10 C.F.R. § 63.111, the GROA must meet the requirements of 10 (continued. . .)

[EBS] means the waste packages, including engineered components and systems other than the waste package (*e.g., drip shields*), and the underground facility."); SAR at 2-6 ("The EBS is comprised of the emplacement drift, *drip shield*, waste package, naval SNF structure, waste form and waste package internals (including transportation, aging, and disposal canisters; naval canisters; HLW canisters; and DOESNF canisters), waste package pallet, and invert features.") (emphasis added); and 10 C.F.R. § 63.113 (requiring the EBS and natural barriers to be designed to meet postclosure performance objectives for the geologic repository). Therefore, the ALARA principle does not apply to DOE's choice to install drip shields. Accordingly, in order to grant or deny the construction authorization sought by DOE, the NRC does not need to make a finding regarding whether installation of drip shields, as opposed to not installing them, is ALARA.[42]

Furthermore, ALARA does not prohibit "unnecessary" doses. Rather, Part 20 requires an applicant to make a *reasonable* effort to maintain radiation exposures ALARA, "consistent with the purpose of the activity undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest." 10 C.F.R. § 20.1003. In promulgating revisions to Part 20, the Commission noted that compliance with the requirement to incorporate the ALARA concept into a radiation protection program will *not* be judged on "whether exposures and

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C.F.R. Part 20. Therefore, the actual installation of the drip shields must done in accordance with the requirements of 10 C.F.R. Part 20 (ALARA).

[42] Given that NRC does not need to make a determination as to whether DOE's decision to use drip shields is ALARA, NEI's arguments in this contention regarding the conservatisms of DOE's post-closure analysis need not be addressed.

doses represent an absolute minimum or whether the licensee has used all possible methods to reduce exposures." Standards for Protection Against Radiation, 56 Fed. Reg. 23,360, 23,367 (May 21, 1991). Accordingly, the NRC does not need to determine whether there will be any "unnecessary" doses in order to grant or deny the construction authorization. Based on the foregoing, NEI has not demonstrated the issue is material the NRC must make and NEI-SAFETY-06 should be rejected.

NEV-SAFETY-01 - DOE INTEGRITY

> The LA cannot be granted because DOE lacks the requisite integrity to be an NRC licensee. NEV Petition, at 16.

NEV Petition at 16. NEV-SAFETY-01 alleges that DOE's continuing and past actions "reveal a pattern of material false statements and omissions and an elevation of schedule considerations over safety and compliance." NEV Petition at 16. Nevada asserts that "[t]aken together, these actions indicate that DOE has a defective safety culture and lacks the integrity" to be an NRC licensee. NEV Petition at 16.

Staff Response

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that "the issue raised is within the scope of the proceeding." 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co*. (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). This proceeding was initiated when the Commission issued "Notice of Hearing and Opportunity to Petition for Leave to Intervene." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __, (Oct. 17, 2008) (slip op.). The Notice stated that the scope of the hearing was to "consider the application for construction authorization filed by DOE pursuant to Section 114 of the Nuclear Waste Policy Act of 1982 (NWPA), 42 USC 10134, and pursuant to 10 CFR Parts 2 and 63." *Id*. at __ (slip op. at 1).

NEV-SAFETY-01 questions whether DOE has the requisite integrity to be the licensee to construct the proposed Yucca Mountain repository. The contention raises an issue of whether, if a construction authorization is granted, DOE should be the entity to which it is granted. In support of this proposition, Nevada cites two Commission cases: *Georgia Inst.*

of Tech. (Georgia Tech Research Reactor), CLI 95-12, 42 NRC 111 (1995), and *Georgia Power Co*. (Vogtle Electric Generating Plant, Units 1 & 2), CLI-93-16, 38 NRC 25 (1993). NEV Petition at 16-17. Neither of these cases, however, involved repository licensing. *Georgia Tech* concerned a renewal license for the Georgia Tech Research Reactor. *Georgia Tech*, CLI-95-12, 42 NRC at 113. *Vogtle* involved a hearing on a proposal to transfer operating rights over to Southern Nuclear Operating Company, Inc. *Vogtle*, CLI-93-16, 38 NRC at 27. Moreover, neither case addresses the unique requirements of the NWPA.

Section 114(b) of the NWPA, clearly and specifically designates the Department of Energy as the sole statutorily mandated entity that has been selected to apply to the NRC to construct and operate the proposed Yucca Mountain repository. 42 U.S.C. § 10134(b) (2000) (". . .the Secretary [of Energy] shall submit to the [Nuclear Regulatory] Commission an application for a construction authorization for a repository. . ."). There is no statutory or regulatory provision that would permit any entity other than DOE to construct and operate the proposed Yucca Mountain repository. Therefore, DOE, by virtue of this statutory mandate, is the appropriate applicant. If "the Commission authorize[s] construction of a geologic repository at Yucca Mountain, the NRC staff will conduct an ongoing, performance-based inspection program to evaluate DOE's compliance with the performance objectives and any conditions established in the construction authorization. . ." Final Rule, Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada, 66 Fed. Reg. 55,731, 55,744 (Nov. 2, 2001). However, the issue that Nevada raises, whether DOE has the requisite integrity to be the licensee, is not appropriate for consideration in this proceeding.

Because this contention is outside the scope of the proceeding, and therefore does not meet the contention admissibility criterion in 10 C.F.R. § 2.309(f)(1)(iii), NEV-SAFETY-01 should be rejected.

NEV-SAFETY-02 - DOE MANAGEMENT

> The LA cannot be granted because DOE lacks the requisite management ability to construct and operate a safe repository.

NEV Petition at 28. NEV-SAFETY-02 alleges that DOE's current and past actions with respect to Yucca Mountain and other large projects demonstrates that it is unqualified to be a licensee because its management "would jeopardize the design, construction, and operation of a proposed Yucca Mountain repository, would fail to protect the public health and safety and . . . would fail to comply with NRC requirements . . . ." NEV Petition at 28.

Staff Response

The Staff submits that NEV-SAFETY-02 does not comply with 10 C.F.R. § 2.309(f)(1)(iii) because it fails to show that the issue raised therein is within the scope of the instant proceeding. On that basis, this contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that "the issue raised is within the scope of the proceeding." 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co*. (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). This proceeding was initiated when the Commission issued the "Notice of Hearing and Opportunity to Petition for Leave to Intervene." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __, (Oct. 17, 2008) (slip op.). The Notice stated that the scope of the hearing was to "consider the application for construction authorization filed by DOE pursuant to Section 114 of the Nuclear Waste Policy Act of 1982 (NWPA), 42 USC 10134, and pursuant to 10 CFR Parts 2 and 63." *Id.* at __ (slip op. at 1).

NEV-SAFETY-02 questions whether DOE has the requisite management competence to be the licensee to construct the proposed Yucca Mountain repository. NEV Petition at 28. In support of this proposition, Nevada cites to past actions by DOE that it asserts disqualify DOE as a licensee. *See* NEV Petition at 30-44. Nevada cites past NRC case law "for the proposition that an applicant's management competence is a proper consideration in a licensing proceeding to determine entitlement to an NRC license." NEV Petition at 28, *citing Piping Specialists, Inc*. (Kansas City, MO), LBP-92-25, 36 NRC 156 (1992); *Louisiana Energy Services, LP* (Claiborne Enrichment Center), LBP-91-41, 34 NRC 332 (1991); *Sequoyah Fuels Corp*. (Uranium Conversion Facility), CLI-86-17, 24 NRC 489 (1986). However, none of these cases addresses the unique requirements of the NWPA.

Section 114(b) of the Nuclear Waste Policy Act of 1982, as amended, 42 U.S.C. § 10134(b), clearly and specifically designates the Department of Energy as the sole statutorily mandated entity that has been selected to apply to the NRC to construct and operate the proposed Yucca Mountain repository (". . .the Secretary [of Energy] shall submit to the [Nuclear Regulatory] Commission an application for a construction authorization for a repository. . ."). There is no statutory or regulatory provision that would permit any entity other than DOE to construct and operate the proposed Yucca Mountain repository. If "the Commission authorize[s] construction of a geologic repository at Yucca Mountain, the NRC staff will conduct an on-going, performance-based inspection program to evaluate DOE's compliance with the performance objectives and any conditions established in that construction authorization . . . ." Final Rule, Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,731, 55,744 (Nov. 2, 2001). Because the NWPA designates DOE as the sole possible applicant and licensee for the repository, the issue that Nevada raises in NEV-SAFETY-2 – namely, whether DOE has the requisite management competence to be the licensee for the repository -- is outside the scope of the proceeding.

Because this contention is outside the scope of the proceeding, and therefore does not meet the contention admissibility criterion in 10 C.F.R. § 2.309(f)(1)(iii), NEV-SAFETY-02 should be rejected.

NEV-SAFETY-03 - QUALITY ASSURANCE IMPLEMENTATION

> SAR Subsections 5.0, 5.1, 5.1.2, and similar subsections and DOE's QARD (incorporated by reference in the License Application in Chapter 5), which promise DOE compliance with quality assurance (QA) requirements in the future, ignore the facts that DOE has been and continues to be unable to implement an adequate QA program and that there exists no basis for a reasonable assurance that DOE will do so in the future.

NEV Petition at 45. NEV-SAFETY-03 challenges SAR Subsections 5.0, 5.1, 5.1.2, and similar subsections which describe future DOE compliance with quality assurance ("QA") requirements. *Id.* The contention asserts that, based on alleged past and current practices, DOE has been unable to implement an adequate QA program and that as a result, there is no basis for a reasonable assurance that DOE will do so in the future. NEV Petition at 45.

Staff Response

The Staff opposes admission of NEV-SAFETY-03 because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-03 fails to demonstrate that the issue it raises is material to the finding the Staff must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 333-34 (1999) (internal citation omitted).

NEV-SAFETY-03 cites requirements of 10 C.F.R. § 63.142 and 10 C.F.R. § 63.143, which describe regulatory requirements for implementation of a QA program, and raises the

issue of whether DOE has complied with those requirements. NEV Petition at 46. Nothing in Part 63 indicates that DOE's QA program must be fully implemented prior to issuing a construction authorization. Rather, in the SAR, DOE is required to provide "[a] description of the [QA] program to be applied to the structures, systems, and components important to safety and to the engineered and natural barriers important to waste isolation. The description of the [QA] program must include a discussion of how the requirements of § 63.142 will be satisfied." 10 C.F.R. § 63.21(c)(20) (emphasis added).

NEV-SAFETY-03 cites examples of previous QA program issues and findings and challenges whether there is reasonable assurance DOE will in the future comply with 10 C.F.R. §§ 63.142 and 63.143. *See* NEV Petition at 45, 50-58. In order to approve the license application, the NRC must find that the QA program that DOE has described will comply with Subpart G of 10 C.F.R. Part 63 and that it describes how the applicable requirements of 10 CFR 63.142 will be satisfied. 10 C.F.R. §§ 63.21(c)(20) & 63.31(a)(3)(iii). This requirement only applies prospectively to DOE's future activities in the event a construction authorization is granted.

Nevada also states that DOE's past activities regarding its QA program are relevant to the review methodology outlined in NUREG-1804, Rev. 2, *Yucca Mountain Review Plan* (July 2003) (ADAMS Accession No. ML032030389). NEV Petition at 48-49. However, the Yucca Mountain Review Plan is not a regulation and it does not impose regulatory requirements on DOE. *See Curators of the Univ. of Missouri* (TRUMP-S Project), CLI-95-8, 41 NRC 386, 397 (1995) ("NUREGs and Regulatory Guides are advisory by nature and do not themselves impose legal requirements . . . . A licensee is free either to rely on NUREGs and Regulatory Guides or to take alternative approaches to meet legal requirements. . . .").

Issues concerning DOE's future compliance with its QA program will be subject to the NRC's inspection and oversight process which will provide ongoing confidence into the future

that DOE will comply with applicable regulations. *See* Final Rule, Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada, 66 Fed. Reg. 55,731, 55,744 (Nov. 2, 2001) ("Should the Commission authorize construction of a geologic repository at Yucca Mountain, the NRC staff will conduct an ongoing, performance-based inspection program to evaluate DOE's compliance with the performance objectives and any conditions established in that construction authorization. . . .").

Therefore, NEV-SAFETY-03 should be rejected because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv).

NEV-SAFETY-04 - CONTENT OF QUALITY ASSURANCE PROGRAM

> Legal issue: SAR Subsection 5.1.2, which states that the Quality Assurance Requirements and Description (QARD) addresses design, analysis, fabrication, construction and testing of the repository, fails to comply with applicable quality assurance criteria because the SAR does not address repository operation, permanent closure, and decontamination and dismantling of surface facilities.

NEV Petition at 73. NEV-SAFETY-04 asserts that SAR Subsection 5.1.2 is materially incomplete, and therefore fails to comply with the requirements of 10 C.F.R. § 63.21(c)(20) because the SAR does not address repository operation, permanent closure, decontamination and dismantling of surface facilities. NEV Petition at 73-74.

Staff Response

The Staff opposes admission of NEV-SAFETY-04 because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-04 is inadmissible because it fails to assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). The APAPO Board specified that the 10 C.F.R. § 2.309(f)(1)(iv) materiality requirement requires "citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *See U.S. Dep't of Energy* (High Level Waste Repository: Pre-Application Matters), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-04 asserts that SAR Subsection 5.1.2 is materially incomplete because the QARD does not address repository operation, permanent closure, decontamination and dismantling of surface facilities. NEV Petition at 73. As a result, according to Nevada, this violates 10 C.F.R. § 63.21(c)(20), which requires a "description of the quality assurance

program” applicable to these items. *Id.* at 75.

The contention misreads 10 C.F.R. § 63.21(c)(20). DOE must submit a description of the quality assurance program, which "must include a discussion of how the applicable requirements of § 63.142 will be satisfied." 10 C.F.R. § 63.21(c)(20) (emphasis supplied). Section 63.142(a) states that quality assurance program described in the SAR shall apply to "all structures, systems, and components important to safety, to design and characterization of barriers important to waste isolation, and to related activities." These related activities include "facility and equipment design and construction; facility operation; performance confirmation; permanent closure; and decontamination and dismantling of surface facilities." Id. However, the regulation further provides that DOE "shall establish a quality assurance program that complies with the requirements of this subpart at the earliest practicable time consistent with the schedule for accomplishing the activities" listed above. 10 C.F.R. § 63.142(c) (emphasis supplied). This indicates that it is expected that DOE will complete its quality assurance program in stages, according the current phase of the total repository project. NUREG-1804, Rev. 2, Yucca Mountain Review Plan (July 2003) at 2.5-4(ADAMS Accession No. ML032030389). Nevada identifies no regulatory requirement that these activities be addressed at the construction authorization stage. Consequently, NEV-SAFETY-04 fails to assert an issue of law or fact that is “material to the findings the NRC must make to support the action that is involved in the proceeding,” as required by 10 C.F.R. § 2.309(f)(1)(iv). For this reason, the contention is inadmissible.

NEV-SAFETY-05 -EMERGENCY PLAN

> Legal issue: SAR Subsection 5.7 (and subsections therein), which states that an emergency plan will be provided to the NRC no later than 6 months prior to the submittal of the updated application for a license to receive and possess spent nuclear fuel and high-level radioactive waste, contains a mere commitment to develop an emergency plan as opposed to the plan itself or even a description of the plan. NEV Petition, at 76.

NEV Petition at 76. NEV-SAFETY-05 asserts that SAR Section 5.7 contains a commitment to develop and emergency plan, as contrasted with an actual plan or a description of such plan. Consequently, Nevada contends that SAR Section 5.7 fails to include numerous elements of an emergency plan as required by 10 C.F.R. § 63.161 and 10 C.F.R. § 72.32(b). *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-05 because, to the extent it argues that DOE must include an actual emergency plan in the SAR, it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application. To the extent that the contention argues that the information provided in SAR section 5.7 is not an adequate description of an emergency plan, the contention fails to raise a genuine dispute regarding the application as required by 10 C.F.R § 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-05 fails to demonstrate that the issue it raises is material to the finding the Commission must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. *See, e.g., Dominion Nuclear North Anna, LLC* (Early Site Permit for North

Anna ESP Site), LBP-04-18, 60 NRC 253, 265-66 (2004). The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy* (High Level Waste Repository: Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-05 cites requirements of 10 C.F.R. § 63.161 and 10 C.F.R. § 72.32(b), which describe criteria for emergency planning. However, 10 C.F.R. § 63.161 provides that DOE shall develop an emergency plan based on the criteria of 10 C.F.R. § 72.32(b). It does not include a requirement for DOE to submit a finalized emergency plan with its application. 10 C.F.R. § 63.21(c), on the other hand, specifically applies to the contents of the license application. It describes those mandatory items that must be included in the application. 10 C.F.R. § 63.21(c)(21) specifically states that the application must include a "*description of the plan* for responding to and recovering from radiological emergencies. . .as required by § 63.161." (Emphasis added). Therefore, under 10 C.F.R. § 63.21(c)(21), DOE is required to provide only "a description of the plan," but there is no requirement that DOE produce the plan itself.

Consequently, NEV-SAFETY-05's assertion that the application fails to comply with 10 C.F.R. § 63.21(c)(21) because it does not include elements of a emergency plan results from misreading 10 C.F.R. § 63.21(c)(21), because DOE's application includes a description of the emergency plan, which is what is required by 10 C.F.R. § 63.21(c)(21).

Therefore, NEV-SAFETY-05 should be rejected because its assertion, that SAR Section 5.7 fails to include information needed to formulate emergency response plans, fails to demonstrate that the issue raised is material to a finding the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv). For this reason the contention, to the extent that it argues that DOE must include a full emergency plan in the SAR is, inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the

applicant/licensee on a material issue of law or fact," identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "'bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

NEV-SAFETY-05 asserts that DOE's SAR "contains a mere commitment to develop an emergency plan as opposed to . . . a description of the plan." NEV Petition at 76. Therefore, Nevada argues, the application does not meet 10 C.F.R. § 63.21(c)(21). *Id.* However, Nevada does not specify why the information provided in SAR 5.7 is insufficient to satisfy section 63.21(c)(21) other than a conclusory statement that such information is a "mere commitment" to develop a future emergency plan. "[B]ald or conclusory allegation[s]" are not sufficient to show a genuine dispute on a material issue. *See Millstone*, CLI-01-24, 54 NRC at 358. To the extent that it argues that the emergency plan description in SAR section 5.7 is insufficient, NEV-SAFETY-05 does not meet 10 C.F.R. § 2.309(f)(1)(vi), and, therefore, is inadmissible.

For the reasons discussed above, NEV-SAFETY-05 does not comply with 10 C.F.R. § 2.309(f)(1) and, therefore, should be rejected.

NEV-SAFETY-06 - PART 21 COMPLIANCE

> Legal issue: SAR Subsections 1.5.1 and 5, which state that DOE will identify and evaluate deviations and failures to comply and will report defects and failures to comply associated with activities for and basic components supplied to the Yucca Mountain repository, fails to address the elements of the program to govern such activities or the procedures for implementing such activities, and therefore there is no assurance that such activities are currently in place or functioning. NEV Petition at 80.

NEV Petition at 80. NEV-SAFETY-06 asserts that SAR Subsections 1.5.1 and 5 do not comply with the requirements of 10 C.F.R. Part 21 and 10 C.F.R. § 63.73(b), because they do not address certain specified elements of the program governing those activities or the procedures for implementing those activities. NEV Petition at 80.

Staff Response

The Staff opposes admission of NEV-SAFETY-06 because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-06 fails to demonstrate that the issue it raises is material to the finding the Commission must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-06 cites requirements of 10 C.F.R. Part 21 and 10 C.F.R. § 63.73(b),

which describe regulatory requirements for reporting deficiencies. Nevada asserts that 10 C.F.R. §§ 21.1 and 21.2(a)(2) require DOE to have in place a program to ensure that individuals, corporations, partnerships, or other entities doing business with DOE properly identify, evaluate or report failures to comply or defects associated with activities for or basic components supplied to DOE for the Yucca Mountain repository. NEV Petition at 81. Because DOE is not yet a licensee, 10 C.F.R. § 21.51(a)(2) does not yet apply to any of its procurement contractors. This is because, pursuant to 10 C.F.R. § 21.3, a "basic component" is a "structure, system or component . . . that is directly procured by the licensee of a facility or activity subject to the regulations" in Part 21. Because DOE at this point is an applicant, not a licensee, there are no suppliers of basic components to which 10 C.F.R. § 21.51 would apply.

Nevada asserts that 10 C.F.R. § 63.73 requires DOE to promptly notify the NRC of certain deficiencies found in the characteristics of the Yucca Mountain site, and design, and construction of the GROA based upon a program for evaluating and reporting deviations and failures to comply. Section 63.73 will not apply until, and unless, a construction authorization is granted. Subpart D of Part 63, discusses records, reports, tests, and inspections that must be kept or may be conducted in relation to licensed activity. Until and unless a construction authorization is issued, there will be no licensed activity taking place at Yucca Mountain. In addition, 10 C.F.R. § 63.32(b) requires that the Commission incorporate conditions into the construction authorization requiring DOE to furnish reports regarding: "[a]ny data about the site, obtained during construction, that are not within the predicted limits on which the facility design was based [and a]ny deficiencies, in design and construction, that if uncorrected, could adversely affect safety at any future time."

Nevada asserts that 10 C.F.R. § 63.31(a)(3)(vi) "requires adequate procedures to be in place to protect health and to minimize danger to life or property." NEV Petition at 80. Contrary to Nevada's assertion, 10 C.F.R. § 63.31(a)(3)(vi) states that in its determinations

for construction authorization, the Commission shall consider whether "DOE's *proposed* operating procedures to protect health and to minimize danger to life or property are adequate." (emphasis added). No other provision of Part 63 indicates that DOE's deficiency reporting procedures must be final prior to issuing a construction authorization.

Therefore, NEV-SAFETY-06 should be rejected because its assertion, that SAR Sections 1.5.1 and 5 fail to address certain specified elements of the program for evaluation and reporting of deviations and failures to comply or the procedures for implementing those activities, fails to demonstrate that the issue raised is material to a finding the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv).

For the reasons discussed above, NEV-SAFETY-06 is inadmissible.

NEV-SAFETY-07 - RETRIEVAL PLANS AND QA

> DOE's description of its plans for retrieval and its QA program are deficient because structures, systems and components necessary for retrieval to be accomplished are not all subject to QA.

NEV Petition at 84. NEV-Safety-07 states that the application of DOE's QA program depends on classifying structures, systems and components (SSC) as important to waste isolation (ITWI) or important to safety (ITS). *Id.* Nevada asserts that the SAR glossary does not clearly define any items that are necessary for retrieval as ITWI. *Id.* at 85. Nevada claims that the consequence of this is that the QA status of a structure, system or component that is necessary for retrieval depends only on whether it is needed to provide reasonable assurance that retrieval will not lead to excessive doses in normal operation and in category 1 and 2 event sequences. *Id.* As a result, according to Nevada, DOE ignores post-closure waste isolation. Nevada asserts that DOE should have defined all structures, systems and components which are necessary for retrieval as ITWI. *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-07 because it (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's construction authorization.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-07 fails to demonstrate that the issue it raises is material to the finding the Commission must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation

that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-07 asserts that certain provisions of the SAR do not meet the requirements of Part 63, Subpart G, and "especially 10 CFR § 63.141(a),"[43] because only some of the SSCs that are needed for retrieval are identified as ITS, but that, in reality, all SSCs that are needed for retrieval are ITWI and, as such, they should all be subject to DOE's quality assurance program. NEV Petition at 84.

10 CFR § 63.142(a) identifies those SSCs that are required to be subject to DOE's quality assurance program. It specifies that the license application must include a description of the QA program that will be "applied to all structures, systems, and components <u>important to safety</u>, to design and characterization of barriers <u>important to waste isolation</u>, and to related activities." 10 C.F.R. § 63.142(a) (emphasis added). The section also provides that "[t]he pertinent [quality assurance] requirements of this subpart apply to all activities that are important to waste isolation and important to safety functions of those structures, systems, and components." *Id.* Therefore, whether or not the SAR glossary describes an SCC as ITS or ITWI is not, per se, dispositive as to whether or not the SSC must be subject to DOE's quality assurance program. As long as an SCC is characterized as either ITS or ITWI, it must be included in the QA program.

NEV-SAFETY-07 asserts that because DOE does not define any SSC that is necessary for retrieval as ITWI, the QA status of such an SSC "depends only on whether it is needed to provide reasonable assurance retrieval will not lead to excessive doses in normal operation

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[43] Since 10 CFR § 63.141 does not include subparagraphs, the Staff has assumed that reference to § 63.141(a) is a typographic error and that the intended reference is to 10 CFR § 63.142(a). This answer is based on that assumption.

and category 1 and 2 event sequences, ignoring post-closure waste isolation." NEV Petition at 85. However, as already noted, the categorization given to an SSC does not determine whether or not the SSC is subject to quality assurance, and Nevada does not explain how DOE's categorization of SSCs that are necessary for retrieval as ITWI is material to any decision the Commission must make with respect to a grant or denial of DOE's application. Therefore, this contention should be denied because it does not meet the materiality requirement of 10 C.F.R. § 2.309(f)(1)(iv).

Further, 10 CFR § 63.142(a) includes an extensive list of those activities that are subject to quality assurance. This list identifies "site characterization; acquisition, control, and analyses of samples and data; tests and experiments; scientific studies; facility and equipment design and construction; facility operation; performance confirmation; permanent closure; and decontamination and dismantling of surface facilities. . . designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, modifying, [and] site characterization. . . ." 10 C.F.R. § 63.142(a). None of the items listed are necessary for retrieval, and the list does not explicitly mention retrieval.

Therefore, this contention should not be admitted because it fails to demonstrate that the issue Nevada raises is material to findings the NRC must make to grant or deny DOE's application, as required by 10 C.F.R. § 2.309(f)(1)(iv).

NEV-SAFETY-08 - ALARA AND THE AGING FACILITY

> The discussion of the Aging Facility in SAR Subsection 1.2.7, and related subsections, is insufficient to establish compliance with NRC requirements that occupational exposure to radiation be "as low as reasonably achievable" (ALARA). NEV Petition at 87

NEV Petition at 87. NEV-SAFETY-08 alleges that it is not possible to make a credible demonstration that ALARA requirements have been met since DOE makes simplifying assumptions because the SAR design does not include specific aging overpack shielding design, aging facility layout and loading plans. NEV Petition at 89.

Staff Response

The Staff opposes admission of NEV-SAFETY-08 because it fails to meet the requirements of Section 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "'bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), pet. for reconsid. denied, CLI-02-01, 55 NRC 1 (2002). (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)). A contention that does not directly controvert a specific portion of the application, or identify specific additional

information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), review declined, CLI-94-2, 39 NRC 91 (1994).

NEV-SAFETY-08 fails to show that there is a genuine dispute on a material issue, as required by 10 C.F.R. § 2.309(f)(1)(v). NEV-SAFETY-08 alleges that it is not possible to make a credible demonstration that ALARA requirements have been met since DOE makes simplifying assumptions because the SAR design does not include specific aging overpack shielding design, aging facility layout and loading plans. NEV Petition at 89. This ignores the fact that the Aging Facility layout is discussed in SAR Section 1.2.7.1 with figures describing layouts for the aging pad areas of the proposed facility. In addition, the aging overpack shielding design specifications are described in SAR section 1.2.7.1.3.2. SAR Figure 1.2.7-6 shows a typical vertical aging overpack. SAR Table 1.10-6 also lists the dimensions of the aging overpack which is designed to meet a dose rate of 40 mrem/hr on contact.

Further, DOE has provided information regarding how it will ensure that the principles of ALARA in the design of the Aging Facility would be met in accordance with 10 CFR § 20.1101(b). SAR Subsection 1.2.7.6.5 describes the specific ALARA considerations incorporated in the design of the Aging Facility. These considerations include locating the Aging Facility a sufficient distance from the handling and support repository facilities to minimize doses, posting or fencing surrounding the aging pad area to indicate where a hypothetical individual would receive a dose of 100 mrem/yr, and spacing aging overpacks to reduce dose rates to workers and to reduce the time required for placement and removal of overpacks. SAR Subsection 1.2.7.6.5 at 1.2.7-13. Further, the aging facility layout is described in SAR Section 1.2.7.1 with figures demonstrating layouts in aging pad areas of the facility. Nevada has not raised a specific dispute with regard to any of this information in the SAR. Because NEV-SAFETY-08 does not directly controvert a specific portion of the

application, the contention does not comply with 10 C.F.R. § 2.309(f)(1)(vi) and, therefore, is inadmissible. *See Rancho Seco*, LBP-93-23, 38 NRC at 247-48.

NEV-SAFETY-08 also seeks to raise a dispute with SAR subsection 1.2.7 and "related subsections." To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "related" subsection of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be

admissible, it should be limited to disputes to the specific identified section of the SAR.

For the reasons discussed above, NEV-SAFETY-08 should be rejected.

NEV-SAFETY-09 – INCREASING CO_2 LEVELS ON FUTURE CLIMATE PROJECTIONS

> SAR Subsections 2.3.1.2.1.2, 5.1.6.5, and similar subsections, which state that the infiltration model used for Yucca Mountain applies current meteorological data for the generation of meteorological conditions for predicted future climates in the Yucca Mountain region over the next 10,000 years, fail to acknowledge that atmospheric CO_2 concentrations are increasing at a rate of 1 to 2 ppmv per year, and as a result, the climate states adopted by DOE for the next 10,000 years cannot be justified.

NEV Petition at 92. Nevada asserts that a key forcing function for predicting future climate change is the atmospheric CO_2 concentration. *Id.* at 92. Nevada contends that because DOE failed to acknowledge the increase in CO_2 concentrations, DOE's climate states "for the next 10,000 years cannot be justified." *Id.* Nevada therefore asserts that DOE has failed to comply with Part 63, in particular 10 C.F.R. § 63.305(c).

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-09.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-09 is inadmissible because it fails to provide supporting facts or expert opinions as required by 10 C.F.R. § 2.309(f)(1)(v). To support this contention, Nevada provides two experts who attest to the information in paragraphs 5 and 6. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne: Attachment 15, Affidavit of Jonathan Overpeck.

Nevada asserts that the primary basis for DOE's climate predictions, Forester, et al., fails to consider the affects of insolation and greenhouse gases on climate change, and therefore, "is flawed and untenable." *See* NEV Petition at 84. Nevada refers to two studies to support the assertion "that both insolation and greenhouse gas concentrations are fundamental forcing factors of climate change." *See* NEV Petition at 94. Nevada however, does not explain why or how the referenced studies, which show that insolation and greenhouse gas concentration are forcing factors of change, render Forester, et al. flawed and untenable.

Nor does Nevada explain how DOE's future climate predictions, which are based on the geologic record, would be impacted if these factors had been considered. *See* SAR Section 2.3.1.2.2. For example, Nevada does not assert that if the suggested increase in greenhouse gas concentrations had been considered, that this would cause DOE's models for future climate conditions to exceed conditions represented in the geologic record. Bare assertions of inadequacy cannot support the admission of a contention. *See Fansteel, Inc.* (Muskogee, Oklahoma, Site), CLI-03-13, 58 NRC 195, 203 (2003) (internal citation omitted). Furthermore, the cited references are the result of international collaboration on global climate change processes and are not specific to Yucca Mountain. These references support the premise that CO_2 concentrations affect climate change globally, but offer no support as to the effect at a specific location like Yucca Mountain. Thus, Nevada has not satisfied its obligation to "provide analysis and supporting evidence as to why particular sections of th[e]se documents . . . provide a basis for the contention," i.e., that DOE's climate states are not justified. *Id.* at 204.

Furthermore, Nevada cites internal U.S. Geological Study (contractor to DOE) memoranda to illustrate that the Forester, et al. study received insufficient peer review and asserts that this may be why Forester et al. takes "such a limited and inadequate view of factors that will affect future changes in climate." *See id.* at 94-95 (internal citations omitted). But again, Nevada fails to explain why these memoranda, which contain no mention of climate change, relate to Forester et al.'s failure to consider increasing CO_2 concentrations or renders it inadequate. *See Fansteel*, CLI-03-13, 58 NRC at 203 (internal citation omitted).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna

Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). A "contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed." *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (citing *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), *review declined,* CLI-94-2, 39 NRC 91 (1994)).

Here, Nevada asserts that DOE's climate states for the next 10,000 years cannot be justified because DOE fails to acknowledge increasing concentrations of atmospheric CO_2. NEV Petition at 92. Therefore, Nevada concludes that DOE has not complied with Section 63.305(c) which requires DOE to "vary factors related to . . . climate based on reasonable assumptions consistent with present knowledge of factors that could affect the Yucca Mountain disposal system over the next 10,000 years." *See* NEV Petition at 95.

Contrary to Nevada's assertion, DOE did consider greenhouse gases, including CO_2, in FEP 1.4.01.02.0A - Greenhouse Gas Emissions, which DOE concluded was excluded by regulation. *See* SAR Section 2.2, Table 2.2-1 at 2.2-123. As indicated in the SAR, DOE's technical basis for exclusion by regulation is discussed in "SNL 2008a" *Features, Events, and Processes for the Total System Performance Assessment: Analyses*, ANL-WIS-MD-000027 Rev 00. ACC: DOC.20080307.0003 (LSN No. DEN001584824) at 6-241-242. Nevada does not reference SNL 2008a nor does it challenge DOE's basis for excluding this FEP by regulation. Furthermore, the Commission's regulations require that FEPs that have at least one chance in 10,000 in occurring over 10,000 years be evaluated in detail if "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by its omission. 10 C.F.R. § 63.114(d)-(e). NEV-SAFETY-09 does not present any information that would demonstrate, nor does it argue, that "the magnitude and time of the resulting radiological

exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of these FEPs, as required by 10 C.F.R. § 63.114(e). Thus, Nevada mistakenly asserts that the application does not address relevant issues and therefore does not show a material dispute exists. *See Susquehanna*, LBP-07-10, 66 NRC at 24.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 96, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

NEV-SAFETY-9 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 96. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC

185, 194 (1999). Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 96. Therefore, with respect to this part of the NEV-SAFETY-9 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.2.1.2, 5.1.6.5 and “similar” subsections. NEV Petition at 92. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea

of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-9 should be rejected for failure to comply with 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

NEV-SAFETY-10 – CONSIDERATION OR FORCING FUNCTIONS ON FUTURE CLIMATE PROJECTIONS

> SAR Subsections 5.2.5.3 (and subsections therein) and 5.2.5.4 and similar subsections, ignore basic aspects of climate forcing relevant to the prediction of climate change over the next 10,000 years, and thus conclusions regarding long-term climate projections are inaccurate and incomplete.

NEV Petition at 97. Nevada contends that the climate states adopted by DOE for the next 10,000 years cannot be justified because DOE did not consider changes in variance, climate change on different time scales, and atmospheric circulation alternatives caused by loss of ice, sea level rises, and increasing greenhouse gases. *Id.* Thus, Nevada concludes that SAR subsections 5.2.5.3 and 5.2.5.4 and similar sections do not comply with 10 C.F.R. Part 63.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-10.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A contention should be ruled inadmissible if a petitioner "offer[s] no tangible information, no experts, no substantive affidavits," and only "bare assertions and speculation." *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

To support this contention, Nevada provides two experts who attest to the information in paragraphs 5 and 6. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne: Attachment 15 Affidavit of Jonathan Overpeck.

Here, Nevada alleges that DOE's methodology to assess how climate will change over the next 10,000 years is flawed because it ignores "basic aspects of climate forcing and change." NEV Petition at 98. To support this proposition, Nevada refers to three voluminous reports, ranging from 42 to 1,337 pages. NEV Petition at 98 (internal citation omitted). Although the referenced reports discuss climate change, Nevada has failed to "clearly identify" those portions of the reports on which it intends to rely to support the assertion that DOE's methodology in assessing climate change over the next 10,000 years is flawed. *See Public Serv. Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-89-3, 29 NRC 234, 240-41 (1989). Nevada "may not simply incorporate massive documents by reference as the basis for or as a statement of [its] contentions." *See id.* at 241. Thus, Nevada has failed to satisfy its obligation "to provide analysis and supporting evidence as to why particular sections of th[ese] documents . . . provide a basis for the contention." *See Fansteel,* CLI-03-13, 58 NRC at 204-205 (internal citation omitted).

In addition, Nevada makes a number of assertions regarding alleged omissions/failures in DOE's methodology, all of which, according to Nevada, indicate that future climates at Yucca Mountain over the next 10,000 years could be different from those assumed by DOE. *See* NEV Petition at 100. For example, Nevada argues that DOE underestimated the range of future climate change because it failed to consider increasing greenhouse gases which "could result in major changes in ice sheets and ocean circulation." *See* NEV Petition at 99. In addition, Nevada asserts that DOE failed to consider decadal- to millennial-scale variability and abrupt climate change in their future climate predictions, which Nevada states have been substantial or significant in the past. *See id.* at 99-100. Nevada does not, however, explain how the loss of ice sheets or changes in ocean circulation, decadal- to millennial-scale variability, or abrupt climate change will impact infiltration and climate at Yucca Mountain. Thus, Nevada has not shown that if this information had been considered, how or if it would change DOE's climate predictions. Absent supporting information, Nevada's speculation

cannot support admission of this contention. *See Fansteel*, CLI-03-13, 58 NRC at 203 (internal citation omitted).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.). To satisfy criterion 6, an "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Here, Nevada argues that DOE's conclusions regarding long-term climate projections are inaccurate and incomplete because DOE ignored "basic aspects of climate forcing relevant to the prediction of climate change over the next 10,000 years" and therefore, DOE has failed to comply with 10 C.F.R. § 63.305(c). NEV Petition at 100. Section 63.305(c) requires DOE to vary factors related to climate based on cautious, but reasonable assumptions consistent with present knowledge of facts that could affect the Yucca Mountain disposal system over the next 10,000 years. 10 C.F.R. § 63.305(c). As discussed above under criterion 5, Nevada has not shown or explained why impacts on ocean currents and ice sheets from greenhouse gases, decadal- to millennial-scale variability, or abrupt climate change may have an impact on disposal at Yucca Mountain in the next 10,000 years. Nor has Nevada shown that these considerations would render DOE's predictions of future climate, infiltration, and dose to the RMEI invalid. Thus, Nevada has failed to provide sufficient support to show that its assertion of non-compliance with Section 63.305(c) raises a genuine dispute

regarding a material issue of law or fact. *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada asserts that DOE failed to consider anthropogenic greenhouse gases. *See* NEV Petition at 99. To the contrary, DOE did consider human influences on climate in FEP 1.4.01.00.0A and greenhouse gas emissions in FEP 1.4.01.02.0A both of which DOE excluded by regulation. *See* SAR Section 2.2, Table 2.2-1 at 2.2-220, 2.2-221. The SAR table indicates that DOE's technical basis for exclusion is discussed in "SNL 2008a" *Features, Events, and Processes for the Total System Performance Assessment: Analyses*, ANL-WIS-MD-000027 Rev 00. ACC: DOC.20080307.0003 (LSN No. DEN001584824) at 6-241-242. Nevada does not reference SNL 2008a nor does it challenge DOE's basis for excluding these FEPs. Furthermore, NEV-SAFETY-10 does not present any information that would demonstrate, nor does it argue, that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of these FEPs. *See* 10 C.F.R. § 63.114(e). Thus, Nevada mistakenly asserts that the application does not address relevant issues. *See PPL Susquehanna, LLC* (Susquehanna Steam Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007).

Similarly, Nevada mistakenly asserts that DOE did not consider abrupt climate change in future climate change predictions. *See* NEV Petition at 100. To the contrary, DOE did consider abrupt climate change. As shown in SAR Subsection 2.3.1 at 2.3.1-27 and in "Total System Performance Assessment Model/Analysis for the License Application," SNL, 2008b, MDL-WIS-PA-000005, Rev. 00 ADD 001 (LSN No. DEN001579005), Section 6.3.1.2 at page 6.3.1.5. DOE models use a step-function change in climate state between simulation time steps. Because Nevada does not refer to these models or explain why DOE's treatment of abrupt climate change is inadequate, this assertion fails to satisfy criterion 6. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Also, Nevada's assertion that DOE's conclusions regarding "long-term climate projection

are inaccurate and incomplete" also fails to raise a genuine dispute. *See* NEV Petition at 97. To the extent that Nevada's reference to "long-germ climate projection" is challenging DOE's climate predictions for the post-10,000 year period, Nevada's contention is inadmissible. The NRC's rule regarding radiation protection standards for the post-10,000 year period, which includes parameters for future climate change for this period, is currently pending before the Commission. *See* Implementation of a Dose Standard After 10,000 Years, 70 Fed. Reg. 53,313 (Sept. 8, 2005); SECY-08-0170, Final Rule: 10 CFR Part 63, "Implementation of a Dose Standard After 10,000 Years" (RIN 3150-AH68), (Nov. 4, 2008) (ADAMS Accession No. ML082270760). Therefore, any challenge to DOE's post-10,000 year climate predictions is inadmissible because "Licensing Boards 'should not accept in individual license proceedings contentions which are . . . the subject of general rulemaking by the Commission.'" *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345 (internal citations omitted); *see also Duke Power Co*. (Catawba Nuclear Station, Units 1 & 2), ALAB-813, 22 NRC 59, 86 (1985); *Potomac Elec. Power Co*. (Douglas Point Nuclear Generating Station, Units 1 & 2), ALAB-218, 8 AEC 79, 85 (1974).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 101, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

NEV-SAFETY-10 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 101. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at101. Therefore, with respect to this part of the NEV-SAFETY-10 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

Finally, this contention seeks to raise a dispute with SAR subsection 5.2.5.3 and 5.2.5.4 and “similar” subsections. NEV Petition at 97. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-10 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-11 – HUMAN-INDUCED CLIMATE CHANGES ON PREDICTION OF THE NEXT GLACIAL PERIOD

> SAR Subsection 5.2.5.4 and similar subsections, which state that a cooling trend will be initiated within the first 10,000 years leading to a period of full glacial conditions at about 30,000 years after present, fail to accurately calculate the characteristics of the trend in climate or the timing of the next glacial period because recent studies suggest that, due to human-induced climate changes, it is possible that the Earth will not enter another glacial period for at least 200,000 to 500,000 years, and thus precipitation in excess of that predicted could occur at Yucca Mountain.

NEV Petition at 102. Nevada contends that human-induced effects "will likely be large and long-lived" which "means that cooling to glacial conditions could be deferred by 100,000 years or more into the future." *Id.* Nevada asserts that DOE's SAR fails to comply with Part 63, specifically 10 C.F.R. § 63.305(c) because it fails to consider the suppression of glacial conditions and increased precipitation due to human-induced climate change. *Id.* at 102, 105.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-11.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). Bare assertions and speculation are not sufficient to support the admission of a contention. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

To support NEV-SAFETY-11, Nevada refers to a number of documents and provides affidavits from two experts who attest to the information in Paragraph 5. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne: Attachment 15, Affidavit of Jonathan Overpeck.

In addition, Nevada refers to four studies to illustrate that human-induced impacts may have "large and long-lived" impacts on future climate. *See* NEV Petition at 103-104. Nevada states, contrary to DOE's prediction of a cooling trend within the first 10,000 years, that the scientific community expects a warming trend within the next 10,000 years. *See id.* at 104. Nevada then concludes that this difference in future projected climate trends may have implications for infiltration, EBS performance and radionuclide transport within the next 10,000 years and beyond. *See id*. Nevada does not however, provide any facts or expert opinions to explain why the difference in trends may have implications for infiltration, EBS performance or radionuclide transport. Bare assertions, even by an expert, cannot provide a basis to support admission of this contention. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

Similarly, Nevada contends that there will be more precipitation at Yucca Mountain than is predicted by DOE due to human-induced impacts on climate. NEV Petition at 102. Nevada, however, does not offer any supporting facts or expert opinion to support its proposition that the postulated warming trend will have implications for infiltration at Yucca Mountain. *See id.* at 104. The five articles Nevada refers to discuss anthropogenic carbon dioxide generally and are not specific to future climate at Yucca Mountain. In addition, Nevada's descriptions of the articles focus on predictions regarding anthropogenic carbon dioxide, not on whether this carbon dioxide will impact climate at Yucca Mountain such that there will be an increase in infiltration. *See* NEV Petition at 103-104. Finally, Nevada does not explain how DOE's future climate predictions, which are based on the geologic record, would be impacted if these factors had been considered. *See* SAR Section 2.3.1.2.2. For example, Nevada does not argue that if human-induced impacts had been considered, that this would cause DOE's models for future climate conditions to exceed conditions represented in the geologic record. Thus, Nevada's assertion regarding increased precipitation and implications for infiltration at Yucca Mountain is unsupported and

speculative. *Fansteel*, CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.). To satisfy criterion 6, an "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Nevada's conclusory assertion that SAR Subsection 5.2.5.4 and similar subsections fail to satisfy 10 C.F.R. § 63.305(c) because DOE did not consider recent studies suggesting that human-induced climate change will delay the next glacial period, does not satisfy criterion 6. *See* NEV Petition at 119. Section 63.305(c) requires that DOE vary factors related to climate based on cautious, but reasonable assumptions consistent with present knowledge of facts that could affect the Yucca Mountain disposal system over the next 10,000 years. 10 C.F.R. § 63.305(c). As discussed above, Nevada states, absent a reasoned explanation or supporting facts, that the delay of the next glacial period due to human-induced impacts may affect precipitation at Yucca Mountain. *See* NEV Petition at 104. Similarly, Nevada provides no support for the assertion that this human-induced impact on climate may affect the characteristics of precipitation with implications for infiltration, EBS performance, and radionuclide transport at Yucca Mountain. *See id.* Because Nevada has not provided sufficient information to show that global anthropogenic climate change may impact infiltration, EBS performance, radionuclide transport or

precipitation at Yucca Mountain, Nevada has failed to show that these anthropogenic impacts must be considered in accordance with Section 63.305(c). Thus, Nevada's conclusory assertion of non-compliance with Section 63.305(c) does not raise a genuine dispute regarding a material issue of law or fact. *See Millstone*, CLI-01-24, 54 NRC at 358.

Nevada also asserts that DOE's failed to accurately calculate future climate because recent studies indicate that human-induced climate changes will delay the next glacial period NEV Petition at 102. DOE did, however, consider human influences on climate in FEP 1.4.01.00.0A and greenhouse gas emissions in FEP 1.4.01.02.0A in which DOE asserted both were excluded by regulation. *See* SAR Section 2.2, Table 2.2-1 at 2.2-221. The SAR table indicates that DOE's technical basis for exclusion by regulation is discussed in "SNL 2008a" *Features, Events, and Processes for the Total System Performance Assessment: Analyses*, ANL-WIS-MD-000027 Rev 00. ACC: DOC.20080307.0003 (LSN No. DEN001584824) at 6-241-242. Nevada does not reference SNL 2008a nor does it challenge DOE's basis for excluding these FEPs. Furthermore, NEV-SAFETY-11 does not present any information that would demonstrate, nor does it argue, that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of these FEPs, as required by 10 C.F.R. § 63.114(e). Thus, Nevada mistakenly asserts that the application does not address relevant issues. *See Susquehanna*, LBP-07-10, 66 NRC at 24.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 105, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203

(internal citation omitted).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 105, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

NEV-SAFETY-11 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 105. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the

contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. *See* NEV Petition at 105. Therefore, with respect to this part of the NEV-SAFETY-11 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 5.2.5.4 and “similar” subsections. NEV Petition at 102. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the foregoing reasons, NEV-SAFETY-11 should be rejected.

NEV-SAFETY-12 – PROJECTIONS OF FUTURE WETTER CLIMATE CONDITIONS

> SAR Subsection 2.3.1.2.3.1.2 at 2.3.1-27 through 2.3.1-31, and similar subsections, which define the Analogue Meteorological Stations used for the Yucca Mountain climate forecast for the next 10,000 years, fail to account for the significantly greater summer monsoon rainfall amounts that could occur as a result of continued global warming.

NEV Petition at 107. Nevada asserts that "[c]limate modeling indicates that continued global warming could lead to greater summer monsoon rainfall at Yucca Mountain over the next 10,000 years or more than is associated with the monsoon meteorological analog sites in New Mexico and Arizona." *Id*. Nevada contends that because DOE failed to consider this information, the SAR does not comply with 10 C.F.R. Part 63 and 40 C.F.R. Part 197. *Id.* at 107-108.

Staff Response

The Staff opposes admission of NEV-SAFETY-12 for the reasons set forth below.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.). To satisfy criterion 6, an "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). Here, Nevada contends that DOE failed "to account for greater monsoon rainfall that could occur

as a result of continued global warming." NEV Petition at 107. For the reasons set forth below, this contention fails to satisfy criterion 6.

Nevada incorrectly asserts that DOE failed "to consider not only that global warming is likely to be a factor but that it could be a factor for thousands of years to come." *Id.* at 100 (internal citation omitted). DOE considered human influences on climate in FEP 1.4.01.00.0A and greenhouse gas emissions in FEP 1.4.01.02.0A, both of which DOE concluded were excluded by regulation. *See* SAR Section 2.2, Table 2.2-1 at 2.2-221. As indicated in the SAR, DOE's technical basis for exclusion by regulation is discussed in "SNL 2008a" *Features, Events, and Processes for the Total System Performance Assessment: Analyses*, ANL-WIS-MD-000027 Rev 00. ACC: DOC.20080307.0003 (LSN No. DEN001584824) at 6-241-242. Nevada does not reference SNL 2008a nor does it challenge DOE's basis for excluding these FEPs by regulation. Furthermore, NEV-SAFETY-12 does not present any information that would demonstrate, nor does it argue, that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of these FEPs, as required by 10 C.F.R. § 63.114(e). Thus, Nevada mistakenly asserts that the application does not address relevant issues and therefore does not show a material dispute exists. *See Susquehanna*, LBP-07-10, 66 NRC at 24.

Nevada's assertion that DOE's failure to account for greater monsoon rainfall that could occur as a result of global warming renders the application in noncompliance with Part 63, in particular 10 C.F.R. §§ 63.305(c) 63.303 and 63.113, also does not raise a genuine dispute. *See* NEV Petition at 107-108. Section 63.305(c) requires that DOE vary factors related to climate based on cautious, but reasonable assumptions consistent with present knowledge of facts that could affect the Yucca Mountain disposal system over the next 10,000 years. *See* NEV Petition at 111. Nevada argues that, based on a small subset of continental-scale simulations for future climate in North America under continued global warming and

paleoclimatic evidence from the Yucca Mountain region it is possible that "summer monsoonal rainfall could be significantly greater, and more intense, than assumed by DOE." NEV Petition at 110. Out of the twenty-two climate models Nevada references, Nevada does not specify exactly how many "simulated an increase in summertime (monsoonal) rainfall in the Southwest . . . ." *See id.* at 108. Rather, Nevada states that "more than one" indicated an increase in summertime rainfall and Nevada identifies only one that simulated an increase to at least double amounts of rainfall. *See id.* Nevada does not, however, explain how this small sub-set of at best regional-scale predictions translate to a specific climate state at Yucca Mountain, the impact that this postulated increase in summer monsoonal rainfalls could have on infiltration in the Yucca Mountain region, or – more importantly – on release of radionuclides from disposal at Yucca Mountain specifically in the next 10,000 years, such that it would render DOE's predictions for future climate during the next 10,000 years inadequate. Because Nevada has failed to show or even assert any connection between the possibility for greater monsoonal rainfalls and the impact on disposal at Yucca Mountain, it has not shown that such factors must be considered as "cautious, but reasonable assumptions consistent with present knowledge of factors that could affect the Yucca Mountain disposal system", in accordance with Section 63.305(c). 10 C.F.R. § 63.305(c). Thus, Nevada's assertion of non-compliance with Section 63.305(c) does not raise a genuine dispute regarding a material issue of law or fact. *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada refers to available paleoclimate data to support its position that there may be wetter future climates than predicted by DOE in the SAR. NEV Petition at 109. DOE also used paleoclimate data to predict climate over the next 10,000 years. *See e.g.,* SAR Sections 2.3.1.2.1. & 2.3.1.2.2. Nevada does acknowledge that DOE's future climate predictions are based on paleoclimate data but Nevada does not explain why its reliance on paleoclimate data renders different results than DOE's, and therefore fails to show a genuine dispute exists (*see* NEV Petition at 109-110). *See Susquehanna*, 65 NRC at 316.

Finally, while Nevada has asserted that DOE's failure to account for the possibility of greater monsoonal rainfall amounts caused by global warming renders the SAR in noncompliance with the post-closure performance objectives in 10 C.F.R. § 63.113 and the standards in § 63.303, Nevada has not provided any factual information or a reasoned expert opinion to explain why or how greater monsoon rainfall could affect the release of radionuclides such that regulatory limits may be exceeded. *See* NEV Petition at 107. Because Nevada simply makes a conclusory assertion of noncompliance, it has failed to provide enough information to show a genuine dispute exists with respect to a material issue of law or fact. *See Millstone,* CLI-01-24, 54 NRC at 358.

Next, Nevada's assertion that DOE's failure to account for greater monsoonal rainfall amounts caused by global warming renders DOE in non-compliance with 40 C.F.R. Part 197 does not raise a genuine dispute regarding a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). NEV Petition at 108. Nevada does not discuss or provide support for the assertion of post-10,000 year noncompliance nor does Nevada show that consideration of impacts on climate caused by global warming is required during the post-10,000 year period.

On October 15, 2008 EPA issued its "Public Health and Environmental Radiation Protection Standards for Yucca Mountain for the post-10,000 Year Period." *See* 73 Fed. Reg. 61,256 (Oct. 15, 2008) (final rulemaking for 40 CFR Part 197). This rule limits DOE's analysis of climate change during the post-10,000 year period "to the effects of increased water flow through the repository as a result of climate change, and the resulting transport and release of radionuclides to the accessible environment." 40 C.F.R. § 197.36(c)(2). In promulgating this rule, the EPA recognized that considering climate fluctuations due to anthropogenic changes and using this to predict future climate with confidence, would be unrealistic. 73 Fed. Reg. at 61,285. Therefore, EPA reasoned "that the understanding of past climate fluctuations and their potential effects on the Yucca Mountain hydrologic system is valuable information and should be applied to define the climate-related parameter

values." *Id.* Thus, EPA's rule states that "[t]he nature and degree of climate change may be represented by constant climate conditions" during the post 10,000 year period. 40 C.F.R. § 197.36(c)(2). 40 C.F.R. Part 197 states that the NRC shall specify values, such as temperature, precipitation, or infiltration rate of water, to be used to represent climate change during this period. *Id.*

The NRC, in accordance with the Energy Policy Act of 1992, must promulgate a final rule regarding radiation protection standards for the post-10,000 year period that is consistent with the EPA's regulations in 40 C.F.R. Part 197. The NRC's corresponding rule is pending final Commission approval. *See* Implementation of a Dose Standard After 10,000 Years, 70 Fed. Reg. 53,313 (Sept. 8, 2005); SECY-08-0170, Final Rule: 10 CFR Part 63, "Implementation of a Dose Standard After 10,000 Years" (RIN 3150-AH68), (Nov. 4, 2008) (ADAMS Accession No. ML082270760). To the extent that NEV-SAFETY-12 challenges this pending rulemaking, this contention is inadmissible because "Licensing Boards 'should not accept in individual license proceedings contentions which are . . . the subject of general rulemaking by the Commission.'" *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345 (internal citations omitted); *see also Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 2), ALAB-78, 5 AEC 319 (1972) (stating "no challenge of any kind is permitted. . . as to a regulation that is the subject of ongoing rulemaking.").

The pending rule before the Commission includes parameters for future climate change, all of which are based on paleoclimate data and states that DOE may represent the nature and degree of climate change by "constant climate conditions" for the period from 10,000 years after disposal through geologic stability. *See* 70 Fed. Reg. at 53,316, 53,319. As stated in the Statement of Considerations for the pending rule, the ranges of values specified by the NRC for deep percolation rates include consequences of future climate change, which the NRC believes "captures the range of temporal variability, uncertainty, and magnitude of

deep percolation expected as a consequence of future climate change." SECY-08-0170, Enclosure 1 (Federal Register Notice ADAMS Accession No. ML082280158) at 35. 10 C.F.R. § 63.342(c)(2) (Proposed) requires DOE to use these values when assessing the effects of future climate change on disposal at Yucca Mountain. DOE is not required to separately consider anthropogenic effects because, as stated by the NRC, anthropogenic effects are captured by the long-term average infiltration values specified in the draft final rule. *See id.* at 35. Thus, Nevada's assertion that DOE's climate considerations for the post-10,000 year period are flawed because they do not account for greater monsoon rainfall that could occur as a result of global warming is not supported and does not show a genuine dispute. *See* 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 111, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

NEV-SAFETY-12 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 111. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi)

requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. *See* NEV Petition at 111. Therefore, with respect to this part of the NEV-SAFETY-12 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.1.2.3.1.2 at 2.3.1-27 through 2.3.1-31, and similar subsections. NEV Petition at 107. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory

Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-12 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-13 – FUTURE CLIMATE PROJECTIONS NEED TO INCLUDE EXTREME PRECIPITATION EVENTS

> SAR Subsection 2.3.1.2.3.1.2 and similar subsections, which define the climate forecast at Yucca Mountain for the next 10,000 years, fail to accurately account for the more frequent intense rainfall or for the large storm-related rainfall events that could occur as a result of continued global warming.

NEV Petition at 113. Nevada contends that as a result of global warming, there could be more frequent, intense rainfall events and more large moisture-laden remnant tropical storms in the next 10,000 years or more at Yucca Mountain. *Id.* Nevada argues that because DOE does not accurately account for such events, SAR Subsection 2.3.1.2.3.1.2 and similar subsections fail to comply with Part 63, in particular Section 63.305(c), and 40 C.F.R. Part 197. *Id.* at 114, 117.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-13.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A contention should be ruled inadmissible if a petitioner "offer[s] no tangible information, no experts, no substantive affidavits," and only "bare assertions and speculation." *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

To support this contention, two experts attest to the information in paragraphs 5 and 6. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne (adopting information in paragraphs 5 and 6); Attachment 15, Affidavit of Jonathan Overpeck (adopting information in

paragraph 5).

In addition, to support its assertion that as global warming continues, the intensity of rainfall will increase because the atmosphere will have greater moisture-holding capacity, Nevada refers to five reports. *See* NEV Petition at 114-15 (internal citations to reports omitted). Nevada does not however, indicate whether any of these reports include information specific to Yucca Mountain nor does Nevada indicate how far into the future the reports project, e.g., during the next 10,000 years and/or beyond. *See id.* Despite this, Nevada concludes, without further factual support or explanation from an expert, that because anthropogenic carbon dioxide may remain in the atmosphere for thousands of years, "greater rainfall intensity is possible at Yucca Mountain during and beyond the next 10,000 years." NEV Petition at 115. Although Nevada refers to these regional- to continental-scale simulation reports to support its conclusion that there will be greater rainfall at Yucca Mountain, it does not set forth an explanation of the report's significance with regard to impacts at Yucca Mountain within the next 10,000 years and beyond. Without this explanation, it is not clear why or how these reports apply to precipitation at Yucca Mountain in the next 10,000 years or beyond. *See Fansteel,* CLI-03-13, 58 NRC at 204-205.

Similarly, Nevada refers to three of the above five reports to support the assertion that continued global warming may "increase the strength and intensity of tropical storms and hurricanes." NEV Petition at 115 (internal citations omitted). Based on this assertion, Nevada posits that there will be more rain from future storms, that these storms may reach Yucca Mountain with greater frequency, and that storms lasting up to a week may occur several times a year. *Id.* Nevada then concludes that greater rainfalls are possible at Yucca Mountain within the next 10,000 years and beyond due to anthropogenic carbon dioxide emissions. *Id.* at 116. Other than the three reports referenced for the proposition that global warming may increase the intensity of storms in general, no other reports or factual information are included to support Nevada's assertions regarding, specifically, the storm

intensity and frequency at Yucca Mountain. *See id.* at 115-116. Furthermore, the experts relied upon by Nevada do not provide a reasoned explanation as to why or how these reports indicate that such events will impact infiltration at Yucca Mountain. Thus, absent tangible factual information or a reasoned expert opinion, Nevada has not supported its assertion that greater rainfall is possible at Yucca Mountain in the next 10,000 years and beyond. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (experts cannot "merely state a conclusion without providing a reasoned basis or explanation . . . .").

Finally, Nevada asserts that DOE's conclusions based on analog sites and expanded standard deviations are flawed because (1) climate dynamics for analog sites are not the same as at Yucca Mountain, e.g., there could theoretically be flooding and storms at Yucca Mountain; and (2) the paleoclimate record, which is where the largest extremes are usually found, is sparse for Yucca Mountain. *See* NEV Petition at 117. Other than simply asserting that the use of analog sites and expanded standard deviations may not be appropriate, Nevada fails to provide any explanation of the effect these flaws may have on DOE's analyses. Such unsupported assertions, even if made by an expert, cannot support admission of this contention. *See USEC,* CLI-06-10, 63 NRC at 472; *Fansteel,* CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.). To satisfy criterion 6, an "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone

Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Here, Nevada asserts that because DOE failed to consider more frequent intense rainfall events or large-storm rainfall as a result of continued global warming in the next 10,000 years and beyond, it has failed to comply with Part 63, and 40 C.F.R. Part 197. NEV Petition at 114, 117. In addition, Nevada asserts that there are problems with unspecified "similar" subsections in the SAR. *Id.* at 116, 117. As discussed below, NEV-SAFETY-13 fails to provide sufficient information to show a genuine dispute exists with regard to these three assertions as required by Section 2.309(f)(1)(vi).

Nevada asserts that DOE failed to consider that "anthropogenic carbon emissions may remain in the atmosphere for thousands, tens of thousands, and even hundreds of thousand of years" and therefore greater rainfall is possible in the next 10,000 years and beyond at Yucca Mountain. *See* NEV Petition at 115. Contrary to Nevada's assertion, DOE did consider human influences on climate in FEP 1.4.01.00.0A and greenhouse gas emissions in FEP 1.4.01.02.0A,and concluded that were excluded by regulation. *See* SAR Section 2.2, Table 2.2-1 at 2.2-221. The SAR table indicates that DOE's technical basis for exclusion by regulation is discussed in "SNL 2008a" *Features, Events, and Processes for the Total System Performance Assessment: Analyses*, ANL-WIS-MD-000027 Rev 00. ACC: DOC.20080307.0003 (LSN No. DEN001584824). at 6-241-242. Nevada does not reference SNL 2008a nor does it challenge DOE's basis for excluding these FEPs by regulation. Furthermore, NEV-SAFETY-13 does not present any information that would demonstrate, nor does it argue, that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of these FEPs, as required by 10 C.F.R. § 63.114(e). Thus, Nevada mistakenly asserts that the application does not address relevant issues. *See Susquehanna*, LBP-07-10, 66 NRC at 24.

With respect to 10 C.F.R. § 63.305(c), Nevada argues noncompliance because DOE has failed to accurately account for more frequent intense rainfall or large storms that could occur as a result of global warming. NEV Petition at 117. Section 63.305(c) requires that DOE vary factors related to climate based on cautious, but reasonable assumptions consistent with present knowledge of facts that could affect the Yucca Mountain disposal system over the next 10,000 years. 10 C.F.R. § 63.305(c). As discussed above under criterion 5, Nevada has not shown with supporting facts or a reasoned explanation that more intense rainfalls or storms caused by global warming may have an impact on disposal at Yucca Mountain in the next 10,000 years and therefore must be considered under Section 63.305(c). In addition, Nevada does not assert that these considerations would render DOE's predictions of future climate, infiltration, and dose to the RMEI invalid. Thus, Nevada has failed to provide sufficient support to show that its assertion of non-compliance with Section 63.305(c) raises a genuine dispute regarding a material issue of law or fact. *See Millstone*, CLI-01-24, 54 NRC at 358.

While Nevada has asserted that DOE's failure to account for the possibility of greater monsoonal rainfall amounts caused by global warming renders the SAR in noncompliance with the post-closure performance objectives in 10 C.F.R. § 63.113 and the Health and Environmental Standards in Section 63.303, Nevada has not provided any factual information or a reasoned expert opinion to explain why or how greater monsoon rainfall would render DOE's infiltration predictions inadequate or how this could affect the release of radionuclides such that regulatory limits may be exceeded. *See* NEV Petition at 107. Because Nevada simply makes a conclusory assertion of noncompliance, it has failed to provide enough information to show a genuine dispute exists with respect to a material issue of law or fact. *See Millstone,* CLI-01-24, 54 NRC at 358.

In addition, Nevada's assertions regarding DOE's failure to consider the impacts of more intense rainfall and storms due to global warming and noncompliance with 40 C.F.R.

Part 197 also does not raise a genuine dispute regarding a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). Nevada has not shown that consideration of these impacts is required for the post-10,000 year period.

On October 15, 2008 EPA issued its "Public Health and Environmental Radiation Protection Standards for Yucca Mountain for the post-10,000 Year Period." *See* 73 Fed. Reg. 61,256 (Oct. 15, 2008) (final rulemaking for 40 CFR Part 197). This rule limits DOE's analysis of climate change during the post-10,000 year period "to the effects of increased water flow through the repository as a result of climate change, and the resulting transport and release of radionuclides to the accessible environment." 40 C.F.R. § 197.36(c)(2). In promulgating this rule, the EPA recognized that considering climate fluctuations due to anthropogenic changes and using this to predict future climate with confidence, would be unrealistic. 73 Fed. Reg. at 61,285. Therefore, EPA reasoned "that the understanding of past climate fluctuations and their potential effects on the Yucca Mountain hydrologic system is valuable information and should be applied to define the climate-related parameter values." *Id.* Thus, EPA's rule states that "[t]he nature and degree of climate change may be represented by constant climate conditions" during the post 10,000 year period. 40 C.F.R. § 197.36(c)(2). 40 C.F.R. Part 197 states that the NRC shall specify values, such as temperature, precipitation, or infiltration rate of water, to be used to represent climate change during this period. *Id.*

The NRC, in accordance with the Energy Policy Act of 1992, must promulgate a final rule regarding radiation protection standards for the post-10,000 year period that is consistent with the EPA's regulations in 40 C.F.R. Part 197. The NRC's corresponding rule is pending final Commission approval. *See* Implementation of a Dose Standard After 10,000 Years, 70 Fed. Reg. 53,313 (Sept. 8, 2005); SECY-08-0170, Final Rule: 10 CFR Part 63, "Implementation of a Dose Standard After 10,000 Years" (RIN 3150-AH68), (Nov. 4, 2008) (ADAMS Accession No. ML082270760). To the extent that NEV-SAFETY-13 challenges this

pending rulemaking, this contention is inadmissible because "Licensing Boards 'should not accept in individual license proceedings contentions which are . . . the subject of general rulemaking by the Commission.'" *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345 (internal citations omitted); *see also Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 2), ALAB-78, 5 AEC 319 (1972) (stating "no challenge of any kind is permitted. . . as to a regulation that is the subject of ongoing rulemaking.").

The pending rule before the Commission includes parameters for future climate change, all of which are based on paleoclimate data and states that DOE may represent the nature and degree of climate change by "constant climate conditions" for the period from 10,000 years after disposal through geologic stability. *See* 70 Fed. Reg. at 53,316, 53,319. As stated in the Statement of Considerations for the pending rule, the ranges of values specified by the NRC for deep percolation rates include consequences of future climate change, which the NRC believes "captures the range of temporal variability, uncertainty, and magnitude of deep percolation expected as a consequence of future climate change." SECY-08-0170, Enclosure 1 (Federal Register Notice ADAMS Accession No. ML082280158) at 35.
10 C.F.R. § 63.342(c)(2) (Proposed) requires DOE to use these values when assessing the effects of future climate change on disposal at Yucca Mountain. DOE is not required to separately consider anthropogenic effects because, as stated by the NRC, anthropogenic effects are captured by the long-term average infiltration values specified in the draft final rule. *See id.* at 35. Thus, Nevada's assertion that DOE's climate considerations for the post-10,000 year period are flawed because they do not account for extreme precipitation events that could occur as a result of global warming is not supported and does not show a genuine dispute. *See* 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's

dose standards" could only be performed by DOE, *see* NEV Petition at 117, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

NEV-SAFETY-13 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 117. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this

one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 117. Therefore, with respect to this part of the NEV-SAFETY-13, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.1.2.3.1.2 and "similar" subsections. NEV Petition at 113. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-13 should be rejected.

NEV-SAFETY-15 – ALTERNATIVE PRECIPITATION MODELS AND WEATHER VARIABLES

> The precipitation and weather components of the net infiltration model described in SAR Subsection 2.3.1.3.2 are not sufficient because alternative conceptual models exist that are consistent with the available data and with current scientific understanding, and by neglecting these, DOE has substantially underestimated the uncertainty inherent in the results of the performance assessment.

NEV Petition at 125. Nevada contends that existing alternative conceptual models have not been considered despite availability of better techniques. *See id.* Thus, Nevada concludes that SAR Subsection 2.3.1.3.2 fails to comply with 10 C.F.R. § 63.114(c).

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-15.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A contention should be ruled inadmissible if a petitioner "offer[s] no tangible information, no experts, no substantive affidavits," and only "bare assertions and speculation." *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

Here, Nevada contends that DOE's SAR is insufficient because it fails to consider existing alternative conceptual models that are consistent with available data and current scientific understanding. NEV Petition at 125. Nevada does not, however, identify, reference, or explain via expert opinion, tangible information, any specific existing alternative conceptual model that has DOE failed to consider. *See Fansteel*, CLI-03-13, 58 NRC at 203

(internal citation omitted). For example, Nevada asserts that advanced precipitation models are available" that could be used to overcome alleged deficiencies but Nevada does not point to any particular model that should be have been considered as "an alternative conceptual model" that is "consistent with available data and with current scientific understanding" nor does Nevada show that "by neglecting" one of models, DOE "substantially underestimated" uncertainty. *See* NEV Petition at 125. Instead, Nevada claims a number of deficiencies with DOE's SAR. Nevada argues that DOE's model uses an oversimplified treatment of spatial variability, but Nevada does not demonstrate that any existing model would have performed better, nor defined the metric by which it would judge efficacy. *See id.* at 127-128. Similarly, Nevada asserts that DOE's model is flawed because it underestimates the intensity of short-duration high-intensity rainfall events and makes simplifying assumptions for several other variables. *See id.* at 128. Again, Nevada does not specifically point to any existing model which should have been considered. While Nevada refers to a number of studies to support its assertions that DOE's model is flawed, Nevada fails to "provide analysis and supporting evidence as to why particular sections" of the referenced studies provides a basis for its assertion that DOE underestimated uncertainty because it failed to consider available alternative conceptual models. *See Fansteel,* CLI-03-13, 58 NRC at 204 (internal citation omitted). Thus, Nevada's bare assertion that DOE's SAR is deficient because it fails to consider existing alternative conceptual models cannot support the admission of this contention. *See Fansteel*, CLI-03-13, 58 NRC at 203 (internal citation omitted).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application). An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Here, Nevada asserts that SAR subsection 2.3.1.3.2 fails to comply with 10 C.F.R. § 63.114(c) because DOE failed to consider other existing alternative conceptual models. NEV Petition at 125. Section 63.114(c) requires that DOE "[c]onsider alternative conceptual models of features and processes that are consistent with available data and current scientific understanding and evaluate the effects that alternative conceptual models have on the performance of the geologic repository." 10 C.F.R. § 63.114(c). As described above under criterion 5, Nevada does not describe any alterative conceptual models that are in existence and are consistent with available data and current scientific understanding which DOE failed to consider. Nevada has not provided sufficient information to support the assertion that DOE's SAR does not consider existing alternative conceptual models and therefore does not comply with Section 63.114(c). Thus, Nevada's assertion claiming noncompliance with Section 63.114(c) due to the failure to consider unspecified existing models does not show a genuine dispute of law or fact. *See Millstone*, CLI-01-24, 54 NRC at 358 (internal citation omitted). Consequently, NEV-SAFETY-15 does not satisfy criterion 6.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 129, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203

(internal citation omitted).

NEV-SAFETY-15 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 129. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See. Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 129. Therefore, with respect to this part of the NEV-SAFETY-15 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

Therefore, for the reasons set forth above, NEV-SAFETY-15 is inadmissible for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-16 – QUALIFICATION OF CLIMATE AND INFILTRATION MODELS

> SAR Subsection 2.3.1, which describes the analysis and modeling underpinning the climate and infiltration components of the TSPA, fails to provide details of data qualification procedures used in this work and fails to identify any formal peer reviews used in its preparation.

NEV Petition at 130. Nevada asserts that the SAR does not include "a description of the quality assurance program applied to acquisition, control and analysis of samples and data." *Id.* In addition, Nevada alleges that DOE's failure to include formal peer reviews constitutes a failure to apply quality control procedures. *Id.* at 131. Thus, Nevada contends that DOE's LA is materially incomplete and fails to comply with 10 C.F.R. §§ 63.21(c)(20) and 63.142(a). *Id.* at 131-32.

Staff Response

The Staff opposes admission of NEV-SAFETY-16 because, as discussed below, it fails to satisfy 10 C.F.R. § 2.309(f)(1)(iv) and (vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

The Commission's regulations at 10 C.F.R. § 2.309(f)(1)(iv) require that an issue must be material to the findings the Commission must make. "Any issues of law or fact raised in a contention must be material to the grant or denial of the license application in question, i.e., they must make a difference in the outcome of the licensing proceeding so as to entitle the petitioner to cognizable relief…This requirement of materiality embodies the notion that an alleged error or deficiency regarding a proposed licensing action must have some significance relative to the agency's general responsibility and authority to protect the public health and safety and the environment." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179-80 (1998) ("*PFS")*.

With respect to a quality assurance program, DOE is required to include a "description of the quality assurance program to be applied to all structures, systems, and components

important to safety and to the engineered and natural barriers important to waste isolation." 10 C.F.R. § 63.21(c)(20). This requirement applies prospectively to DOE's subsequent activities in the event a construction authorization is granted. This description must discuss how the applicable quality assurance requirements in Section 63.142 *will* be satisfied. *Id; see also* Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, 66 Fed. Reg. 55,732, 55,764-765 (Nov. 2, 2001) (stating that the quality assurance "program description is required to specifically describe how the requirements of § 63.142 *will be satisfied.*") (emphasis added). Section 63.142 describes the quality assurance criteria.

In addition, nothing in Sections 63.21(c)(20) or 63.142 state that peer reviews must be used in order "to apply appropriate quality control procedures to the analysis of data." *See* NEV Petition at 131. In addition, Nevada has not pointed to any regulatory requirement to support its assertion that failure to conduct formal peer reviews "constitutes a failure to apply appropriate quality control procedures . . . ." *See id.* As Nevada notes, NUREG-1804, which is not binding legal authority, states in Section 2.2.1.3.5.3 at 2.2-61 that "Guidance in NUREG–1297 and NUREG–1298 (Altman, et al., 1988a,b), or other acceptable approaches" should be followed for peer reviews and data qualification. *See Int'l Uranium (USA) Corp.* (Request for Materials License Amendment), CLI-00-1, 51 NRC 9, 19 (2000) (stating that NUREGS do not have "the binding effect of regulations") (internal citation omitted). In accordance with this guidance, DOE describes its project procedures governing data qualification as consistent with NUREG-1298. SAR at 2.3.1-1.

Furthermore, Nevada has not alleged that the exclusion of formal peer reviews to support development of models and analyses has significance relative to the NRC's licensing responsibilities. *See PFS,* LBP-98-7, 47 NRC at 179-80. Because DOE is not required by regulation to conduct formal peer reviews in order to apply appropriate quality control procedures, Nevada's alleged omission regarding such reviews cannot be material to the

grant or denial of a license application. *See id.* Therefore, challenges regarding the lack of formal peer reviews should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-16 fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). Nevada argues that DOE failed to provide details of data qualification procedures used for work described in SAR Subsection 2.3.1. *See* NEV Petition at 130. Nevada has failed to show a genuine dispute exists on a material issue of law or fact because DOE has in fact provided a description of its quality assurance program and its reliance on the Quality Assurance Requirements and Description ("QARD") in SAR Section 5.1. Nevada quotes SAR Section 2.3.1 at 2.3.1-1, which states that "scientific analyses, model development, and data qualification activities were conducted in accordance with project procedures that comply with the Quality Assurance Program." *See* NEV Petition at 131. However, Nevada fails to note that the Quality Assurance Program is described in SAR Section 5.1. *See* SAR at 5.1-1. Thus, Nevada "mistakenly asserts the application does not address a relevant issue[] . . . ." *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1 (2007) (citing *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), *review declined,* CLI-94-2, 39 NRC 91 (1994)). Therefore, Nevada's challenge regarding the description of DOE's quality assurance program does not raise a material of issue of law or fact as required by 10 C.F.R. § 2.309(f)(vi).

NEV-SAFETY-17 – CALIBRATION AND SIMULATION OF PRECIPITATION MODEL

> The procedures used to calibrate and simulate the precipitation component of the precipitation model, as referenced in SAR Subsection 2.3.1.3.2, are non-standard, not generally accepted and, in the case of the simulation procedure as described, incorrect.

NEV Petition at 133. Nevada contends that DOE's procedures for calibrating the precipitation component of the net infiltration model and for sampling from a lognormal distribution are not generally accepted. *Id.* In addition, Nevada asserts that DOE's simulation methodology is incorrect. *See id.* at 133, 135. Therefore, Nevada contends that DOE's procedures to calibrate and simulate the precipitation component of the precipitation model do not comply with10 C.F.R. § 63.21(c)(9) and (c)(15). *See id.* at 136.

Section 63.21(c)(9) requires that the application include an assessment to determine the degree to which features, events and processes that are expected to materially affect compliance with § 63.113 have been characterized. Section 63.21(c)(15) requires an explanation of measures used to support the models used to provide the information in (c)(9).

Staff Response

As discussed below, the Staff opposes admission of NEV-SAFETY-17 because Nevada has failed to support its position that DOE's procedures are non-standard, generally not accepted and incorrect, and therefore, has failed to support its assertion that DOE has not complied with Part 63. *See* 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A contention supported by bare assertions

and speculation is inadmissible. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Even if a contention references an expert opinion, that expert must provide the basis or explanation for his/her opinion. *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) ("an expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate.") (internal citations omitted).

NEV-SAFETY-17 fails to comply with 10 C.F.R. § 2.309(f)(1)(v) because Nevada makes a number of bare and speculative assertions absent factual support, a reasoned basis or explanation. Nevada contends that DOE's procedures to calibrate and simulate the precipitation component of its precipitation model are "non-standard" and "not generally accepted." NEV Petition at 133. Nevada asserts that DOE's calibration procedure is flawed because there are "more widely accepted superior procedures" and because it "is complicated by the amplitude-phase parameterization of the seasonal cycle." *Id.* at 134. Furthermore, Nevada asserts that DOE's algorithm for simulating precipitation is incorrect and does not use "generally accepted techniques." *Id.* Nevada, however, provides no references or reasoned explanation for what constitutes a "more widely" or "generally" accepted technique, or a "standard" or "correct" procedure. *See id.* The only reference to an "accepted procedure" is the assertion that the "accepted" calibration procedure is to "re-parameterize in terms of sine and cosine components." *See id.* at 134-135. Nevada however, provides no supporting references, reasoned explanation, or basis to explain why this is an "accepted" procedure. *See id*. Moreover, Nevada fails to show that DOE's procedures, even if there were more superior procedures, are flawed. Such bare assertions and speculation cannot support the admission of this contention. *Fansteel*, CLI-03-13, 58 NRC at 203 (2003) (internal citation omitted).

Absent a basis for what is a standard or accepted procedure, speculation regarding impacts on the TSPA if a "standard procedure" had been used, are meaningless (NEV

Petition at 135). *See Fansteel*, CLI-03-13, 58 NRC at 203 (2003) (internal citation omitted). Likewise, absent an explanation for what is a "generally accepted" procedure, the bare assertion that DOE's implementation of the model is "not generally accepted" cannot provide a basis for this contention *(*NEV Petition at 135). *See Fansteel*, CLI-03-13, 58 NRC at 203 (2003) (internal citation omitted).

Finally, Nevada asserts that DOE's method for using a lognormal distribution is "not generally accepted," slow, and may be "relatively inaccurate" because it requires inversion. *See* NEV Petition at 135*.* However, instead of providing factual support or fully explaining the bases for these assertions, Nevada offers an alternative method which it describes as "modern." *See id*. But, Nevada does not state that this "modern method" is "standard" or "generally accepted." *See id*. Furthermore, Nevada does not suggest the impact, if any, on DOE's infiltration results if this "modern method" was implemented. *See id.* Bare and speculative assertions regarding the use and impacts of this "modern model" or the alleged standard and generally accepted procedures discussed above, even by an expert, cannot support the admission of a contention absent a reasoned basis or explanation. *See USEC Inc.*, CLI-06-10, 63 NRC at 471. Thus, Nevada has failed to provide the necessary supporting facts or expert opinions to support the assertion that DOE's procedures are non-standard, not accepted, and incorrect, and fail to comply with 10 C.F.R. § 63.21(c)(9) and (c)(15). *See* NEV Petition at 133, 136. Consequently, NEV-SAFETY-17 is inadmissible. *See* 10 C.F.R. § 2.309(f)(1)(v).

NEV-SAFETY-18 – USE OF CLIMATE DATA FROM THE ANALOG SITES

> SAR Subsection 2.3.1.2.3 and similar subsections, which describe the use of analog sites to represent future climate states, make inappropriate use of information from the analog sites.

NEV Petition at 137. Nevada contends that DOE has inappropriately pooled information from several analog sites "[t]o support the modeling of net infiltration for each future climate scenario in the TSPA. . . . ." *See id.* at 137. Nevada asserts this pooling of information is inappropriate because the result "cannot be considered to correspond to any single physically plausible climate state. . . ." *Id.* Thus, Nevada argues that SAR Subsection 2.3.1.2.3 and similar sections, do not comply with 10 C.F.R. §§ 63.21(c)(15) and 63.114(b).

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-18.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

To support this contention, Nevada provides affidavits of three experts. *See* NEV Petition, Attachment 13, Affidavit of Howard S. Wheater; Attachment 15, Affidavit of Jonathan Overpeck; and Attachment 19, Affidavit of Richard E. Chandler.

Here, Nevada contends that DOE inappropriately pools information from analog sites to represent future climate states. NEV Petition at 137. Nevada argues this is inappropriate

because the sites cannot all represent the same climate regime and the results do not "correspond to physically plausible climate states." *See id.* Nevada references the SAR and one DOE LSN document to illustrate differences in model parameters, and states that based on this information, sites chosen "cannot possibly represent the same climate regime." *See id.* (citing SAR at 2.3.1-41 and DEN001575070, Figures 7.1.1.1-5[a] and 7.1.1.1-6[a]). Nevada, however, does not define or provide examples of "physically plausible climate state[s]." *See id.* In addition, Nevada does not acknowledge that DOE's pooled sites were not intended to represent actual climate states. Rather, as stated in the SAR, DOE pooled this data in an effort to bound uncertainties. SAR Section 2.3.1.2.3.1.2. Nevada does not explain why the methodology for representing seasonality would be valid only if all of the sites represented the same climate states nor does Nevada explain why analog-sites must correspond to actual climate states. Such bare assertions, absent factual support or a reasoned expert opinion, cannot support the admission of this contention. *Fansteel*, CLI-03-13, 58 NRC at 203 (internal citation omitted).

Additionally, Nevada makes the assertion that "the correct way to represent" climate states is to allow "parameters to vary within the simulation so as to reflect the actual process that is expected to occur." *See id.* at 139. Nevada does not argue that if DOE had used this method, then the results of the performance assessment would be different. Rather, Nevada simply asserts that because DOE did not use Nevada's suggested methodology, DOE has inappropriately used data from the analog sites. *See id.* Absent a reasoned basis or explanation, such bare and conclusory assertions, even if made by an expert, cannot support the admission of this contention. *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires

that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.). To satisfy criterion 6, an "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Here, Nevada asserts that DOE's use of pooled climatology data does not comply with Part 63, in particular Sections 63.21(c)(15) and 63.114(b). With respect to 63.21(c)(15), Nevada states that DOE is in noncompliance due its inappropriate use of analog site data which does not match "any plausible physical climate state." NEV Petition at 139. However, contrary to Nevada's suggestion, Section 63.21(c)(15) does not state that pooled data from analog sites must match physical situations. Section 63.21(c)(15) requires "[a]n explanation of measures used to support the models used to provide the information required in paragraphs (c)(9) through (c)(14) of this section" and that "[a]nalyses and models that will be used to assess performance of the geologic repository must be supported by using an appropriate combination of such methods as field tests, in situ tests, laboratory tests that are representative of field conditions, monitoring data, and natural analog studies." Nevada has suggested the "correct way" to represent climate states, but Nevada has not shown how future climate predictions would have been improved by using this method and disaggregating the data nor has Nevada shown why DOE's results are not appropriate due to the fact that they do not correspond to physically plausible climate states. *See* NEV Petition at 139. Thus, absent support, Nevada's conclusory assertion that DOE's use of pooled climatology data does not comply with Part 63 fails to show a genuine dispute exists. *See* Millstone, CLI-01-24, 54 NRC at 358.

Similarly, with respect to Section 63.114(b), Nevada's assertions regarding noncompliance with this section does not show a genuine dispute on a material issue of law fact. *See* NEV Petition at 139. Section 63.114(b) requires that DOE "[a]ccount for uncertainties and variabilities in parameter values and provide for the technical basis for parameter ranges, probability distributions, or bounding values used in the performance assessment." 10 C.F.R. § 63.14(b). Nevada asserts that DOE's pooled parameter values do not comply with Section 64.114(b) because "the technical basis for the parameter ranges used to describe future climatic conditions is flawed." *See* NEV Petition at 139. However, as explained above, Nevada does not provide an explanation as to how or why DOE's technical basis for the parameter ranges is flawed. *See* NEV Petition at 139. Absent support showing why DOE's use of the parameter ranges is flawed, this assertion does not demonstrate a genuine dispute with the application as required by 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone,* CLI-01-24, 54 NRC at 358.

Finally, NEV-SAFETY-18 seeks to raise a dispute with SAR Subsection 2.3.1.2.3 and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either

supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Thus, for the reasons set forth above, NEV-SAFETY-18 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-19 - FUTURE INFILTRATION PROJECTIONS NEED TO INCLUDE REDUCED VEGETATION COVER

> SAR Subsection 2.3.1.3.2.1.5 and related subsections, which state the nature of vegetation cover predicted for the future at Yucca Mountain, fail to account accurately for the possible impact of reduced vegetation cover that could result in increased rates of infiltration.

NEV Petition at 142. Nevada asserts SAR subsection 2.3.1.3.2.1.5 and related sections omit the impacts of anthropogenic climate change on the vegetation cover. *Id.* at 143 & 145. According to Nevada, DOE failed to comply with regulatory requirements in 10 C.F.R. § 63.305(c) addressing the first 10,000 years, and with recently promulgated 40 C.F.R. Part 197 for the period beyond 10,000 years. *Id*. Nevada asserts that human-caused climate change will cause a temperature increase, and will also make for a drier climate, albeit with more-intense rains. *Id.* at 144. As a consequence, the water infiltration will increase. *Id*.

Staff Response

The Staff opposes admission of NEV-SAFETY-19 for the reasons below:

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't. of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references.

Fansteel, Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Nevada's experts Michael Thorne and Jonathan Overpeck adopt paragraph 5, and Thorne adopts paragraph 6, however, neither of the adopting affidavits give any insight into the reasons for the claims in those paragraphs. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 15, Affidavit of Jonathan Overpeck.

In NEV-SAFETY-19, Nevada asserts without citation to a reference, that the future will be hotter by "5 to 10 or more degrees F warmer than present," that the climate will be drier, storms more intense, rain more irregular, and wet winter less frequent. Nevada Petition at 144. These broad statements lack the requisite facts and specificity required by the Commission under *Palo Verde* and contemplated by the APAPO Board; they are insufficient for admission of a contention.

Similarly, Nevada also claims, in a conclusory manner and without a supporting reference, that lack of vegetation leads to wetter soil. *Id.* at 145 (After providing a reference for the idea that xeric vegetation can maintain dry conditions, Nevada claims "Of course, this means that the converse is also true, if the vegetation cover is removed, subsurface conditions will become wetter, and infiltration greater."). In addition to lacking expert or factual support and citations for the converse claim, the conclusion ignores the mitigating factor that a *lack of water* was the cause of a Nevada's suggested lack of vegetation, and logically, a lack of water means less water to wet the soil. Thus, the contention is not supported.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more

than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Regarding the first 10,000 years, Nevada has incorrectly alleged an omission of information on greenhouse gases which is actually addressed in the SAR. Accordingly, Nevada fails to craft an admissible contention. *See* 10 C.F.R. 2.309(f)(vi). In its application, DOE provided a discussion of the FEPs[44] evaluated in the climate analysis and infiltration model. SAR 2.3.1.1 "Summary and Overview" at page 2.3.1-6. However, upon consideration, the FEP No. 1.4.01.02.0A, "Greenhouse Gas Effects," was screened out, as DOE concluded that consideration of human activities and industrial processes that have the potential to cause climate change was excluded by regulation. Table 2.2-5, at No. 1.4.01.02.0A, SAR page 2.2-221. The table indicates that DOE's technical basis was given in reference "SNL 2008a" *Features, Events, and Processes for the Total System Performance Assessment: Analyses*. ANL-WIS-MD-000027 REV 00. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20080307.0003 (LSN# DEN001584824). In SNL 2008a, the requirements contained in 10 C.F.R. § 63.305(b) and proposed 10 C.F.R.

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[44] 10 C.F.R. § 63.114(e) requires that any performance assessment used to demonstrate compliance with 10 C.F.R. § 63.113 must provide the technical basis for either inclusion or exclusion of specific features, events, and processes ("FEPs") in the performance assessment.

§ 63.305(c)[45] were discussed, and the authors concluded that the FEPs related to changes in or predictions of future human activities including variations in greenhouse gas effects are excluded from the TSPA by regulation. SNL 2008a at 6-241 - 6-242.

Nevada is therefore incorrect to the extent that it is alleging that greenhouse gasses were not considered by DOE, thus Nevada has failed to craft an admissible contention of omission. *See Susquehanna,* LBP-07-10, 66 NRC at 24. Nevada does not acknowledge and dispute DOE's conclusion for the greenhouse gas FEP. Thus Nevada has failed to craft a contention alleging an error by failing to read and state the applicant's view and directly controverting it, and by mistakenly asserting that a topic was not discussed.

For the beyond-10,000-year period, Nevada asserted that DOE must address impacts in a matter consistently with the newly-promulgated rules in 40 C.F.R. Part 197, and that DOE was non compliant. *See* Nevada Petition at 143. First Nevada fails to point to any explicit requirement in 40 C.F.R. Part 197 that would require DOE to address human caused-climate change in the post-10,000-year period. There is no requirement in 40 C.F.R. Part 197 that would mandate such an analysis by DOE for the post-10,000 year period. The alleged failure does not raise a genuine dispute regarding a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). Nevada has not shown that consideration of these impacts is required for the post-10,000 year period, nor that DOE is out of compliance.

On October 15, 2008 EPA issued its "Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada." *See* 73 Fed. Reg. 61,256 (Oct. 15, 2008) (final rulemaking for 40 CFR Part 197). This rule limits DOE's analysis of climate change during the post-10,000 year period "to the effects of increased water flow through the

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[45] Implementation of a Dose Standard After 10,000 Years, 70 Fed. Reg. 53,313, 53,319 (Sept. 8, 2005).

repository as a result of climate change, and the resulting transport and release of radionuclides to the accessible environment." 40 C.F.R. § 197.36(c)(2). In promulgating this rule, the EPA recognized that considering climate fluctuations due to anthropogenic changes and using this to predict future climate with confidence, would be unrealistic. 73 Fed. Reg. at 61,285. Therefore, EPA reasoned "that the understanding of past climate fluctuations and their potential effects on the Yucca Mountain hydrologic system is valuable information and should be applied to define the climate-related parameter values." *Id.* Thus, EPA's rule states that "[t]he nature and degree of climate change may be represented by constant climate conditions" during the post 10,000 year period. 40 C.F.R. § 197.36(c)(2). 40 C.F.R. Part 197 states that the NRC shall specify values, such as temperature, precipitation, or infiltration rate of water, to be used to represent climate change during this period. *Id.*

The NRC, in accordance with the Energy Policy Act of 1992, must promulgate a final rule regarding radiation protection standards for the post-10,000 year period that is consistent with the EPA's regulations in 40 C.F.R. Part 197. The NRC's corresponding rule is pending final Commission approval. *See* Implementation of a Dose Standard After 10,000 Years, 70 Fed. Reg. 53,313 (Sept. 8, 2005). The Staff notes that the rule, as written, does not require consider of anthropogenic climate change during the post-10,000 year period. The proposed rule, states that DOE may represent the nature and degree of climate change by "constant climate conditions" for the period from 10,000 years after disposal through geologic stability. *See id.* at 53,319. As stated in the proposed Statement of Considerations, the ranges of values specified by the NRC for deep percolation rates include consequences of future climate change, which the NRC believes "captures the range of temporal variability, uncertainty, and magnitude of deep percolation expected as a consequence of future climate change." *See* SECY-08-0170, Final Rule: 10 CFR Part 63, "Implementation of a Dose Standard After 10,000 Years" (RIN 3150-AH68), (Nov. 4, 2008) (ADAMS Accession No. ML082270760) at 35. 10 C.F.R. § 63.342(c)(2) (Proposed) requires DOE to use these

values, which are based on paleoclimate data, to assess the effects of future climate change on disposal at Yucca Mountain. *See* 70 Fed. Reg. at 53,316. DOE is not required to separately consider anthropogenic effects because, as stated by the NRC in the proposed Statement of Considerations, anthropogenic effects are captured by the long-term average infiltration values specified in the proposed rule. SECY-08-0170 at 35. Thus, Nevada's allegation that DOE's climate considerations for the post-10,000 year period are flawed because they do not consider anthropogenic effects is unsupported and does not raise a material issue of law or fact with regard to 10 C.F.R. Part 63. *See* 10 C.F.R. § 2.309(f)(1)(vi). To the extent that Nevada is challenging this pending rulemaking, such a challenge is not permissible. *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345 (stating "[i]t has long been agency policy that Licensing Boards "should not accept . . . contentions which are (or are about to become) the subject of general rulemaking by the Commission.").

In sum, NEV-SAFETY-19 is not admissible. For the pre-10,000 year period, Nevada fails to address the information in the application regarding how the regulations preclude consideration of the anthropogenic climate change. In addition, for the post-10,000 year period, the issue is the subject of currently rulemaking, and therefore may not be challenged as part of the license application.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 146, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site),CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear

Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 19 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention...." NEV Petition at 146. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at146. Therefore, with respect to this part of the NEV-SAFETY-19 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.1.3.2.1.5 and "related" subsections. NEV Petition at 142. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1) and should be rejected.

NEV-SAFETY-20 -NET INFILTRATION ALTERNATIVE CONCEPTUAL MODEL

> SAR Subsection 2.3.1.3.3.1 and similar subsections, which state that the MASSIF model estimates net infiltration at the Yucca Mountain site based on daily water balance calculation of the near-surface soils, fails to apply alternative conceptual models to evaluate the performance of the geologic repository.

NEV Petition at 147. In support of its contention, Nevada asserts that 10 C.F.R. § 63.114(c) requires DOE to consider alternative conceptual models of features and processes that are consistent with available data and current scientific understanding, and to evaluate the effects that alternative conceptual models have on the performance of the geologic repository. *Id.* at 148. Nevada asserts that when DOE selected two unsuitable models for consideration, then rejected those models as unsuitable, DOE concluded that it need not demonstrate alternative models. *Id.* at 148-149. Nevada wants DOE either to select "appropriate" models or to develop an alternative model for comparison. *Id.* at 149. Nevada offers some example models. *Id.* at 149-150.

Staff Response

The Staff opposes admission of NEV-SAFETY-20 as described below.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3),

CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) *aff'd* CLI-07-25, 66 NRC 101 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.")

Nevada has alleged an omission of alternative modeling approaches for net infiltration, and specifically claims that no alternative modeling approaches for net infiltration were applied. NEV Petition at 148. Nevada's claim is contradicted by SAR Subsection 2.3.1.3.3.1, wherein DOE discussed how alternative models were used:

> The results of the alternative model study suggest that the predicted mean net infiltration over relatively large areas (e.g., unsaturated zone model domain and repository footprint) is fairly stable. It is the spatial distribution of net infiltration that is especially sensitive to the spatial distribution of soil properties. This **alternative model study** provides greater confidence in the spatial averaged net infiltration values produced by the infiltration model (SNL2008a, Section 7.1.3.2[a]).

SAR at 2.3-71 (emphasis added). An additional example is in SAR Section 2.3.1.3.4.2.3, "Corroboration of MASSIF Model Results with Other Alternative Mathematical Model Results," wherein DOE wrote:

> As discussed previously, there are no site-specific measurements of net infiltration that can be used for model validation. An alternative model approach was used as part of the post-development validation for the MASSIF model. The approach consists of corroborating model results with other model results obtained from the implementation of mathematical models. The alternative model considered is a one-dimensional unsaturated flow model based on the Richards equation. The computer code HYDRUS 1D (Simunek et al. 2005) was used to perform the simulations. The summary of this validation study is provided below. The details concerning modeling setup and supporting calculations are in Simulation of Net Infiltration for Present-Day and Potential Future Climates (SNL 2008a, Appendix K).

Id. at 2.3.1-87. Nevada acknowledges DOE's consideration of these models in its criticism: "The reference uses HYDRUS-1D as a single example of a Richards' equation-based model, and then dismisses it as unsuitable…." *See* NEV Petition at 148. Nevada's criticism, while acknowledging the use of HYDRUS-1D, is unsupported because the DOE "dismissal" was for use as a primary model, not for use as an alternative with which to corroborate the main model (MASSIF) results. *See* SAR Section 2.3.1.3.4.2.3 at 2.3.1-87.

Therefore, Nevada is incorrect in its assertion that no alternate conceptual models have been considered. The contention is therefore not admissible. *See Susquehanna,* LBP-07-10, 66 NRC at 24.

Nevada states that 10 C.F.R. § 63.114(c) requires consideration to be given to alternative conceptual models. NEV Petition at 148. It appears that Nevada is reading the rule to require a second complete computer code, i.e. an alternative to MASSIF such as MIKE-SHE. *See id*. at 149. The rule has no such requirement. *See* 10 C.F.R. § 63.114(c). Accordingly, Nevada fails to raise a genuine dispute with the applicant on a material issue of law or fact.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 150-51, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc*. (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the

petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 20 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 150-51. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co*. (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp*. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See*

NEV Petition at 151. Therefore, with respect to this part of the NEV-SAFETY-20, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.3.1 and "similar" subsections. NEV Petition at 147. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion,* CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309 (f)(1) and should be rejected.

NEV-SAFETY-21 - INFILTRATION MODEL AND CHANGES IN SOIL AND ROCK PROPERTIES

> SAR Subsections 2.3.1.3.2.1.2, 2.3.1.3.2.1.3, 2.3.1.3.2.1.4 and similar subsections, which state that the MASSIF infiltration model was developed with bedrock hydraulic conductivity, soil depth and soil properties assumed to be constant for the next 10,000 years, fails to account for biogeochemical and geomorphological processes, including erosion and also fails to account for uncertainties and variabilities in parameter values.

NEV Petition at 152. In support of its contention, Nevada acknowledges that the modeling of net infiltration under future climates as input to the TSPA includes expected changes to vegetation, but takes issue with its claim that "no consideration is given to change in soil depth, soil properties or bedrock conductivity over 10,000 years." *Id.* at 153. Nevada believes that the assumption to model the physical properties of the soil, bedrock, and water as constant over the time periods being considered in the model (1 day to 10,000 years) was not adequately justified. *Id.* at 154. According to Nevada, proper modeling of soil depth and rock properties would have potentially significant effects on the analyses. *Id.*

Staff Response

The Staff opposes admission of the contention for the reasons given below.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide “sufficient information to show that a genuine dispute exists on … a material issue of law or fact.” This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

NEV-SAFETY-21 incorrectly alleges that the application omitted consideration of

biogeochemical and geomorphological processes. *See* Nevada Petition at 152. SAR Table 2.2-1 "List of Potentially Relevant Features, Events, and Processes," lists all features, events, and processes (FEPs) potentially relevant to long-term postclosure performance of the repository, organized numerically by FEP number. SAR Table 2.2-1. The table presents the FEP number, FEP name, the commonly-associated feature category, and the process or event category. *Id.* The table shows that DOE, through its screening process, considered as potentially relevant processes such as erosion from hydrologic and thermal hydrologic processes and events, and geochemical interactions and evolution caused by chemical and thermal-chemical processes or events. SAR Table 2.2-1 at page 2.2-121 (FEP 1.2.07.01.0A "Erosion/denudation") & 2.2-143 (FEP 2.2.08.03.0B "Geochemical interactions and evolution in the UZ"). DOE provided additional discussions of its screening decisions. *See* SAR Table 2.2-5. "Complete Listing of FEPs Considered" at pages 2.2-217 and 2.2-262. Also, DOE said that further discussion of the technical bases for the screening decisions are covered in detail in the *Features, Events, and Processes for the Total System Performance Assessment: Analyses* (SNL 2008a)." SAR Table 2.2-5 at n. 1 page 2.2-277 (SNL-2008a is available at LSN# DEN001584824).

Regarding erosion, SNL 2008a provides a detailed analysis on the causes, effects, and modeling concerns for the performance assessment. SNL 2008a at 6-182 through 6-185. Nevada alleged that "no consideration is given to change in soil depth, soil properties, or bedrock conductivity." NEV Petition at 153. However, Nevada's claims ignore SNL 2008a, which includes discussions on how erosion of surface soils can affect local net infiltration rates, weathering of bedrock can lead to soil development, and increases in soil depth can decrease net infiltration. SNL 2008a at 6-182. Likewise, Nevada does not dispute any of the discussions in SNL 2008a regarding how climatic changes influence geomorphological processes, how thunderstorms produce erosion, and the insights into the erosion provided by the middle to late Pleistocene depositional records. *Id*. at 183.

On the topic of biogeochemical changes, SNL 2008a also provides an analysis of various aspects of geochemically-induced and microbial changes to soil and rock. *E.g.* SNL 2008a at 6-990. Nevada does not address or acknowledge the discussions. Therefore, NEV-SAFETY-21 should be not be admitted.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 155, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003), citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also Susquehanna,* LBP-07-4, 65 NRC at 316 (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-21 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention…." NEV Petition at 155. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and applicant should not have to guess which parts of the TSPA

Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists… on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999) Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 155. Therefore, with respect to this part of the NEV-SAFETY-20, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.2.1.2, 2.3.1.3.2.1.3, 2.3.1.3.2.1.4, and "similar" subsections. NEV Petition at 152 and 154. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the

named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309 (f)(1) and should be rejected.

NEV-SAFETY-22 -NET INFILTRATION MODEL WATER BALANCE

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections, which address the hydrological processes represented in the net infiltration model, are inadequate because they fail to address lateral subsurface flow and allow for the generation of surface runoff only when the soil layers are saturated.

Nevada Petition at 156. In support of its contention, Nevada writes that the observed soil-water response did not include observations of lateral subsurface flow. *Id.* at 157. Also the MASSIF model used fails to represent lateral subsurface flow, and does not model "infiltration excess runoff." *Id.* at 157-158. As a consequence, Nevada alleges that the range of estimates of infiltration would "widen" and seepage would be altered. NEV Petition at 158.

Staff Response

The Staff opposes admission of both aspects of NEV-SAFETY-22 for the reasons given below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, assertions without further explanation, even from an expert, are insufficient to meet the requirement of 10 C.F.R. § 2.309(f)(1)(v). *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 471 (2006). Here, Nevada fails to provide sufficient explanation through either supporting facts or expert opinion to support its contention.

Nevada offers three experts to support this contention, who "adopt" statements in

paragraph 5 or 6 of the discussion on NEV-SAFETY-22. See NEV Petition, Attachment 3, Affidavit of Michael C Thorne ¶ 3 (adopting 6); Attachment 6, Affidavit of Adrian P. Butler ¶ 2 (adopting 5); Attachment 13, Affidavit of Howard S. Wheater ¶ 2 (adopting 5). The affidavits provide no additional explanation or insight into the contention. *See id.* Regarding modeling of lateral subsurface flow, Nevada alleges that MASSIF does not represent such flow, and that such flow is important. NEV Petition at 157-158. However, Nevada also alleges that MASSIF modeling is consistent with USGS net infiltration modeling. *Id*. at 158. Nevada offers no definitive reason why the modeling used in MASSIF, which, Nevada states, "[f]ollow[s] on from USGS net infiltration modeling," *id.,* cannot be used, and Nevada does not attempt to explain how the modeling results would differ if subsurface flow was modeled. See id. at 157-158. Nevada's general statement that seepage would be "altered" and there would be "potentially significant changes" amounts to an unexplained notice pleading, and is insufficient for admission of the contention. *See USEC,* CLI-06-10, 63 NRC at 471.

Nevada makes no attempt to show that infiltration values would have been greater, and repository performance adversely affected, had an alternative modeling approach been used. In fact, Nevada's claim that the range of values would have been "widened," NEV Petition at 158, implies that infiltration could be less than that predicted by the model; and Nevada does not assert that average infiltration values would shift from those produced by DOE as a result of the allegedly widened range of values.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact …The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must

read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Nevada alleged, without citation to the SAR, that MASSIF only generated surface runoff when the soil layers are saturated, and that infiltration excess runoff was excluded. *See* NEV Petition at 157. However, it appears that the description in the SAR differs from what Nevada asserts regarding runoff. In SAR Section 2.3.1.3.3.1.1 "Development of MASSIF Infiltration Model" DOE discussed two runoff situations, not just one as alleged by Nevada:

> Runoff from a cell can result from the water redistribution calculation when either (1) the entire soil profile becomes saturated, or (2) the first layer becomes saturated due to the soil conductivity infiltration limit. In either case, the water in excess of saturation will produce runoff from the cell. This runoff is then added to the next downstream cell, which is identified in the input to the model.

SAR Section 2.3.1.3.3.1.1 at 2.3.1-60. Thus Nevada does not create a genuine dispute with the application because Nevada did not discuss and dispute the contents of the SAR. See *Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 159, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for

the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 22 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention…." NEV Petition at 159. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.*

(Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 159. Therefore, with respect to this part of the NEV-SAFETY-20, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.2, 2.3.1.3.3, and “similar” subsections. NEV Petition at 156. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this

contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309 (f)(1) and should be rejected.

NEV-SAFETY-23 -EVALUATION OF ALTERNATIVE NET INFILTRATION MODELS

> SAR Subsections 2.3.1.3.2, 2.3.1.3.3, and 2.3.1.3.4 and similar subsections, incorrectly compare the MASSIF net infiltration model with an alternative model using other data sets.

NEV Petition at 160. Nevada believes that DOE erred when DOE used lysimeter data from the Nevada Test Site and Reynolds Creak instead of data from Yucca Mountain. *Id.* at 161. Also, some testing of the MASSIF model was not performed due to lack of data. *Id.* According to Nevada, DOE failed to meet 10 C.F.R. § 63.114(g) which mandated comparisons with outputs of detailed process-level models and/or empirical observations. *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-23 for the reasons described below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, assertions, without further explanation, even from an expert, are insufficient to meet the requirement of 10 C.F.R. § 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 471 (2006).

Nevada has offered two affidavits from experts who adopt paragraph 5 of NEV-SAFETY-23. *See* NEV Petition, Attachment 6, Affidavit of Adrian P. Butler ¶ 2; Attachment 13, Affidavit of Howard S. Wheater ¶ 2. The affidavits provide no additional explanation of Nevada's claim. *See id*.

Nevada alleges that the comparison of MASSIF with HYDRUS-1D was performed

incorrectly. NEV Petition at 161, citing "Independent Review of Simulation of Net Infiltration for Present-Day and Potential Future Climates" (Oak Ridge Institute for Science and Education Report (ORISE) (04/2008), LSN# DEN001595302 at D-11). However, Nevada fails to provide sufficient information to demonstrate an error, but instead proffers five bullet-points which make general statements. For example, one bullet-point alleged "Model calibration was used to fit the model to the data," yet failed to explain why it would be inappropriate to perform the logical step of calibrating a model or how the procedure used failed to produce a defensible infiltration estimate. NEV Petition at 161. Other statements in the bullet-points alleged various failures to test specific aspects of the models, but again provided no explanation of the requirements or relevance of the alleged omissions. *See id.* at 161-162. Nevada does not explain why these general statements indicate that the comparison between the two models was not correct. Nevada has failed to provide sufficient facts and explanation to support admission of this contention based on these bullet points. *See USEC*, CLI-06-10, 63 NRC at 471.

Nevada also points to "Simulation of Net Infiltration for Present-Day and Potential Future Climates" (05/2007), LSN# DEN001575070 regarding the a three-month period in 1998 when there was a noticeable difference between observed and calculated storage, and Nevada claims the authors attempted to "gloss over" this difference. See NEV Petition at 162. Nevada does not put forward a rational basis for the assertion that the characterization in the document "gloss[ed] over" a significant finding. *See id*. Further, Nevada claims that large precipitation events are the "most important" but does not provide a sufficient explanation of why, thus the claim is unsupported. *See id.* Nevada also claims that "[i]mportant differences" in process representation have been "disguised" in LSN# DEN001575070 because of "aggregate statistics." *See id.* However, Nevada does not clearly explain these claims in adequate detail, thus they are conclusory statements that do not support admission of the contention. *See USEC*, CLI-06-10, 63 NRC at 471.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Pursuant to 10 C.F.R. § 2.309(f)(1)(vi), if Nevada believes that the application fails to contain information on a relevant matter as required by law it must identify each failure and the supporting reasons for Nevada's belief. *See* 10 C.F.R. § 2.309(f)(1)(vi) Nevada has claimed that DOE failed to meet 10 C.F.R. § 63.114(g) because DOE compared the MASSIF net infiltration model with the HYDRUS-1D model on alternative, non-Yucca Mountain data sets. *See* Nevada Petition at 161 and 162-163. In making this claim, Nevada fails to explain why section 63.114 should be read to preclude comparisons with non-Yucca Mountain data sets or laboratory results, when the regulation contemplates "comparisons made with outputs of detailed process-level models and/or empirical observations (e.g., laboratory testing, field investigations, and natural analogs)." *See* 10 C.F.R. § 63.114.

Nevada repeated the regulation in its filing, but made no effort to address or explain its position that section 63.114(g) permits use of only Yucca Mountain data sets. *See* Nevada Petition at 161. Moreover, Nevada fails to show that the use of non-Yucca Mountain data was not appropriate.

Last, NEV-SAFETY-23 seeks to raise a dispute with SAR subsections 2.3.1.3.2, 2.3.1.3.3, and 2.3.1.3.4 and "similar" subsections. NEV Petition at 160. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR subsections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Nevada does not specify which other "similar" subsection of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified subsections. If Nevada wished to raise an issue with another subsection in the SAR as part of the contention, it should have identified those subsections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 N.R.C. 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR subsections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific subsections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309 (f)(1) and should be rejected.

NEV-SAFETY-24 – PRECIPITATION DATA IN NET INFILTRATION MODEL

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections, are flawed because there are no reliable data at Yucca Mountain to quantify snowfall, and the network of precipitation gauges is inadequate to characterize the rainfall spatial distribution for modeling of infiltration.

Nevada Petition at 164. Nevada claims that DOE "ignored" USGS recommendations regarding a precipitation monitoring network, thus no reliable snow data and inadequate rainfall data were obtained. *Id.* at 165-166. As a consequence, DOE could not validate the net infiltration model used with a reasonable level of confidence. *Id.* at 166.

Staff Response

The Staff opposes admission of NEV-SAFETY-24 for the reasons below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*affirming* LBP-05-28) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

Howard S. Wheater and Richard E. Chandler state that they adopt the paragraph 5 of Nevada's petition. *See* NEV Petition, Attachment 13, Affidavit Howard S. Wheater; Attachment 19, Affidavit of Richard E. Chandler. Nevada asserts in paragraph 5 of NEV-SAFETY-24 that no data are available to validate the model with reasonable levels of confidence, but does not explain why this claim is true, what is reasonable, or how many rainfall and snowfall measurements would be needed to meet Nevada's "reasonable levels of confidence." *See* Nevada Petition at 166. Significantly, none of the facts or discussion by

Nevada asserts that the infiltration model is wrong or that the additional data gained from more monitoring stations or measurements would have affected the predictions of infiltration. *See id.* Thus, no reasonable basis has been offered in support of the contention, and it is inadmissible under § 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 427.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact.

The Commission has stated that the "intervenor must do more than submit “bald or conclusory allegation[s]” of a dispute with the applicant… He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.” *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) (“Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.”).

Nevada asserts that the contention is material in part because it alleges a violation of the requirement in 10 C.F.R. § 63.114(a) to include hydrology data to the extent necessary (Nevada Petition at 165), but Nevada offers insufficient facts and discussion to show additional rainfall and snowfall measurements are necessary. *See* NEV Petition at 165-66. Nevada points to a report that stated that 100 to 150 monitoring sites are needed for detailed 3-D site-scale unsaturated flow modeling, but Nevada offers no discussion of how and why the authors made the conclusion. See *id.* (quoting Ambros, Flint and Hevesi, "Precipitation

Data for Water Years 1992 and 1993 from a Network of Non-Recording Gauges at Yucca Mountain, Nevada," USGS Open File Report 95-146), LSN# DEN001273104 at 1). Because of the lack of discussion, the statement is conclusory.

Nevada, in paragraph 5, has not directly discussed and the SAR. For example Nevada faults DOE for "ignor[ing]" USGS data collection recommendations, but does not dispute DOE's claim (SAR Subsection 2.3.1.2.1.1 at 2.3.1-9) that site-specific precipitation data for Yucca Mountain are available from a meteorological network operated since December 1985. Nevada is concerned about a lack of snowfall data, but this does not dispute DOE's claim that snow is rare. *See* SAR Subsection 2.3.1.2.1.1 at 2.3.1-8 (stating that snowfall is rare at the lower elevations in southern Nevada, but it can occur a few times during the winter at the elevations of the upper portion of Yucca Mountain). Nevada asserts the snowfall was needed to validate the infiltration modeling within reasonable levels of confidence but does not address the statement in the application that "winter precipitation" at Yucca Mountain was sufficient in "water years" 1995 and 1998 to produce runoff measurements in several subbasins that were used during validation of the net infiltration model. *See* SAR Subsection 2.3.1.2.1.1 at 2.3.1-8.

Thus Nevada has failed to show a dispute with the application by failing to address the information in the application, Nevada fails to raise a genuine dispute and the contention is inadmissible. *See Millstone*, CLI-01-24, 54 NRC at 358.

NEV-SAFETY-24 seeks to raise a dispute with SAR subsections 2.3.1.3.2 and 2.3.1.3.3 and "similar" sections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.*

(Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion § 2.309(f)(1)(vi) with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections that it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309 (f)(1) and should be rejected.

NEV-SAFETY-25 – SITE-SPECIFIC DATA IN NET INFILTRATION MODEL

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections contain site-specific data at Yucca Mountain that are too limited to allow for validation of the net infiltration model, and those data that are available demonstrate that performance of the model is unacceptably poor for infiltration modeling.

NEV Petition at 168. There are two independent and separable claims: 1) a lack of site-specific data which prevent adequate validation of the net infiltration model, 2) and existing data demonstrate poor performance of the model. *Id.* On the first topic, Nevada offers a reference to support its assertion that the available data on temperature and precipitation are limited. *Id.* at 170 (citing LSN# DEN001575070, "Simulation of Net Infiltration for Present-Day and Potential Future Climates" at 7-35). Nevada states that stream flow data have been used for model validation, but available data are limited to just 1993, 1994, 1995, and 1998. *Id*. (citing LSN# DEN001575070 at Table 7.1.3-1 at 7-31). Regarding the second, Nevada provides a reference that concluded that saturated soil conductivity had to be adjusted in MASSIF to match measured infiltration from Pagany Wash. *Id.* at 171.

Staff Response

The Staff opposes admission of NEV-SAFETY-25 for the following reasons.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report

and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.") (citations omitted).

Nevada observes that LSN# DEN001575070 stated, "that a comprehensive knowledge of precipitation and temperature does not exist even when measured data exists." NEV Petition at 170 (quoting LSN# DEN001575070 at 7-35). Nevada concludes that "monitoring data are inadequate to characterize precipitation (and temperature) for evaluation of hydrological response." NEV Petition at 170. However, the statement on "comprehensive knowledge," when considered in context, simply does not support Nevada's conclusion. Instead, as shown below, DOE was able to use the available data to evaluate hydrological response:

> [Figure 7.1.3-3. "Predicted (Solid Bar) and Measured (Arrow) Runoff (Wren Wash, Water Year 1995)] illustrates the fact that ***a comprehensive knowledge of precipitation and temperature does not exist even when measured data exists.*** Infiltration and runoff calculations require weather data for the entire domain. Weather station data exist for discrete locations. Geographic extrapolation of weather data has relative high levels of uncertainty. Comparison of the daily runoff plots based on each of the weather stations give some indication of the uncertainty of the runoff prediction due to uncertainty in weather data.
>
> Given the uncertainty in soil conductivity and weather data, calculations of daily runoff are fairly good. Runoff occurs on the correct days and in roughly the "correct" amount. It is worth noting that no uncertainty estimates were recorded with the measured runoff data.

LSN# DEN001575070 at 7-35 (emphasis added). In other words, the actual text shows the opposite of Nevada's assertion that available data are too "limited to allow for validation of

the net infiltration model" (NEV Petition at 168), and instead it appears that DOE used soil conductivity data and weather data to perform validation and even concluded the results were "fairly good." LSN# DEN001575070 at 7-35. Nevada asserts that the "fairly good" conclusion is improper because for one event, simulated stream flow was much higher than observed, and for another, no flow was simulated. NEV Petition at 171 (discussing LSN# DEN001575070 Figure 7.1.3-15 at 7-47). However, Nevada's argument that those two events show the "fairly good" conclusion was wrong does not appear to be sufficient to demonstrate that the authors of LSN# DEN001575070 were incorrect.

Nevada discusses the results of a MASSIF validation test. *Id.* The test included comparison with available borehole data at Pagany Wash. *See id.* Although the test showed that there was good agreement on runoff, there was a pronounced difference in spatial distribution of net infiltration which required the soil conductivity used in the simulation input to be increased to match measured infiltration. *See id*. (citing LSN# DEN001575070 at 7-48, 7-50). From this, Nevada states that prior assumptions of soil properties were "inappropriate" and spatial distribution "indeterminate" and that the "inappropriate" assumptions were used in the TSPA. *Id.* This does not support Nevada's claim that available data demonstrate that performance of the model is unacceptably poor for infiltration modeling because, as discussed below, Nevada does not fully explain how the Pagany Wash study was incorporated and assessed.

A document put forward by an intervenor will be examined for what it shows. *Yankee Atomic Electric Co*. (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 (1996), *aff'd in part, rev'd in part on other grounds*, CLI-96-7, 43 NRC 235 (1996). LSN# DEN001575070 documents the results of the Pagany Wash study, which where highlighted by Nevada, but also discusses what DOE did in response to the information from the Pagany Wash study. *See, e.g.*, LSN# DEN001575070 at 7-61 to 7-62 (describing how the implications of the Pagany Wash study on the larger modeled domain were explored). From the further study,

DOE concluded in part that it is impossible to determine from the available characterization data exactly where the bulk of the net infiltration occurs, but the predicted mean net infiltration over relatively large areas (*e.g.*, UZ model domain and repository footprint) is fairly stable. *Id.* The results were also discussed in the SAR. *See, e.g.*, SAR Section 2.3.1.3.4.2.1 at 2.3.1-81. Nevada did not discuss and dispute this information, thus Nevada has failed to show a genuine dispute with the application by failing to discuss the contents of the application. *See Millstone*, CLI-01-24, 54 NRC at 358. Nevada does not further explain why the model is "unacceptably poor" (NEV Petition at 168) in light of the information in LSN# DEN001575070. Thus Nevada's use of LSN# DEN001575070 does not support its contention because Nevada fails to explain the full significance of the information.

Nevada states that, based on a report by ORISE, the model needed to be calibrated and altered to represent observed infiltration beneath washes and ephemeral streams. *See* NEV Petition at 171-172 (citing LSN# DEN001595302, "ORISE Independent Review of Simulation of Net Infiltration for Present-Day and Potential Future Climates," (MDL-NBS-HS-000023, Rev. 01), April 2008 at 4). However, Nevada does not further explain how this demonstrates "unacceptable" performance, thus NEV-Safety-25 is not supported.

Nevada discussed NRC000027373, "Part 1 of 3: Upper Split Wash Modeling in Support of Shallow Infiltration Estimates" for the purpose of showing that some of the six stream flow gauges installed in four washes, and used in 1993, 1994, 1995 and 1998, had no data or incomplete data. *See* NEV Petition at 170. Nevada characterized this as "an indictment of the monitoring program." *Id.* However, Nevada has not shown why the data that were collected from the stream gauges were insufficient, and why more data are necessary in the context of supporting NEV-SAFETY-25, which alleges that lack of data prevents model validation. *See id.* at 168. Nevada states that the requirement to include "data related to the hydrology of the Yucca Mountain site and the surrounding region to the extent necessary" has not been met. *Id.* at 169. 10 C.F.R. § 63.114(a) requires that a performance

assessment include "data related to the . . . hydrology . . . of the Yucca Mountain site, and the surrounding region to the extent necessary. . . ." Nevada has objected to the lack of data from some stream gauges. See NEV Petition at 170. However, Nevada has not shown with any reference or analysis that more hydrology data for the Yucca Mountain site are needed to meet 10 C.F.R. § 63.114(a). *See generally* NEV Petition at 168-173.

Regarding the requirement of 10 C.F.R. § 63.114(b) to account for uncertainties and variabilities in parameter values, Nevada asserts that DOE's representation of uncertainty was inadequate, and more information about soil types is needed to reduce uncertainty. *See id.* at 172 (citing LSN# DEN001575070). This assertion does not support the admission of NEV-SAFETY-25 because it does not conflict with the application, nor is it a violation of a regulation. Nevada references the summary pages of the ORISE report for the notion that, in part due to a lack of site-specific data, the ORISE authors were unable to confirm if the model reasonably accounted for uncertainties if it underestimates infiltration. NEV Petition at 172 (citing LSN# DEN001595302, "ORISE Independent Review of Simulation of Net Infiltration for Present-Day and Potential Future Climates," (MDL-NBS-HS-000023, Rev. 01), April 2008 at v - vi.) However, in the next sentence, the ORISE report states, "The spatially averaged net infiltration estimates that result from the modeling effort . . ., along with their uncertainty ranges, *may or may not* accurately capture the value of net infiltration at Yucca Mountain for the modeling domain as a whole." LSN# DEN001595302 at vi (emphasis added). Thus it appears that the ORISE report does not definitively make a conclusion about the modeling accuracy. *See id*. The summary of the report does not support Nevada's claim that representation of uncertainty is inadequate to demonstrate compliance with § 63.114(b). *See* NEV Petition at 172-73.

Similarly, 10 C.F.R. § 63.114(g) requires that DOE “[p]rovide the technical basis for models used in the performance assessment such as comparisons made with outputs of detailed process-level models and/or empirical observations (e.g., laboratory testing, field

investigations, and natural analogs)." Nevada, asserting a violation of that rule, has not shown that additional data comparisons and field observations would make a difference to the assessment (*i.e.* dose from radiological exposures to the reasonably maximally exposed individual (RMEI)). *See* 10 C.F.R. § 63.113(b). Thus, Nevada does not raise a genuine dispute.

Also, NEV-SAFETY-25 seeks to raise a dispute with SAR subsections 2.3.1.3.2, 2.3.1.3.3 and "similar" subsections. NEV Petition at 168. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide “sufficient information to show that a genuine dispute exists on a material issue of law or fact.” This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Nevada does not specify which other “similar” sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one

of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309 (f)(1)(vi) and should be rejected.

NEV-SAFETY-26 -SOIL PROPERTIES DATA IN NET INFILTRATION MODEL

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections fail to properly characterize model net infiltration because data to characterize soil depth and hydraulic properties are limited and thus have no credibility for use in infiltration modeling.

NEV Petition at 174. Nevada alleges non-compliance with 10 C.F.R. §§ 63.114(a) & (b) because available data at Yucca Mountain are inadequate to characterize the spatial distribution of soils for the modeling of net infiltration or for site-specific model validation. *Id.* According to Nevada, data on soil depth and soil properties are limited. *Id.* at 175. DOE used an analogous site, but the soils at the analogous site were different. *Id.* at 176. Nevada refers to one report that concluded that additional Yucca Mountain samples were needed for adequate MASSIF validation and uncertainty analysis. *Id.* (citing "Independent Review of Simulation of Net Infiltration for Present-Day and Potential Future Climates" (Oak Ridge Institute for Science and Education Report (ORISE) (04/2008), LSN# DEN001595302 at 9)).

Staff Response

The staff opposes admission of NEV-SAFETY-26 for the reasons described below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the “references” should “be as specific as reasonably possible.” *U.S. Dep’t of Energy* (High-

Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Nevada’s expert, Howard S. Wheater, adopts the statements in Paragraph 5 (NEV Petition at 175-176) of NEV-SAFETY-26 as his own opinions. *See* NEV Petition, Attachment 13, Affidavit of Howard S. Wheater. Nevada, in Paragraph 5 of the contention, presents three bullet-point excerpts from "Simulation of Net Infiltration for Present-Day and Potential Future Climates," (05/2007) LSN# DEN001575070, and asserts that the quotes evidence that MASSIF net infiltration modeling has "no credibility" because soil data at "so limited." NEV Petition at 175. However, review of the three bullet-points shows they do not provide evidence for a "no credibility" claim against modeling due to lack of data.

The first bullet-point states that sensitivity analyses suggest there might be insufficient characterization of soil properties over the modeling domain to obtain accurate and detailed maps. *Id.* at 175 (quoting LSN# DEN001575070 at 8-11). The quotation speculates about a potential problem. It does not state that the lack of data was so extreme that modeling could not be done, thus it does not support Nevada's claim. *See id.*

The second bullet-point states that there are few direct measurements of soil data at Yucca Mountain, and thus estimation must be used. *Id.* This bullet point is neutral and provides no support for a "no credibility" claim. *See id.*

The third bullet-point states that soil depth is important, and uncertainty in the soil depth limits accuracy. *Id.* at 175-176. Again, this is a neutral statement, and provides no support to a claim of "no credibility." *See id.*

Next, Nevada states that that data from Hanford, WA, soils have been applied to Yucca Mountain using a "pedo transfer function." *See id.* at 176. Nevada points to a report to support the fact that Hanford soils are different from Yucca Mountain soils, and have a different "pedo-genesis." *Id.* (citing "Independent Review of Simulation of Net Infiltration for

Present-Day and Potential Future Climates" (Oak Ridge Institute for Science and Education (ORISE) Report (04/2008), LSN# DEN001595302 at 5 and D1)). Nevada provides no further explanation as to how these claims, even if true, support a claim of "no credibility." *See id.*

Nevada notes that DOE included additional data in a 2008 report. *Id.* at 176 (citing LSN DEN001575070 at 7-69). Again, this is neutral statement that does not support admission of the "no credibility" contention. Nevada quotes from the ORISE report to show that the ORISE authors believed more data were needed. *Id.* (citing LSN# DEN001595302 at 9). However, in the quotation, Nevada has provided no information or details about *how and why* ORISE made the statement, nor has Nevada advanced an independent basis on why it concludes that a "no credibility" finding can be made. *See USEC Inc.* (American Centrifuge Plant), LBP-05-28, 62 N.R.C. 585, 607 (2005), *aff'd* CLI-06-10, 63 NRC 451 (2006) (The board in USEC found in part that quotes from a supporting letter proffered without further explanation and without context did not provide factual or expert support.).

It is well established that intervenors have an ironclad obligation to use available documents to advance their contentions. *See, e.g., Duke Power Co*. (Catawba Nuclear Station, Units 1 & 2), ALAB-687, 16 NRC 460, 468 (1982), *vacated in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983). Nevada has an obligation to present factual information or expert opinion necessary to support its contention. *See* 10 C.F.R. § 2.309(f)(1)(v); *Georgia Inst. of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305 (1995), *vacated in part and remanded on other grounds*, CLI-95-10, 42 NRC 1, and *aff'd in part*, CLI-95-12, 42 NRC 111 (1995). Conclusory assertions will not suffice to allow the admission of a proffered contention. *See Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

In paragraph 5 of the contention, Nevada quotes a single sentence from the ORISE report: "The expert panel assembled by ORISE concluded that the model report does not provide a technically credible spatial representation of net infiltration at Yucca Mountain."

NEV Petition at 176 (quoting LSN# DEN001595302 at v.). The quotation is taken from the summary of the report, and accordingly lacks any of the discussion, details, analysis, or context. *See* LSN# DEN001595302 at v. Because Nevada provided no context or details or meaningful analysis of how the quote relates to the characterization of net infiltration in SAR Subsections 2.3.1.3.2 and 2.3.1.3.3. *See* NEV Petition at 174. Nowhere in paragraph 5 does Nevada even discuss DOE's SAR and relate the disputed subsections with the quotation by ORISE. *See Id.* at 175-176. Thus Nevada has failed to meet its burden to support its contention with expert opinion and facts. *See Palo Verde*, CLI-91-12, 34 NRC at 155. The sentence from the summary page is conclusory, and therefore does not support admission. *See Fansteel*, CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Nevada has referred to the "limited" availability of soil depth and hydraulic properties in

SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and "similar" subsections (NEV Petition at 174), however Nevada has not directly pointed to any particular data set in the SAR and discussed why it is inadequate. Thus, Nevada has not supported admission of NEV-SAFETY-26. *See Susquehanna*, LBP-07-10, 66 NRC at 24.

NEV-SAFETY-26 seeks to raise a dispute with SAR subsections 2.3.1.3.2 and 2.3.1.3.3 and "similar" subsections. Nevada Petition at 174. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of

the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309 (f)(1) and should be rejected.

NEV-SAFETY-27 -ROCK PROPERTIES DATA IN NET INFILTRATION MODEL

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections fail to provide adequate data to characterize the spatial distribution of rock properties at the soil-rock interface making it impossible to undertake infiltration modeling that is adequate for assessment purposes.

NEV Petition at 178. Nevada alleges three concerns with modeling and the fractured bedrock at Yucca Mountain: 1) major faults are not represented; 2) uncertainties in the mapping of the rock units are not quantified or analyzed; and 3) data are inadequate to characterize the bulk rock hydraulic properties. *Id.* at 179.

Staff Response

The staff opposes admission of NEV-SAFETY-27 for the reasons below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Nevada's experts Adrian P. Butler and Howard S. Wheater "adopt" statements in paragraph 5 of the Petition, however, neither affidavit gives any insight into the reasons for the claims in those paragraph 5. *See* NEV Petition, Attachment 6, Affidavit of Adrian P. Butler;

Attachment 13, Affidavit of Howard S. Wheater.

Regarding modeling of faults, Nevada says that the infiltration model fails to model faults and instead assumes a single underlying rock type. *Id.* at 179-180. Nevada does not further explain the model in terms of modeling cells or explain the consequences of the modeling assumption. *See id.* Nevada asserts that "thin units may occasionally be under- or over-represented . . . ." *Id.* at 180 (citing "Simulation of Net Infiltration for Present-Day and Potential Future Climates" (05/2007), LSN# DEN001575070 at 6-93). Nevada does not explain the significance of this statement and fails to offer an opinion that the under- or over-representation affected the magnitude and distribution of net infiltration. *See id.* There is simply a lack of supporting information. *See Fansteel,* CLI-03-13, 58 NRC at 203.

Second, for "rock unit uncertainties," Nevada asserts that DOE made an "arbitrary allocation of a single rock type (405)" and did not evaluate uncertainty due to rock type in areas sufficiently north, east, and south. NEV Petition at 180. Nevada (1) provides no discussion regarding how far north, east and south would be sufficient; and (2) gives no insight as to why it feels DOE's "rock type (405)" assumption was incorrect, whether the characteristics assigned to this rock type were incorrect, or why this purported deficiency could affect repository performance. *See id.* Again, the lack of a discussion of significance goes against admission. *See Fansteel,* CLI-03-13, 58 NRC at 203.

Third, Nevada states that with regard to bulk rock properties, bedrock saturated hydraulic conductivity is required, but the underlying data to support the estimates are "inadequate" because few data are available. NEV Petition at 180. The support for the contention is again conclusory because Nevada does not offer an opinion as to whether the available data are incorrect or are not representative of the geologic units in question. No consequences or details are discussed. Nevada has not met its burden to show how the proffered information supports admissibility of NEV-SAFETY-27. See *Fansteel,* CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."), *aff'd* CLI-07-25, 66 NRC 101 (2007).

Section 2.309(f)(1)(vi) further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Nevada claims that faults were not modeled, but does not discuss and dispute SAR 2.3.1-102, wherein DOE explicitly discussed how faults were considered:

> Rock properties are defined for each of the stratigraphic units (layers) classified in the geological framework model, which is further developed into a model grid for the site-scale unsaturated zone flow model. Heterogeneity is modeled in terms of the sequence of hydrogeologic units and discrete faults. Therefore, rock properties are implicitly embedded in the TSPA through the output flow fields, with site-scale layering and faults explicitly taken into account. At the drift scale, the effects of rock heterogeneity on seepage are explicitly modeled

> through the use of geostatistical data constrained by field measurements of permeability and by seepage tests (Section 2.3.3).

SAR Table 2.3.1-1. “Features, Events, and Processes Addressed in Climate and Infiltration” at FEP 2.2.03.02.0A “Rock properties of host rock and other units.” Because Nevada did not discuss and dispute this section in a meaningful way, Nevada has failed to raise a genuine dispute with the application, and the contention should be rejected.

NEV-SAFETY-27 "challenges" SAR Subsections 2.3.1.3.2 and 2.3.1.3.3, and alleges non-compliance with 10 C.F.R. § 63.114(a) and (b). NEV Petition at 180-181. However, the support offered only repeats the claim of inadequate data, and paraphrases the regulations. *Id.* Ultimately, a “performance assessment” estimates the dose incurred by the reasonably maximally exposed individual (RMEI) as a result of releases caused by all significant features, events, processes, and sequences of events and processes, weighted by their probability of occurrence. 10 C.F.R. § 63.2. Nevada provides no discussion on how the "inadequate" data affected the net infiltration model, and how this inadequacy relates to dose by the RMEI. *See id.* Thus, NEV-SAFETY-27 has not proffered a genuine dispute with the application.

NEV-SAFETY-27 seeks to raise a dispute with 2.3.1.3.2 and 2.3.1.3.3 and similar subsections. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. Because Nevada does not specify which other “similar” section of the SAR it wishes to dispute, the contention fails to meet criterion § 2.309(f)(1)(vi) with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2),

CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, for the reasons discussed above, this contention should be rejected.

NEV-SAFETY-28 - NET INFILTRATION MODEL ROCK PROPERTIES UNCERTAINTY ANALYSIS

> The uncertainty analysis in SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections is invalid because it uses an arbitrary criterion to exclude from consideration 70 percent of the area of interest.

NEV Petition at 182. Nevada alleges that only hydraulic conductivity values for rock units 405 and 406 were included in the uncertainty analysis. *Id.* at 183 (citing "Simulation of Net Infiltration for Present-Day and Potential Future Climates" (05/2007), LSN# DEN001575070, Table 6.5.5.1-1 at 6-153). Nevada claims that the remaining units were inappropriately excluded because individually they were less than 15% of the modeled area, but collectively they were 70% of the area. *Id.* (citing "Simulation of Net Infiltration for Present-Day and Potential Future Climates" at 6-152 & 6-95).

Staff Response

The staff opposes admission of NEV-SAFETY-28 for the reasons described below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Nevada's experts Howard S. Wheater and Richard E. Chandler adopt the statements in Paragraph 5 (NEV Petition at 183) of NEV-SAFETY-28 as their own opinions; Michael C. Thorne adopts Paragraph 6 (NEV Petition at 184-185) as his opinions. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 13, Affidavit of Howard S. Wheater; and Attachment 19, Affidavit of Richard E. Chandler.

In paragraph 5, Nevada states that the uncertainty analysis of net infiltration included only hydraulic conductivity units 405 and 406. NEV Petition at 183 (citing "Simulation of Net Infiltration for Present-Day and Potential Future Climates" (05/2007), LSN# DEN001575070, Table 6.5.5.1-1, at 6-153). Nevada points to this document to support its assertion that other rock units were excluded because they were less than 15% of the modeled area of interest, individually. *Id*. (citing LSN# DEN 001575070 at 6-152). Nevada then states based on Table 6.5.2.5-1 *Bedrock Cell Counts for the UZ Grid and Infiltration Model Domain* (LSN# DEN001575070) at 6-95 that the units "neglected" by DOE comprised 70% of the modeled area. NEV Petition at 183. However, it appears DOE did not "neglect" the uncertainties from the other rock units, but instead made a determination about the impact of the rock units:

> The analysis in Appendix I [Treatment of Uncertainties] also excludes, on the basis of low influence, parameters that are not expected to influence more than 15% of the net infiltration. The most common exclusion arguments in such cases are:
>
> • The parameter applies to less than 15% of the area of interest (e.g., geophysical properties)
>
> • The parameter applies to less than 15% of the days in the analysis (e.g., monthly wind speed).

"Simulation of Net Infiltration for Present-Day and Potential Future Climates" (LSN# DEN 001575070) at 6-152. Nevada makes no showing, and presents no facts that dispute the claim that the "less than 15%" parameters will have low influence. See NEV Petition at 183-185. Regarding the 15% value itself, although not pointed out by Nevada, LSN#

DEN001575070, in a discussion on varying weather while investigating uncertainties, refers to the 15% criterion as "arbitrary," but makes no negative inference from that adjective: LSN# DEN001575070 at 6-153 ("Although the relative uncertainty in [weather variable] is somewhat less than the arbitrary 15% criterion, it was included in the uncertainty analysis so that its value would remain consistent with the value of [another weather parameter]). Nevada does not present facts or opinion to show that 15% was a wrong choice, nor that the concept of a threshold criterion in modeling is unacceptable.

Further, regarding "neglected units" (NEV Petition at 183), Table 6.5.2.5.1-1 documented consideration of 40 rock groups and determined that the majority had low occurrences, many being 1 or 0% of both the UZ grid and the total model domain. *See* LSN# DEN001575070 Table 6.5.2.5-1 at 6-95. Nevada does not dispute the data in the table.

Thus, the claim that the effects of uncertainty over most of the domain was not considered (NEV Petition at 183) is incorrect. Instead, the uncertainties in those rock units were considered and excluded on the basis of "low influence." See LSN# DEN 001575070 at 6-152. Thus the contention should be rejected. *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant… He or she must read the pertinent portions of the license application, including the Safety Analysis Report

and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Here, Nevada "challenges" the uncertainty analysis in SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 for allegedly using an "arbitrary" criterion. NEV Petition at 184. However, Nevada presents no discussion from the SAR or other documents regarding why DOE chose this criterion. Therefore, Nevada has failed to meet the requirements under *Millstone* to craft a genuine dispute with the application, and the contention must be rejected. *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 184, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel*, CLI-03-13, 58 NRC at 203 (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not

reference a specific portion of the application).

NEV-SAFETY-28 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 184-85. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 184-85. Therefore, with respect to this part of the NEV-SAFETY-28, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.2,

2.3.1.3.3 and “similar” subsections. NEV Petition at 182. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-29 -SPATIAL VARIABILITY OF SOILS AND VEGETATION IN NET

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections use an invalid analysis because they improperly aggregate data on soils and vegetation and therefore fail to account properly for spatial variability resulting in inappropriate modeling of the amount and spatial distribution of infiltrating water.

NEV Petition at 186. Nevada states that information on soil Yucca Mountain is limited. *Id.* at 187 (citing "Simulation of Net Infiltration for Present-Day and Potential Future Climates" (05/2007), LSN# DEN001575070 at 6-18). Nevada states that 4 soil units were used in net infiltration modeling, and uniform soil depth was assumed for each unit. *Id.* at 187-188. Also, a single rooting depth and plant height was used. *Id.* at 188. Nevada claims, without explanation, the spatial heterogeneity of soil properties has been "grossly under-represented" in the model, and, again without explanation, that vegetation modeling is "even worse." *Id.* at 187-188. Nevada points to a statement from the summary of a report which documented an independent review of the infiltration modeling. *Id.* at 188. This summary states in part that assumptions of uniform soil depths and constant vegetation rooting depth, "may not be appropriate" because the assumptions "oversimplify" the landscape and hydrologic processes, and the assumptions have not been "adequately corroborated by field and laboratory observations at Yucca Mountain." *Id.* (quoting "Independent Review of Simulation of Net Infiltration for Present-Day and Potential Future Climates" (Oak Ridge Institute for Science and Education Report (ORISE) (04/2008), LSN# DEN001595302 at v)).

Nevada alleges that "appropriate" representation of spatial variability of soil and vegetation properties would "widen" the range of infiltration estimates, and "alter" radiological impacts on the RMEI. *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-29 for the following reasons.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

The supporting information provided by Nevada appears conclusory. Nevada argues that averaging cannot be used, but its arguments are essentially a description of the averaging followed with conclusory statement. *See* NEV Petition at 187-188. Nevada argues that because of limitations in its basic data, the spatial heterogeneity of soil properties has been grossly under-represented in the modeling of net infiltration. NEV Petition at 187. However, Nevada provides no explanation how the limitation in the data shows that the modeling was incorrect. *See* NEV Petition at 187-188. Also, Nevada provides no reasoned explanation of

its assertion that heterogeneity of maximum rooting depth and plant height can be expected to be a major influence across the whole model domain. *See id.* at 188. Nevada's statements are therefore conclusory, and do not support admission of NEV-SAFETY-29. *See USEC,* CLI-06-10, 63 NRC at 472.

Nevada has not garnered support from its limited quotation from the summary of the ORISE independent review report. The quoted language from the report does not claim there *is* a problem with the modeling assumptions but only speculates that the land may be complex, and the modeling assumptions have not been field-corroborated, thus the assumptions "*may"* not be appropriate. *See* NEV Petition at 188 and quotations therein. In sum, the ORISE report quoted by Nevada only speculates that a problem might exist; it does not conclude that a problem does exist, thus it does not provide sufficient facts to support admission of NEV-SAFETY-29. *See* 10 C.F.R.§ 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Nevada has failed to proffer a genuine dispute with the application by failing to address and dispute the issue of concern. Specifically, Nevada's concern regards the modeling of soil units including associated vegetation. However, the proposed contention contains no analysis and no discussion of the reasons why DOE modeled soil units the way it did, and likewise no analysis and no discussion (other than a conclusory statement) of why DOE's methodology was flawed. *See* NEV Petition at 187-188. Therefore, Nevada has not met its

admissibility burden, and the contention must be rejected. *See Susquehanna*, LBP-07-04, 65 NRC at 316.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 189, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

NEV-SAFETY-29 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 189. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.*

(Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 189. Therefore, with respect to this part of the NEV-SAFETY-29, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.2, 2.3.1.3.3, and "similar" subsections. NEV Petition at 186. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this

contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-30 -TEMPORAL VARIABILITY IN PRECIPITATION IN NET INFILTRATION MODEL

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections use an invalid analysis because the net infiltration modeling fails to represent correctly the temporal variability of precipitation, and hence the magnitude and spatial distribution of net infiltration is incorrect.

NEV Petition at 190. Regarding modeling rainfall, Nevada alleges that DOE's modeling of storms uses an average duration, and that "extreme temporal variability" is therefore "smoothed." *Id.* at 191-192. Nevada claims the "smoothing" is not addressed in the model, and therefore the results are incorrect. *Id.* at 192. Also, a "daily" time step is an "improper gross aggregation" of soil dynamics, which have physical time scales of minutes to hours. *Id.* In support of the contention, Nevada points to an NRC modeling study that suggests that smoothing "may lead to errors." NEV Petition at 192 (quoting "Upper Split Wash Modeling in Support of Shallow Infiltration Estimates" (CNWRA 05/2000 Part 1 of 3), LSN# NRC000027373 at 1-4).

Staff Response

The Staff opposes admission of NEV-SAFETY-30 for the following reasons.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-

Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

An expert opinion that merely states a conclusion (*e.g.*, the application is ‘deficient,’ ‘inadequate,’ or ‘wrong’) without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff’d on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

The supporting information provided by Nevada appears conclusory. Nevada's argument, that because "temporal smoothing is not addressed" the results are "therefore incorrect," lacks support and explanation. See NEV Petition at 192. Nevada presents no facts or reasons as to why the so-called "smoothing" is automatically incorrect. Nevada states that summer storms are characteristic of the area (*id.*), which means storm data should be available for Nevada consider and analyze, and determine how "smoothing" would affect the storm modeling. However, Nevada fails to provide any examples or discussion on how the effect of "smoothing" at Yucca Mountain inherently leads to incorrect modeling. The opinion of Nevada is therefore conclusory, and does not support admission of a contention. *See USEC*, CLI-06-10, 63 NRC at 472. Nevada has not supported *why* the modeling assumption is bad, and the contention is therefore not admissible. *See id.*

Nevada has not garnered support from its limited quotation of the NRC study. First, Nevada has not shown that the study addressed the same modeling techniques and methods used in the SAR. A more complete quote of the report shows that that section of the study was criticizing a USGS technique, not discussing the SAR:

The USGS shallow infiltration model uses 2- and 12-hr time

> durations for summer and winter precipitation intensities. This smoothing of rainfall intensities for the "bucket" approach used in Flint et al. (1996) and Civilian Radioactive Waste Management System, Management and Operating Contractor (1999) may lead to errors, because infiltration is determined by the soil's capability to take in water at the precipitation rate. The bucket model routes water to lower layers when the soil capacity is reached or to downgradient areas when the rainfall intensity is greater than the rate at which the soil can accept water.

"Upper Split Wash Modeling in Support of Shallow Infiltration Estimates" (CNWRA 05/2000 Part 1 of 3), LSN# NRC000027373 at 1-4 (emphasis added). Nevada's selective quoting (NEV Petition at 192) failed to explain the significance of the study, thus it does not support admission of the contention. *See Fansteel*, CLI-03-13, 58 NRC at 203. Even assuming the statements regarding the modeling technique could be applied to DOE's methods, the quoted language from the report does not claim there *is automatically* an error when smoothing is used, but instead cautions that infiltration is a function of soil properties, so smoothing "may" lead to errors. *See* NEV Petition at 192 (quoting LSN# NRC000027373 at 1-4). In sum, the study quoted by Nevada has not been shown to apply to DOE's methods, and furthermore only speculates that a problem might exist; it does not conclude that a problem does exist, thus it does not provide sufficient facts to support admission of NEV-SAFETY-30. *See* 10 C.F.R.§ 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Nevada argues that that DOE did not address "temporal smoothing." Yet, Nevada admits that DOE used models with daily time step, and even sub-daily rainfall durations. NEV Petition at 191. Arguably, these statements show that DOE *did* consider "temporal smoothing," to the extent that Nevada uses this term to mean selecting fixed storm durations.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 193, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also Susquehanna*, LBP-07-04, 65 NRC at 316 (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-30 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 193. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 193. Therefore, with respect to this part of the NEV-SAFETY-30, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.3.2, 2.3.1.3.3, and "similar" subsections. NEV Petition at 190. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and

applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-31 -CALIBRATION OF NET INFILTRATION MODEL

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections reveal that the MASSIF net infiltration model is invalid because it requires calibration yet has not been and cannot be properly calibrated for present-day conditions.

NEV Petition at 194. Nevada states that the calibration data cause the MASSIF net infiltration model results to have no validity. *Id.* at 195. Nevada further states that "implications of the use of simplified soil physics for recharge estimation have not been adequately addressed" and "appropriate analysis of aggregation effects [of simplified physics and spatial and temporal aggregation] has not been carried out." *Id* at 196. Also, Nevada states that there is disagreement in the literature concerning the key parameter of "pore water pressures." *Id.* Nevada states that the net result is that the model is empirical and must have detailed calibration. *Id.* According to Nevada, SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 reveal that the MASSIF net infiltration model is invalid since it has not been and cannot be properly calibrated for present-day conditions. *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-31 for the reasons given below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the “references” should “be as specific as reasonably possible.” *U.S. Dep't of Energy* (High-

Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. Fansteel, Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

Nevada states without citation or meaningful explanation that the MASSIF model is based on "crude approximation of soil water processes that are defined by [sometimes indeterminate] physical properties . . . and are all lumped in space and time with no proper attention to parameter upscaling." NEV Petition at 195. From this, Nevada states that model parameters cannot be derived simply from estimated physical properties, but does not explain why this is so. *See id*. Nevada states that for MASSIF to have any validity, detailed site-specific calibration is required, but has not, and can not be done. *Id.* at 196. Nevada's logic amounts to conclusory statements, with no explanation. There is no showing or example or reference to scholarly work that explains why a model that is "crude" requires a "detailed" calibration. Thus, Nevada has not supported its contention except through impermissible conclusory statements. *See USEC,* CLI-06-10, 63 NRC at 472.

Nevada offers four bullet points that it says are problems with DOE's approach. NEV Petition at 196. It says that "implications" the model's use of simplified soil physics for recharge estimation have not been "adequately" addressed, but does not explain why. *See id.* Nevada says there is disagreement about in the literature concerning the appropriate pore water pressures, but does not relate this to DOE's application. *See id.* Nevada does

not provide a value of, or alternative definition of, field capacity that it feels would be more suitable. Nevada says that soil is aggregated in space and time; but it makes no showing that this is bad or unexpected in a model or whether a different aggregation stratagem would result in different estimates of infiltration or an adverse effect on repository performance. *See id.* Last, Nevada states that "appropriate" analysis of aggregation effects has not been carried out, but fails to assert what would be "appropriate." *See id.*

In sum, Nevada has not supported the contention in a meaningful manner, and NEV-SAFETY-31 should be rejected. *See USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (contention found not to meet § 2.309(f)(1)(vi) because it did not reference a specific portion of the application).

Here, Nevada fails to provide any explanation of how its contention demonstrates non-compliance with those regulations. *See* NEV Petition at 194,195. As stated by Nevada, those regulations address topics such as comparisons of outputs with laboratory testing, field investigations, and natural analogs. *Id.* at 195 (discussing § 63.114(g)). Nevada fails to explain how lack of a detailed calibration would cause DOE to be in non-compliance with 63.114(g). *See* NEV Petition at 196. Nevada has not made a showing that this lack of a detailed calibration would make a difference with respect to the findings the Staff must make under 63.31(a)(3)(ii). Thus, the contention does not satisfy 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-31 seeks to raise a dispute with 2.3.1.3.2 and 2.3.1.3.3 and "similar" subsections. NEV Petition at 194. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.*(Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-32 - USE OF INITIAL CONDITIONS IN NET INFILTRATION MODEL

> SAR Subsection 2.3.1.3.3 and similar subsections fail to properly estimate net infiltration because they use an incorrect procedure, in which initial conditions are reset each year, and as a result, the model underestimates the effects of wet years and underestimates net infiltration.

NEV Petition at 198. Nevada asserts that DOE ran the MASSIF net infiltration model for individual years independently, with the initial conditions reset each year. *Id.* at 199. Nevada states that the approach is incorrect, because it is likely to underestimate net infiltration following a wet or exceptional year, particularly under a Monsoon climate. *Id*. at 199 (citing "Independent Review of Simulation of Net Infiltration for Present-Day and Potential Future Climates" (Oak Ridge Institute for Science and Education Report (ORISE) 04/2008), LSN# DEN001595302 at D-14)).

Nevada also states that Section 6.5.7.4 of "Simulation of Net Infiltration for Present-Day and Potential Future Climates" (05/2007), LSN# DEN001575070, attempted to evaluate the effect of this erroneous assumption by conducting a set of runs with wetter initial conditions, but that attempt fails to adequately address the issue. NEV Petition at 200.

Staff Response

The Staff opposes admission of NEV-SAFETY-32 for the following reasons.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the

"references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Here, Nevada has offered its adopted opinion and citation to the ORISE report in support the idea that resetting moisture annually in the model is likely to underestimate the effects of sequentially wet years. NEV Petition at 199. However, Nevada provided no facts or information on the magnitude of the impact beyond the claim that the approach taken is "likely to underestimate" the impact. *See id*. Nevada has not offered support as to whether this purported deficiency is significant in time or space so as to affect performance at the repository scale. Nevada also does not acknowledge the contrapositive to its logic; namely that the approach DOE used would over-estimate infiltration in sequentially dry years. Thus, Nevada has not adequately supported its contention with facts. *See* 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant… He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-

07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.")

Nevada's contention against the modeling method that resets the moisture annually acknowledged that DOE performed modeling with wetter years, however Nevada dismissed the additional modeling as inadequate, without any real explanation of why. *See* NEV Petition at 200 (citing LSN# DEN001575070 at D-14 and D-15). By contrast, the application stated,

> Results from an alternative set of simulations using wetter initial water content conditions (IC 1 simulations) were conducted to test the effect of different water content conditions on infiltration, ... This test is important because MASSIF resets initial water content conditions on October 1 for every simulated year. These IC 1 simulations are identical to the base case simulations, except that they were started with a higher soil moisture content initial condition. It is noted that the primary difference between the base case simulations and the alternative IC 1 simulations is that the IC 1 simulations end up with a mean change in storage which is negative and a slightly higher net infiltration than the base case runs. This negative change in storage indicates that, on average, the IC 1 runs are ending the year with lower soil moisture contents than were applied as initial conditions. ***The comparison between the base case model results and the IC model results indicate that the effects of initial water content conditions on net infiltration uncertainty is minor*** (SNL 2008a[46], Section 6.5.7.4).

SAR Subsection 2.3.1.3.3.1.2 at 2.3.1-69 (emphasis added).

In relying only on the quote from LSN# DEN001575070, Nevada has not directly discussed and disputed the sensitivity modeling as discussed and tabulated in the application or detailed in SNL 2008a, thus Nevada has not supported its contention. *See*

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[46] In the application, LSN# DEN001575070 is referred to as SNL 2008a. *See* SAR Subsection 2.3.1.5 at 2.3.1-97, "SNL 2008a. Simulation of Net Infiltration for Present-Day and Potential Future Climates. MDL-NBS-HS-000023 REV 01 ADD 01. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20080201.0002;

Susquehanna, LBP-07-10, 66 NRC at 24.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 201, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

NEV-SAFETY-32 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 201. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because

Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 200-201. Therefore, with respect to this part of the NEV-SAFETY-32, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.3 and "similar" subsections. NEV Petition at 198. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those

specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-33 – APPROACH TO ESTIMATING PERCOLATION

> SAR Subsection 2.3.1.3.3 and similar subsections use a model to estimate infiltration to depth that is invalid.

NEV Petition at 202. Nevada states infiltration and percolation-to-depth in the soil profile in the MASSIF model is based on an approximation of soil physical processes, using the concept of field capacity, which is inappropriate for recharge estimation. *Id.* at 203. Nevada provides a quotation from one expert who had "low confidence in the Bucket model". *Id.* at 203-204 (citing "Unsaturated Zone Flow Model Expert Elicitation Project" (CRWMS M&O (1997), (LSN# NRC000010491) at DBS-4). Nevada provides a summary excerpt of a discussion on the algorithm for calculating maximum node-to-node percolation, and from that discussion states that no modeling justification is provided for the "arbitrary" procedure. *Id.* at 204 (citing "Simulation of Net Infiltration for Present-Day and Potential Future Climates" (05/2007), LSN# DEN001575070 at 6-27 and 6-28).

Staff Response

The Staff opposes admission of NEV-SAFETY-33 for the following reasons:

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is ‘deficient,’ ‘inadequate,’ or ‘wrong’) without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff’d on other grounds*, CLI-98-13, 48 NRC 26 (1998)).

Nevada has complained that the application methodology is "arbitrary," "crude," "incorrect" and lacking in "demonstrable physical basis." NEV Petition at 203-204. However,

Nevada does not explain why it makes these claims, why the application is in error, or provide a reasoned explanation of what deficiencies, in terms of adverse repository performance, result. Nevada does not show how its claim that modeling concepts and algorithms lack "physical significance" (*id.* at 204) or "physical basis" (*id.*) supports the NEV-SAFETY-33 claim that the model is invalid. Thus, Nevada has not demonstrated admissibility of the contention. *See USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citation omitted). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Nevada's concern is centered on the concept of "field capacity," but its criticism failed to discuss how the term is used in the SAR, and Nevada failed to provide its opposing view. *See* NEV Petition at 203-204. Thus, Nevada has not shown a genuine dispute with the application. *See Millstone*, CLI-01-24, 54 NRC at 358. Furthermore, Nevada has pointed to no rule or regulation that would preclude the use of modeling concepts such as "field capacity," so the contention is not supported. *See* 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a

determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE does not satisfy the showing required to meet 10 C.F.R. § 2.309. *See* NEV Petition at 150-51. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-33 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention...." NEV Petition at 205-206. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and

boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea of the claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 205-206. Therefore, with respect to this part of the NEV-SAFETY-33, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.3 and "similar" subsections. NEV Petition at 202. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has

also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-34 – REPRESENTATION OF STORM DURATION FOR NET INFILTRATION MODELING

> SAR Subsections 2.3.1.3.2 and 2.3.1.3.3 and similar subsections use an incorrect representation of storm duration for modeling of net infiltration.

NEV Petition at 207. Nevada asserts that selecting the rainfall duration is critically important in net infiltration modeling because it determines the rainfall intensity and hence infiltration and runoff processes. *Id.* at 208. Nevada asserts that DOE's storm duration is "flawed" and "inappropriate" because it masks extreme variability in the relationship. *Id.* Nevada asserts that the consequence of "ignoring" the short storms is that "significant" errors will be reasonably expected to occur in the simulation of infiltration and runoff, leading to changes in corrosion, radionuclide release, and dose to the RMEI. *Id.* at 209.

Staff Response

The staff opposes admission of NEV-SAFETY-34 for the following reasons:

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other grounds*, CLI-98-13, 48 NRC 26 (1998)).

Nevada offered no document directly supporting its contention. *See* NEV Petition at 208-209. Thus, Nevada relies on its experts. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne (adopting paragraph 6); Attachment 6, Affidavit of Adrian P. Butler (adopting paragraph 5); Attachment 13, Affidavit of Howard S. Wheater (adopting paragraph

5); and Attachment 19, Affidavit of Richard E. Chandler (adopting paragraph 5). However, neither the affidavits of the experts nor the discussions in paragraphs 5 and 6, adopted by the experts, provide meaningful explanations of Nevada's concern. For example, the petition does not explain how much rain in what time period constitutes the short duration, high intensity event alleged to be underestimated. *See* NEV Petition at 209. Indeed, Nevada presents no information on how frequently any particular class of rainfall *should* be modeled or occur, thus there is no basis for the claim that a class is "underestimated." *See id.* Such a claim is therefore without a reasoned basis and is conclusory, and does not support admissibility. *See USEC,* CLI-06-10, 63 NRC at 472.

Even assuming *arguendo* that a class of short-duration-high-rate rainstorms are underrepresented, Nevada presents no meaningful discussion in support of its leap to "significant" errors in the infiltration model, and eventually to the RMEI dose. *See* NEV Petition at 208-209. Nevada presents no discussion on how including (or excluding) a particular class of extreme rainstorm influences the RMEI dose in the long term. *See id.* Likewise, Nevada alludes to the "non-linear nature of hydrological response," but makes no further explanation. *See id.* at 209. Overall, the conclusory statements do not support admissibility. *See USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. “The intervenor must do more than submit “bald or conclusory allegation[s]” of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.” *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citation omitted). *See* also *PPL Susquehanna LLC*

(Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Nevada generally challenges SAR subsections 2.3.1.3.2 and 2.3.1.3.3. NEV Petition at 209. However, NEV-SAFETY-34 nowhere discusses DOE's logic and analysis in those areas. *See, e.g.*, SAR at 2.3.1-43 (regarding impact of extreme rainfall); SAR at 2.3.1-70 (regarding high runoff and low infiltration during intense rain). Nevada fails to address these discussions directly, and thus, Nevada fails to support its contention under the standards laid down in *Millstone*. *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, does not satisfy the showing required to meet 10 C.F.R. § 2.309. *See* NEV Petition at 209-10. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-34 asserts that possibly thousands of changes would need to be made to

the TSPA's approach in order to "include the effects of accepting this one contention…." NEV Petition at 210. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (*i.e.*, matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 209-210. Therefore, with respect to this part of the NEV-SAFETY-34, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.2.1, 2.3.1.3.3, and “similar” subsections. NEV Petition at 207. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-35 – EPISODIC NATURE OF INFILTRATION FLUXES IN NET INFILTRATION ANALYSIS

> SAR Subsection 2.3.1.3.3 and similar subsections, which describe the net infiltration analysis, fail to consider the episodic nature of infiltration fluxes and accordingly the model used is incomplete.

NEV Petition at 211. Nevada states that the input of net infiltration flux to the unsaturated zone is an annual average, sampled from 1000 years, which is inappropriate because it smoothes effects of episodic net infiltration fluxes which are important for representing flow in fractures and faults within the unsaturated zone. *Id.* According to Nevada, because of how the net infiltration modeling assigns weighting factors to extreme events, the system response to these dominant extreme events is lost. *Id*. at 213. Nevada states that the methodology precludes representation of intensities likely to generate fracture flow, and is therefore incompatible with appropriate representation of the process response of the underlying unsaturated zone. *Id.* Nevada states that explicit representation of these events would likely increase net infiltration significantly, resulting in changes to seepage at the repository level, corrosion, radionuclide release and transport, and radiological impacts on the RMEI. *Id.* Nevada challenges SAR Subsection 2.3.1.3.3 and similar subsections, which describe a net infiltration analysis, because they fail to consider the episodic nature of infiltration fluxes, and accordingly, the model used is incomplete. *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-35 for the following reasons.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10,

63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other grounds*, CLI-98-13, 48 NRC 26 (1998)).

Nevada has presented no meaningful discussion in support of its statement that explicit representation of episodic events is likely to cause significant increases in net infiltration with corresponding "significant" changes in corrosion, transport, and RMEI dose. *See* NEV Petition at 213. Overall, the unsupported statements amount to conclusory claims and do not support admissibility under 10 C.F.R. § 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citation omitted). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.")

The thrust of NEV-SAFETY-35 is that DOE "fail[ed] to consider the episodic nature of infiltration fluxes." NEV Petition at 211. However, Nevada has incorrectly alleged an omission of information which is actually addressed in the SAR. Accordingly, Nevada fails to

craft an admissible contention. *See* 10 C.F.R. § 2.309(f)(1)(vi).

In the SAR, DOE stated that "[e]pisodic transient flow was investigated separately, and has been excluded from the unsaturated zone flow model in the FEPs[47] screening analyses (Table 2.2-5, FEP 2.2.07.05.0A)." SAR at 2.3.2-96 to 2.3.2-97. In Table 2.2-5, DOE considered that episodic flow could occur in the unsaturated zone as a result of episodic infiltration. SAR Table 2.2-5 at 2.2-258. DOE screened out the FEP because DOE concluded it was of low consequence. *Id.* The table indicates that DOE's technical basis was given in the reference "SNL 2008a": *Features, Events, and Processes for the Total System Performance Assessment: Analyses*. ANL-WIS-MD-000027 REV 00. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20080307.0003 (LSN# DEN001584824). In LSN# DEN001584824, an extensive discussion of episodic flow topics including net infiltration and previous investigations is presented. LSN# DEN001584824 at 6-933 to 6-936. The authors then conclude that omission of episodic infiltration will not result in a significant adverse change in the magnitude or time of radiological exposures to the RMEI, or radiological releases to the accessible environment. *Id.* at 6-936. Because of the low consequences, the authors conclude that further assessment of this FEP was not needed to demonstrate compliance with the proposed regulations. *Id.*

Nevada is therefore incorrect to the extent that it alleges that the episodic nature of infiltration fluxes was not considered by DOE, thus Nevada has failed to craft an admissible contention of omission. *See Susquehanna,* LBP-07-10, 66 NRC at 24. Nevada does not acknowledge and dispute DOE's conclusion for the episodic infiltration FEP. Thus Nevada, by failing to read and state the applicant’s view, and directly controvert it, and by mistakenly

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[47] 10 C.F.R. § 63.114(e) requires that any performance assessment used to demonstrate compliance with 10 C.F.R. § 63.113 must provide the technical basis for either inclusion or exclusion of specific features, events, and processes ("FEPs") in the performance assessment.

asserting that a topic was not discussed, fails to raise a genuine dispute on a material issue of law or fact.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE does not satisfy the showing required to meet 10 C.F.R. § 2.309. *See* NEV Petition at 214. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-35 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 214. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need “many thousands of possible changes.” Section 2.309(f)(1)(vi) requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. *See* NEV Petition at 214. Therefore, with respect to this part of the NEV-SAFETY-35, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.3 and “similar” subsections. NEV Petition at 211. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and

applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-36 – CORROBORATION OF MODEL RESULTS IN POST-MODEL VALIDATION OF NET INFILTRATION SIMULATIONS

> SAR Subsection 2.3.1.3.4.2 and related subsections, which describe confidence building and abstraction of the net infiltration model for post-model development validation, do not provide an adequate basis for safety assessment because comparisons with data and alternative models are inadequate to support the net infiltration results.

NEV Petition at 215. Nevada states that the requirements of 10 C.F.R. § 63.114(g) are not met because post-model validation relies on: 1) comparisons with data from Yucca Mountain in which the data are inadequate to corroborate the model; 2) results from elsewhere that provide an inappropriate basis for comparison; and 3) comparisons with an alternative model that has an inappropriate technical basis. *Id.* In support of its argument, Nevada points to DOE documents that discuss the lack of relevant local measurements and a poor comparison between modeled and measured soil moisture values. *Id*. at 216-217 (citing portions of section 7.2.1 of "Simulation of Net Infiltration for Present-Day and Potential Future Climates" (Sandia National Laboratories, 05/2007), LSN# DEN001575070). Nevada also points to the ORISE report ("Independent Review of Simulation of Net Infiltration for Present-Day and Potential Future Climates" (Oak Ridge Institute for Science and Education (ORISE) for US Department of Energy, Office of Civilian Radioactive Waste Management, April 2008), LSN# DEN001595302) for the idea that even if results are generally consistent with other regional estimates, it is not proof that the results are correct for Yucca Mountain. NEV Petition at 217. Nevada quotes from, or cites, other documents, including NRC documents, to support its claims of various problems and omissions. *E.g. id*. at 218 (citing Stothoff, "Infiltration Tabulator for Yucca Mountain: Bases and Confirmation" (CNWRA, 08/2008), LSN# NRC000029713, NRC000029696, NRC000029726, NRC000029710 and NRC000029695).

Staff Response

The Staff opposes admission of NEV-SAFETY-36 for the following reasons.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other grounds*, CLI-98-13, 48 NRC 26 (1998)).

With regard to the claim that data from Yucca Mountain are inadequate to corroborate the model (NEV Petition at 215), the reference cited by Nevada addresses the difficulty of the comparison due to the "paucity" of some data. NEV Petition at 216-217 (citing "Simulation of Net Infiltration for Present-Day and Potential Future Climates," LSN# DEN001575070). But, the information pointed to by Nevada does not support its premise that the data are "inadequate." Nevada has offered no facts or opinions on what would be adequate data, and has not directly explained why any particular *required* comparison could not be done for lack of data. Therefore, with respect to this topic, Nevada has not supported admission of its contention.

In discussing neutron logging data, Nevada stated that model predictions and comparisons are not good. *Id*. at 217. Nevada states that reasonable comparison at Pagany Wash required model a change to soil properties. *Id.* Nevada has not explained why such changes during data comparison are unexpected or somehow inappropriate. *See id.* It has not provided any explanation on why the comparisons "demonstrate conclusively" that available data are inadequate. *See id*. Regarding such neutron logging tests, Nevada has not shown that DOE used them in support of its MASSIF. *See* SAR Section 2.3.1.3.4.2.1 at

2.3.1-82 ("Available site neutron logging data are not adequate for validation or corroboration of MASSIF.")

Regarding the next topic, that the results from elsewhere are inappropriate for comparison, Nevada has not made its case. *See* NEV Petition at 215. It asserted, without reference or citation, that "regional estimates are not relevant to the site-specific estimation of recharge at Yucca Mountain." NEV Petition at 217. Nevada does not provide a logical basis for this claim, but instead appears to be making an unsupported leap from the ORISE report's caution that *proof* is not obtained from regional estimates. *See id*. (quoting ORISE, LSN# DEN001595302, at vi). Thus, Nevada has not provided sufficient facts and opinions to support admission of this topic.

For the last topic, that post validation used comparisons with an alternate model that had an "inappropriate" technical basis, Nevada has not provided supporting facts or opinion with sufficient explanation on why the alternate model is inappropriate. *See* NEV Petition at 218. Nevada says the alternate model excludes extreme events because only 10 years of data are present and the model has rock and soil deficiencies. *Id.* On the topic of extreme events, Nevada is apparently presuming that no "extreme events" occurred during that 10 year period, but Nevada has presented no discussion on this topic. *See id.* It does not explain how or why the "deficiencies" preclude using the model as a comparison. *See id.* Nevada does point to a modeling validation discovery that occurred, but that error does not support Nevada's contention. *See id.* First, the technical basis for the model remains the same, even if there is an error in an input file. Thus, Nevada's claim of an inappropriate technical basis fails. Second, Nevada does not dispute the statement that the magnitude and impact of the error is known to be 37 to 46 percent increase in evaporation rates, and thus has been considered by DOE. *See id.*

In sum, the facts and opinion presented by Nevada are conclusory in nature, and lack sufficient reasoned bases and explanations, and do not support admission of NEV-SAFETY-36. *See USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Also, NEV-SAFETY-36 seeks to raise a dispute with SAR subsection 2.3.1.3.4.2 and "related" subsections. NEV Petition at 215. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet § 2.309(f)(1)(vi) because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet § 2.309(f)(1)(vi) with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of

the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-37 – NET INFILTRATION MODEL METHODOLOGY

> SAR Subsection 2.3.1.3.2 and similar subsections, which present the procedure for estimating long-term mean net infiltration from the MASSIF computer simulations, use a method that is not generally accepted and is not based on sound statistical principles.

NEV Petition at 220. Nevada alleges that the approach used by DOE fails to give formal consideration to the selection of strata, and as a result, the strategy adopted may be worse than sampling 10 years at random. *Id.* Nevada believes that 10 C.F.R. § 63.21(c)(15), which requires an explanation of measures used to support the models used, has not been met. *Id.* at 220-21. Nevada summarizes DOE's method of performing long term net infiltration calculations using MASSIF runs, and observes that DOE claims the approach recognizes the effects of extreme events. *Id.* at 221 (citing SAR at 2.3.1-42.). Nevada disputes that extremes are considered, asserts that the selection of percentiles is arbitrary, and states that a justification for DOE's strategy is to improve the precision of the estimates. *Id.* at 221-22.

Staff Response

The Staff opposes admission of NEV-SAFETY-37 for the reasons below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991) (citation omitted). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455, (2008). A "mere 'notice

pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citations omitted).

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

Here, Nevada's supporting facts and opinion are vague and appear to be unsupportive of NEV-SAFETY-37, which claims that the method used in the SAR "is not generally accepted" and is "not based on sound statistical principles." *See* NEV Petition at 220. Nevada does not explain what it means by generally accepted methods and cites no textbook, article, or opinion to support what is considered "generally accepted." *See id.* at 220-22. Further, Nevada provides no information to indicate that a different statistical sampling strategy would have resulted in greater predicted infiltration or an adverse effect on repository performance. Therefore, Nevada's claim is conclusory and does not support admission of the contention. Similarly, Nevada does not explain why the basis for DOE's method is not sound, but instead makes the conclusory statement that DOE's reasoning was "confused" or "misleading." *See id.* at 221. Also, Nevada's claim of "arbitrary" selection of parameters lacks any explanation or minimal showing as to how the selection was wrong or incorrect. *See id.*

In sum, NEV-SAFETY-37 is unsupported, and should not be admitted. *USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-37 seeks to raise a dispute with SAR Subsection 2.3.1.3.2 and "similar"

subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide “sufficient information to show that a genuine dispute exists on a material issue of law or fact.” This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-38 – PARAMETER CORRELATIONS IN NET INFILTRATION MODEL

> SAR Subsection 2.3.1.3.3 and similar subsections, which address the treatment of parameter uncertainty in the net infiltration model, fail to properly account for parameter correlations.

NEV Petition at 223. Nevada alleges that 10 C.F.R. § 63.114(b) requires the performance assessment to account for uncertainties and variabilities in parameter values, but with very few exceptions, parameter correlations are not considered in the uncertainty analysis and the issue is not discussed at all in SAR Subsection 2.3.1.3.3. *Id.* Nevada states that the uncertainty analysis for the net infiltration model uses the technique of Latin Hypercube Sampling (LHS), and inputs used under that technique must be statistically uncorrelated. *Id.* at 224. Nevada states that DOE presumed the data were uncorrelated without an adequate technical basis or argument. *Id.* at 224-25.

Staff Response

The Staff opposes admission of NEV-SAFETY-38 for the following reasons.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

The underlying concern is a claim that parameter correlations were not properly treated, in that they were omitted from SAR Subsection 2.3.1.3.3. *See* NEV Petition at 223 ("[T[he issue is not discussed at all in SAR Subsection 2.3.1.3.1."). Nevada admits correlations are discussed in "Simulation of Net Infiltration for Present-Day and Potential Future Climates,

MDL-NBS-HS-000023 REV 01 ADD 01" (01/28/2008), LSN# DEN001575070. NEV Petition at 224. LSN# DEN001575070 is a reference listed in SAR subsection 2.3.1.5.

Nevada holds out LSN# DEN001575070 as concluding that DOE did not follow its own requirements to provide an adequate technical justification on correlation. *See* NEV Petition at 225 (citing LSN# DEN001575070 at 8-16[sic: 8-18]). Nevada presents no facts to show that the justification given, which was "[n]o technical basis justifying imposing correlations . . . was identified" is not sufficient to meet what Nevada characterizes as DOE's own requirements. *See* NEV Petition at 224-25. Thus Nevada has not supported its contention with anything more than conclusory statements, and it is not admissible. *See USEC,* CLI-06-10, 63 NRC at 472.

Also, Nevada presents no facts showing that an error resulted in SAR Subsection 2.3.1.3.3 as a consequence of the allegedly-deficient technical basis. Nevada has not provided any examples of neglected correlated parameters or any explanation of how this alleged error would lead to the "biased estimates" with "radiological impact on the RMEI" as claimed in NEV-SAFETY-38. *See* NEV Petition at 225.

Therefore, Nevada's contention is unsupported and cannot be admitted. *USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with that applicant on a material issue of law or fact. “The intervenor must do more than submit “bald or conclusory allegation[s]” of a dispute with the applicant…He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.” *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citation omitted). *See* also *PPL Susquehanna LLC*

(Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Nevada's claim originates with the Section 8 of LSN# DEN001575070, but Nevada has apparently misread the document. Contrary to Nevada's claim that the document implies a default position of "neglect[ing] correlations" (*see* NEV Petition at 225), the actual document discusses how DOE investigated and *found* correlations. *See* LSN# DEN001575070 at 8-19 (discussing two strong correlations).

Therefore, Nevada is mistaken in its belief that the issue is not addressed, and thus the contention does not raise a genuine dispute. *See Susquehanna*, LBP-07-10, 66 NRC at 24.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE (*see* NEV Petition at 225) does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-38 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention…." NEV Petition at 225-26. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (*i.e.*, matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 225-26. Therefore, with respect to this part of the NEV-SAFETY-38, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.3 and "similar" subsections. NEV Petition at 223. To the extent that Nevada seeks to raise an

issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-39 - TEMPERATURE LAPSE RATE VERIFICATION

> SAR Subsection 2.3.1.3.2 and similar subsections, which address the temperature component of the net infiltration model, are inadequate because no attempt is made to verify the temperature lapse rate with elevation or the associated uncertainty using empirical observations.

NEV Petition at 227. Nevada states that 10 C.F.R. § 63.21(c)(15) requires that analyses and models used in the performance assessment must be supported empirically, and failure to use all available data to verify the temperature lapse rate violates the regulations. *See id*. at 227-228. Nevada asserts the model potentially underestimate infiltration, and biases the radiological impact on the RMEI. *Id.* at 228. Nevada states the temperatures used came from a text book which relied upon simplifying assumptions. *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-39 for the following reasons.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

Here, Nevada has not presented facts or opinion to support the notion that that the temperature profile used was incorrect or that the textbook was wrong. *See* NEV Petition at 228. No challenge to the "simplifying assumptions" of the textbook is discussed. *See id*. The contention centers on the claim that DOE made no attempt to use available data to confirm the lapse rate, stating "[h]owever, DOE does not use the available temperature data

to check either the rate of change with elevation or the associated uncertainty." *Id.* at 228. However, Nevada presents nothing to indicate that such a check is mandatory and does not show that the check would have discovered an error. *See id.*

No support is offered with respect to a requirement to use any certain amount of temperature data, nor does Nevada provide any legal interpretations regarding what "supported empirically" means in terms of satisfying regulations. *See id.* at 227-229. No effort was made to describe at all the "simplifying assumptions" associated with the textbook information, nor why those assumptions would be incorrect. *See id.* No discussion of the source of the information in the textbook is presented nor why it would be incorrect to use the textbook information at Yucca Mountain. Accordingly the contention is unsupported.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with the applicant with respect to a material issue of law or fact. "The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant… He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Nevada claims that the SAR does not show DOE used empirical support for the temperature lapse rates, and thus DOE violated § 63.21(c)(15), which Nevada states requires "that analyses and models used in the performance assessment must be supported empirically." NEV Petition at 227-228. The actual regulation states that the SAR must

include:

> An explanation of measures used to support the models used to provide the information required in paragraphs (c)(9) through (c)(14) of this section. Analyses and models that will be used to assess performance of the geologic repository must be supported by using an appropriate combination of such methods as field tests, in situ tests, laboratory tests that are representative of field conditions, monitoring data, and natural analog studies.

10 C.F.R. § 63.21(c)(15). Nevada has not provided a discussion on why this regulation would preclude using a textbook as part of "appropriate combinations" of "such methods" as laboratory tests and natural analog studies. See NEV Petition at 227-228. Accordingly NEV-SAFETY-39 is inadmissible for failing to present a dispute with the application. *See USEC,* CLI-06-10, 63 NRC at 472.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 229, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the

application).

NEV-SAFETY- 39 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 229. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 229. Therefore, with respect to this part of the NEV-SAFETY-39, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.2. and

“similar” subsections. NEV Petition at 227. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-41 – EROSION FEP SCREENING

> DOE's exclusion of land-surface erosion (FEP 1.2.07.01.0A), as reflected in SAR Subsections 2.2.1.1 and 2.2.1.2 and similar subsections, is incorrect because modeling studies and actual observations demonstrate that erosion will significantly affect infiltration and seepage fluxes at Yucca Mountain within the first 10,000 years after closure and will progressively and grossly modify the topography of the mountain within one million years.

NEV Petition at 238. Specifically, Nevada asserts that the referenced erosion model and observational data show that there will be significant changes in boundary conditions for infiltration and seepage modeling. *Id.* Nevada asserts that these processes will continue and that the crest of the mountain "will denude to the level of the proposed repository drifts within between 500,000 years and 5 million years." *Id.* at, 241. Thus, Nevada argues that DOE has failed to comply with a number of Part 63 requirements, in particular 10 C.F.R. §§ 63.114(e) and 63.113 by excluding FEP 1.2.07.01.0A. *Id.* at 242.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-41.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-41 is inadmissible because it fails to provide supporting facts or expert opinions as required by 10 C.F.R. § 2.309(f)(1)(v). The Commission requires petitioners to present factual information and expert opinion necessary to adequately support its contention. *See Arizona Public Service. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 & 3), CLI-91-12, 34 NRC 149, 155 (1991). A contention may be rejected if "an explanation regarding the bases" is not provided. *Id.* A petitioner cannot, however, provide "any material or document as a basis for a contention, without setting forth an explanation of its significance." *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-04-14, 60 NRC 40, 56 (2004) (citing Fansteel, Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC

195, 205 (2003)). A contention supported by bare assertions and speculation is inadmissible. *Fansteel*, CLI-03-13, 58 NRC at 203.

Nevada contends that based on observational data and erosion modeling, ongoing erosion processes will have a significant effect on safety in both the period before and after 10,000 years, because it will affect infiltration flux, seepage and operation, and may expose emplacement drifts. NEV Petition at 238, 241-42. In addition to the references discussed below, Nevada three experts attest to the information in paragraph 5. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 20, Affidavit of Steven A. Frishman; Attachment 21, Affidavit of Stephan K. Matthäi.

The observational data Nevada refers to are two debris flows triggered by thunderstorms in 1984 and 2003. *Id.* at 240. Nevada asserts that the debris flows triggered by these thunderstorms removed more material than suggested by DOE's erosion rate estimates, which project an erosion rate for 10,000 years. *See* NEV Petition at 241. Nevada does not, however, provide an explanation as to how debris flow observations from single events in two years can be used to refute DOE's estimate of erosion rate for 10,000 years. Nor does Nevada provide any facts or expert opinions as to why these observational data indicate that "erosion will significantly affect infiltration and seepage fluxes" or that it may lead to exposure of emplacement drifts. *See id.* at 238. Nevada cannot simply refer to debris flow observations from two thunderstorms without an explanation regarding the basis of its contention, *see Palo Verde,* CLI-91-12, 34 NRC at 155, and without setting forth an explanation of the significance of the observational data. *See Fansteel*, CLI-03-13, 58 NRC at 205.

The erosion model Nevada refers to is by Stuewe, et al. NEV Petition at 240 (citing, Stuewe *et al.*, Erosional Decay of the Yucca Mountain Crest, GEOMORPHOLOGY (Accepted Manuscript)[48] (LSN#. NEV000005187)). The Stuewe, *et al.* model, which is based on a number of assumptions, calculates that Yucca Mountain's crust will erode to the level of the proposed repository drifts within 500,000 years to 5 million years. NEV Petition at 240-41.

Nevada asserts that based on the two observed debris flows and the Stuewe *et al*. model, ongoing erosion processes "will be of significance to safety assessment both in the period before 10,000 years and in the longer term." NEV Petition at 241 (emphasis added). There is, however, no explanation as to why the factual information or the expert opinions support Nevada's assertion that erosional affects will be significant "*both* in the period before 10,000 years and in the longer term." *See* NEV Petition at 241 (emphasis added). In addition, as discussed above, Nevada has provided no explanation as to why the observational data provides a basis for its contention. Similarly, Nevada does not explain why the *Stuewe et al.* demonstrates that erosion will be of significance in the next 10,000 years, nor does it explain how, based on the two observed debris flows and the Stuewe *et al.*, ongoing erosion processes "will be of significance to safety assessment . . . ." *See* NEV Petition at 241. Because Nevada has not provided support as required by 10 C.F.R. § 2.309(f)(1)(v), these bare assertions cannot support the admission of this contention. *See Fansteel*, CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires

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[48] For publication status information *see* http://www.sciencedirect.com/science/article/B6V93-4VGF3NB-1/2/1f8b3fd15e57e8b4b7dca39390ec5c6a.

that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC*. (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

Nevada asserts that "sufficient information" is available "to believe that DOE's exclusion of the erosion FEP . . . on the ground of low consequence is incorrect." NEV Petition at 242. Pursuant to the Commission's regulations, FEPs must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the accessible environment, would be significantly changed by their omission. 10 C.F.R. § 63.114(e). Nevada does not provide supporting facts or reasoning nor has it argued that exposure would be significantly changed by exclusion of this FEP. *See* 10 C.F.R. § 63.114(e). Thus, Nevada fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) because its assertion that it was incorrect for DOE to exclude this FEP is not supported by sufficient information to show that a genuine dispute exists. *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada contends that based on observational data and erosion modeling, "ongoing erosion processes will be of significance to the safety assessment both in the period before 10,000 years and in the longer term" because it will affect infiltration flux, seepage and operation, and may expose emplacement drifts. NEV Petition at 241-42. However, the effects of erosion on infiltration need not be considered for performance after 10,000 years because deep percolation rates are proposed to be specified by Part 63, not by a process model for surface infiltration. *See* Implementation of a Dose Standard After

10,000 Years, 70 Fed. Reg. 53,313 (Sept. 8, 2005). SECY-08-0170, Final Rule: 10 CFR Part 63, "Implementation of a Dose Standard After 10,000 Years" (RIN 3150-AH68), (Nov. 4, 2008) (ADAMS Accession No. ML082270760). To the extent that NEV-SAFETY-41 challenges post-10,000 year considerations, this contention is inadmissible because "Licensing Boards 'should not accept in individual license proceedings contentions which are . . . the subject of general rulemaking by the Commission.'" *See Duke Energy Corp*. (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345 (internal citations omitted); *see also Wisconsin Electric Power Co*. (Point Beach Nuclear Plant, Unit 2), ALAB-78, 5 AEC 319 (1972) (stating "no challenge of any kind is permitted. . . as to a regulation that is the subject of ongoing rulemaking.").

Finally, NEV-SAFETY-41 seeks to raise a dispute with SAR subsection 2.2.1.1 and 2.2.1.2 and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. See Commonwealth Edison Co. (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp*., (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it

should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-41 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-42 - VALIDATION OF UNSATURATED ZONE FLOW MODEL BY SIMULATION OF NATURAL CHLORIDE DISTRIBUTION IN PORE WATERS

> In SAR Subsection 2.3.2.5.1.2 and related subsections the method for validating the unsaturated zone (UZ) flow model with observed chloride contents of pore waters makes an unexplained assumption about the chloride content of net infiltration; this means that uncertainties in the method have not been adequately addressed and that alternative models have not been adequately represented.

NEV Petition at 244. The contention claims that because (1) DOE used chloride data from pore waters to "validate" its site-scale UZ flow model, but does not explain assumptions related to chloride concentrations for model input and (2) there is a poor fit between modeled depth profiles of chloride and measured chloride concentrations, uncertainties and alternate models have not been adequately addressed. NEV Petition at 244-246.

Staff Response

This contention fails to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention that is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations" is not admissible. *USEC*, *Inc.* (American Centrifuge), CLI-06-10, 63 NRC 451, 455 (2006) (citation omitted).

Nevada, citing articles and a DOE TSPA document, challenges "the degree of confidence claimed" for the UZ flow model used to calculate percolation of water towards the repository drifts and drift seepage, which affects the physical and chemical environment of engineered barriers (i.e., corrosion) and transport of any escaping radionuclides into the saturated zone. *See* NEV Petition at 245-246. Nevada claims that the distribution of chloride contents in pore waters through the UZ is simulated with a model and the results of the simulation are compared with measures chloride contents "to validate the reliability of the model" used to calculate percolation into the repository. NEV Petition at 246 (citing DEN0011572665, "UZ

Flow Models and Submodels, MDL-NBS-HS-000006 REV03," (12/21/07), Section 6.52 at 6-68 through 6-79). Nevada also claims that modeled profiles depend on unexplained or unjustified assumptions about evapotranspiration (the loss of water due to evaporation and plant uptake) which results in underestimating uncertainties and failure to consider possible alternative infiltration models and estimates, NEV Petition at 246, and argues that the "fit" between modeled depth profiles of chloride and measured chloride concentrations (represented by calculated residuals) is poor in "several cases," NEV Petition at 247.

Nevada states that input chloride concentrations (in the net infiltration water flux) for the UZ site-scale flow model are much higher than concentrations in precipitation because of evapotranspiration, and that spatial variability in modeled profiles are strongly dependent on assumptions made about evapotranspiration, see NEV Petition at 246. Nevada neither cites nor discusses the DOE analysis used to incorporate evapotranspiration as described in SAR Section 2.3.2.3.4.1 (at.2.3.2-31 and 2.3.2-32). This SAR section references Section 6.5.1.2 of "UZ Flow Models and Submodels Report" (LSN# DEN001572665), which describes the calculation of the spatially variable input for chloride flux that accounts for evapotranspiration. Nor does Nevada cite the SAR (at 2.3.2-37 and 2.3.2-65), which addresses chloride spatial variation as influenced by lateral flow and diffusion-dispersion processes by describing the relation between point measurements and the "average" values used in large-scale models. Thus, Nevada lacks support for its position that evapotranspiration assumptions are not addressed in the SAR and Nevada offers no explanation why DOE's analysis for estimating the average chloride content for incoming (top of the profile) water is inadequate. Therefore, the contention is not supported.

In addition, the premise of the contention, that DOE uses chloride data to validate its UZ model, is misplaced. Nevada cites one sentence in a TSPA document, overlooking sections and summaries in the SAR and the cited report. *See* NEV Petition at 245 (citing UZ Flow Models and Submodels, LSN# DEN001572665, at 6-64), For example, SAR Sections

2.3.2.1 (at 2.3.2-5 - 2.3.2-6), 2.3.2.3.4.1, 2.3.2.3.5.5 (at 2.3.2-37 – 2.3.2-38), and 2.3.2.4.1.2.4.5 indicate that chloride data are not used for model validation, but instead used to calculate probability weights for incorporating uncertainty of percolation rates. The TSPA document cited by Nevada provides a similar description of how the chloride data are used. *See* "UZ Flow Models and Submodels" at Section 6.8 at 6-108 to 6-124, Section 6.5 at 6-63 to 6-79. Figures cited by Nevada, see NEV Petition at 246-247 citing "UZ Flow Models and Submodels, DEN001572665, Figures 6.5-1 through 6.5-11) illustrate the uncertainty captured by the abstraction. No mention of UZ flow model validation is made in the text associated with the figures. Thus, the concern raised by the contention is not supported.

The contention is not supported by expert opinion. The Affidavits of Adrian Bath, Adrian Butler, and Don Shettel contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 4, Affidavit of Adrian H. Bath; Attachment 6, Adrian P. Butler; Attachment 10, Affidavit of Don L. Shettel, Jr. However, these affidavits do not set forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion (and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized).

In sum, Nevada's contention is not supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute with the Applicant on a Material Issue

To raise a genuine dispute with the applicant on a material issue of law or fact, a petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the

Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.") (internal citations omitted). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 328, 333-34 (quoting Rules of Practice 54 Fed. Reg. at 33,172).

Although Nevada criticizes the comparison of modeled and measured chloride values and "unexplained assumptions about the chloride content of net infiltration," Nevada does not address other portions of the SAR that discuss DOE modeling assumptions related to evapotranspiration and chloride concentration comparisons or DOE's use of chloride data to account for uncertainty. *See* SAR at 2.3.2-31 to -32; SAR at 2.3.2-65. The contention cites SAR Section 2.3.2.5.1.2, a subsection in the Section 2.3.2.5, "Confidence Building and Model Abstraction," to support its claim that DOE uses chloride data to "validate" the UZ flow model. *See* NEV Petition at 244. This section does not mention the use of chloride data for UZ flow model validation. DOE uses chloride data to calculate probability weights for different flow fields, and thus different percolation rates, to incorporate uncertainty in the TSPA. *See* SAR Sections 2.3.2.4.1.2.3, 2.3.2.4.1.2.4.5, and 2.3.2.4.2. Thus, Nevada fails to raise a genuine dispute with the Applicant.

In addition, Nevada does not proffer information that indicates that uncertainties have not been adequately addressed or that adoption of alternative approaches would significantly change radiological exposures to the RMEI, or radionuclide releases to the accessible environment. Nevada fails to provide any analysis or reference that supports its proposition that uncertainty (associated with chloride data) in DOE's method of modeling flow in the UZ are significant. Consequently, the contention does not raise a genuine dispute as to a material issue of law or fact and fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 248, does not satisfy the showing required to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi). The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 42 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 248. To the extent that the reference is interpreted to state objections to aspects

of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." The "burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 248. Therefore, with respect to this part of NEV-SAFETY-42 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.2.5.1.2 and "related" subsections. NEV Petition at 244, 247. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

For the above reasons, the contention should be rejected.

NEV-SAFETY-43 - VALIDATION OF UNSATURATED ZONE FLOW MODEL BY CARBON 14 CONTENTS, STRONTIUM ISOTOPE COMPOSITIONS AND CALCITE MINERAL PRECIPITATE ABUNDANCES

> Uncertainties in the interpretations of carbon-14 contents in the gas phase of the unsaturated zone (UZ), in strontium (Sr) contents and strontium isotope compositions of pore waters, and of the amounts of calcite mineral that have accumulated in pore spaces could be greater than calculated by DOE as described in SAR Subsection 2.3.2.5.1.2 and related subsections, and assumptions and simplifications have not been explained, so the support that these data sources give to the UZ flow model and to the low values of modeled infiltration rates is weak.

NEV Petition at 249. Although vague, it appears that Nevada's contention claims that uncertainties in certain data "could be greater than calculated by DOE," and unexplained "assumptions and simplifications" make the data weak support for the DOE UZ flow model (and low infiltration values). NEV Petition at 249.

Staff Response

For the reasons cited below, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for a petitioner's allegations." *See USEC*, *Inc.* (American Centrifuge), CLI-06-10, 63 NRC 451, 455 (2006).

Nevada supports its challenge to the "degree of confidence claimed for the [UZ] flow model" with respect to C-14 by referencing information related to DOE's use of measured C-14 data for simulated travel times for seepage, and arguing that infiltration rate and seepage *could* affect the physical and chemical environment of engineered barriers and percolation rates below the repository. *See* NEV Petition at 251-52. Nevada does not provide a technical explanation, analysis, or calculation to support its concerns regarding the adequacy of DOE comparisons of strontium and strontium isotopes in pore water, and calcite

accumulations. Nevada claims that "uncertainties and assumptions" related to strontium abundance in calcite, Sr isotopes ratios, and calcite precipitates do not support DOE's estimated percolation rate, *see* Petition at 249, but does explain the basis for its position. *See id.* As a petitioner, Nevada has the responsibility to provide information necessary to comply with contention admission requirements and this Board should not infer unarticulated bases of contentions. *See USEC*, CLI-06-10, 63 NRC at 457 (boards should not search through pleading or other materials to uncover matters not advanced by petitioners). Bare assertions and speculation are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)). Thus, the Staff objects to the admission of the contention to the extent Nevada seeks to challenge strontium and calcite comparisons.

The contention is not supported by an expert opinion. The Affidavits of Drs. Adrian Bath, Don Shettel, and Maurice Morgenstein contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 4, Affidavit of Adrian H. Bath; Attachment 10, Affidavit of Don L. Shettel, Jr.; and Attachment 17, Affidavit of Maurice E. Morgenstein. However, none of the affidavits sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion (and the basis for that opinion). *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). The alleged deficiencies in C-14 data interpretations as well as DOE's comparison of strontium (or strontium isotope) and calcite mineral accumulation data, *see* NEV Petition at 249-251, are not supported by these affidavits.

Thus, Nevada has not provided alleged facts or expect opinion to support its concern regarding strontium and calcite, as required by 10 C.F.R. § 2.309(f)(1)(v), and has not provided expert opinion to support its concerns regarding C-14.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, a petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328 at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada does not specifically address the information DOE provided that accounted for uncertainties in strontium concentrations or calcite accumulations. SAR Section 2.3.2.5.1.2 at 2.3.2-86, which references "UZ Flow Models and Submodels," MDL-NBS-HS-000006 REV 03, LSN# DEN001572665, Section 7.6.3 at 7-23 to 7-28 and Section 7.7.4.3 at 7-35 to 7-36, contains a summary of DOE's approach. Section 7.6.3 of the "UZ Flow Models and Submodels" indicates that the DOE sensitivity analyses considered uncertainty in percolation

and sorption coefficient (which controls Sr exchange between liquid and solid). Although Nevada cites this document, it does not discuss this information. See NEV Petition at 251. Section 7.6 and Figures 7.6-1 and 7.6-2 of "UZ Flow Models and Submodels," also shows measured strontium concentrations plotted against various concentrations calculated by the DOE model in the sensitivity analysis. For calcite precipitation, the document indicates that uncertainties in calcite were accounted for by using different net infiltration rates (including upper and lower bounding rates) in the calcite model. *S*ee "UZ Flow Models and Submodels," Section 7.7.4.3 at 7-35 and 7-36.

Nevada claims that travel times derived from DOE's model simulations are higher than measured C-14 ages, see NEV Petition at 251, but information in the SAR (at 2.2.3-88) indicates that the percolation rates calculated using the C-14 data are less than the net infiltration rates used in DOE's model. As to Nevada's claim that uncertainties were not considered because measured C-14 values are single values and not ranges, *see* NEV Petition at 251, Nevada does not address the information in Section 7.5.3 of "UZ Flow Models and Submodels" (a document that Nevada cites), which shows DOE compared C-14 ages against the 10th and 30th percentile UZ flow, a method of incorporating uncertainty in the model. Thus, Nevada fails to raise a genuine dispute as to whether uncertainties were considered.

In essence, Nevada has not provided a reasoned basis to characterize the extent to which C-14 travel times have been overestimated or the significance of the overestimate with respect to repository performance during the compliance period. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 253 does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is

referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC at 203 (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 43 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 253. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a

good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 253. Therefore, with respect to this part of the NEV-SAFETY-43 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.2.5.1.2 and "related" subsections. NEV Petition at 249, 252. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334.

Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contentions does not satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi) and should not be admitted.

NEV-SAFETY-44 - FLOW IN THE UNSATURATED ZONE FROM EPISODIC INFILTRATION

> Screening of FEP 2.2.07.05.0A "Flow in the [unsaturated zone] from episodic infiltration" from performance assessments in SAR Subsection 2.2.1.2 and related subsections and as specifically stated at SAR Table 2.2-3 at 2.2-127 is not justified.

NEV Petition at 254. In the contention, and its basis, Nevada asserts that DOE improperly screened out the FEP, "Flow in the UZ from episodic infiltration" because "chlorine-36 data from wall rock in the ESF tunnels indicate fast pathways for infiltration of water from episodic high-precipitation events persist through the UZ to repository depth, with local infiltration considerably more than the assumed average flux of 32 mm/yr. NEV Petition at 254.

Staff Response

The Staff opposes the admission of this contention as inadmissible under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for a petitioner's allegations." *See USEC*, *Inc.* (American Centrifuge), CLI-06-10, 63 NRC 451, 455 (2006).

Nevada claims episodic infiltration with transiently high rates of downwards movement of pore water "would potentially change the overall rate of infiltration and seepage at and below repository depth," affecting the corrosion rate of engineered barriers and the rate of radionuclide transport through the lower portion of the UZ. NEV Petition at 255. Nevada rejects DOE's view that this flow is damped in the non-welded Paintbrush Tuff unit (PTn) and that variability of infiltration rates below the PTn are not significantly different from the longer term average of 17mm/yr, claiming that fast pathways (amounting to 1% of total water infiltration) are not negligible and should be considered. NEV Petition at 255-57.

Nevada makes the conclusory assertion that DOE's conclusion that such pathways are

negligible is inconsistent with Cl-36 data, but admits that the proportion of infiltration that [fast pathways] could represent is not quantifiable. *See* NEV Petition at 256.

Although Nevada cites DOE and other documents, information provided in support of this contention is grounded upon Nevada's speculative assertions regarding episodic infiltration and fast pathways. Nevada roughly estimates a higher infiltration rate, *see* NEV Petition at 256, but does not provide an analysis that supports a conclusion that the total flux of infiltrating water would be greater than current DOE estimates or that the portion of infiltration attributed to fast pathways would affect the magnitude *and* time of radiological exposures to the RMEI, or that radionuclide releases to the accessible environment would be *significantly changed* by the omission of this FEP. *See* 10 C.F.R. § 63.114(e). Bare assertions and speculation are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

The contention is not supported by expert opinion. The Affidavits of Drs. Adrian Bath and Adrian Butler contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 4, Affidavit of Adrian H. Bath; Attachment 6, Affidavit of Adrian P. Butler. However, neither affidavit sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized).

In sum, Nevada's contention is not supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Although Nevada postulates that episodic infiltration would potentially change the overall rate of infiltration and seepage, it does not proffer information that supports its assertion that the inclusion of the FEP would make a difference in the outcome in the proceeding. Nevada does not show that uncertainties associated with Cl-36 data raise a genuine dispute concerning DOE's conclusions that episodic flow through fast pathways is "negligible" with respect to repository performance or that exclusion of the FEP would "result in a significant adverse change in the magnitude or time of radiological exposures . . . or radionuclide releases. . . ." *See* LSN# DEN001584824, at 6-935, 6-936. Nevada does not provide an analysis that supports a conclusion that the total flux of infiltrating water would be greater

than current DOE estimates or that the portion of infiltration attributed to fast pathways would affect the magnitude *and* time of radiological exposures to the RMEI, or that radionuclide releases to the accessible environment would be *significantly changed* by the omission of this FEP. *See* 10 C.F.R. § 63.114(e). Thus, Nevada has not proffered a reasoned basis that shows the significance of inclusion of the FEP with respect to the time or magnitude of radiological exposures to the RMEI or radionuclide releases, and the significance with respect to the compliance period. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 257, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 44 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention." NEV Petition at 257-58. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 257-58. Therefore, with respect to this part of the NEV-SAFETY- 44, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.2.1.2 and "related" subsections. NEV Petition at 254, 257. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi), and should not be admitted.

NEV-SAFETY-45 - EFFECTS OF EPISODIC FLOW

> SAR Subsection 2.3.2.4.2.1.2, and similar subsections, which states that one of the two primary large-scale processes that prevents or substantially reduces the movement of water through the unsaturated zone (UZ) and into the emplacement drifts of the repository is the damping of episodic pulses of precipitation and infiltration, fails to provide an appropriate technical basis for excluding FEP 2.2.07.05.0A (Flow in the UZ) from episodic infiltration as the effects of horizontal heterogeneity have not been adequately represented.

NEV Petition at 259. In the contention, Nevada asserts that screening of the FEP, Flow in the UZ from episodic infiltration, is unjustified, alleging that DOE inadequately modeled and characterized the effects of horizontal heterogeneity and incorrectly assumed that the Paintbrush nonwelded unit (PTn) attenuates episodic events sufficiently to support an assumed constant flow in the underlying Topopah Spring Tuff formation. NEV Petition at 259.

Staff Response

The Staff opposes admission of NEV-SAFETY-45 because it does not meet 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

The contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *USEC*, *Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 455 (2006) (citation omitted). Nevada does not meet this standard.

Nevada quotes portions of the SAR, claims that the studies DOE relied on did not consider the effects of horizontal heterogeneity in the PTn layer or "the large number of faults" in the rock formation, cites studies indicating the layer's stratigraphic variations and structural complexity and marked reductions in lateral flow, and argues the concern is greatest in those areas where the PTn layer is only a few tens of meters thick. NEV Petition at 261-62. Nevada alleges that a changed flow pattern "will affect both the amount and

composition of water impacting on the engineered barrier system with consequences for rates of corrosion and release and transport of radionuclides." NEV Petition at 262. Nevada, however, does not assert that the excluded FEP could *significantly* change radiological exposures or radionuclide releases.

The contention is not supported by expert opinion. The petition included affidavits of Drs. Adrian Butler, Don Shettel, and Howard Wheater, which state that each affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). *See* NEV Petition, Attachment 6, Affidavit of Adrian Butler; Attachment 10, Affidavit of Don Shettel; Attachment 13, Affidavit of Howard Wheater. However, none of the affidavits sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion (and the basis for that opinion), and to distinguish arguments (by counsel) from expert opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, Nevada's contention is not supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL*

Susquehanna LLC (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp*. (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Although Nevada disputes the adequacy of the justification for screening out the FEP based on damping, Nevada has not proffered a basis to conclude that inclusion of the FEP would make a difference in the outcome of the proceeding. Nevada does not address DOE statements in one of the documents cited that arguably address heterogeneity. "UZ Flow Models and Submodels," LSN#DEN001572665, indicates that (1) "[t]he three-dimensional model incorporates a wide variety of field-specific data for the highly heterogeneous formations at the site," *id.* 6-125, and (2) modeling results show that "a small percent of percolation of flux is diverted into faults," and that "[a]long fault columns, both lateral flow and rock water storage play an important role," *id.* at 6-126. Nevada's general assertion that the structural complexity of the PTn unit is not included in DOE models does not raise a genuine dispute with the Applicant.

In addition, statements in the SAR also indicate that DOE considered uncertainties in UZ flow and infiltration that could result from horizontal heterogeneity of the PTn unit. The SAR (at 2.3.2-96) indicates there is variability and uncertainty regarding the description of site conditions and that Section 2.3.2.3 considered a probabilistic range of properties, including distribution of fractures and faults, for the site-scale UZ flow model. The model also used alternative representation of flow through faults to account for uncertainties in flow. See SAR Section 2.3.2.6 at 2.3.2-96. Nevada general assertions to the contrary do not raise a

genuine dispute regarding DOE's method of addressing uncertainty.

Thus, Nevada has not proffered a reasoned basis that shows the significance of the alleged deficiency with respect to repository performance over the compliance period (*i.e.*, whether is would significantly increase radiological exposures to the RMEI, or radionuclide releases to the accessible environment). *See, e.g.,* 10 C.F.R. §§ 63.31(a)(2), 63.114(e) and 63.342.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 263, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 45 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 263. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 263. Therefore, with respect to this part of the NEV-SAFETY-45, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.2.4.2.1.2 and “similar” subsections. NEV Petition at 259. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In short, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(v) and (vi), and should not be admitted.

NEV-SAFETY-46 - EXTREME EVENTS UNDEFINED

> SAR Subsection 2.1.2.1.2, and similar subsections, which state that one of the two primary large-scale processes that prevents or substantially reduces the movement of water through the unsaturated zone (UZ) and into the emplacement drifts of the repository is the damping of episodic pulses of precipitation and infiltration, fail to provide an appropriate technical basis for excluding FEP 2.2.07.05.0A (Flow in the UZ from episodic infiltration) as the effects of extreme events on UZ flow have not been considered in a rigorous manner because an extreme event has not been formally defined or appropriately modeled.

NEV Petition at 264. In the contention and bases, Nevada asserts that the effects of extreme infiltration events on UZ flow and seepage have not been defined in a rigorous and defensible manner. *Id*.

Staff Response

The Staff opposes the admission of this contention because it does not meet the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *USEC*, *Inc.* (American Centrifuge), CLI-06-10, 63 NRC 451, 455 (2006) (citation omitted).

Nevada (citing SAR Subsection 2.3.2) claims that extreme episodic events used in DOE studies were arbitrarily selected (not defined in terms of return period, intensity or duration), claims that the majority of DOE's studies ignore heterogeneity and flow focusing, and claims that DOE's approach to scaling infiltration rates in other DOE's studies "neglects" nonlinearity of extreme conditions. NEV Petition at 265-67. The result, Nevada asserts, is that DOE "greatly underestimates" the ranges of infiltration, making model conclusions unreliable. *See* NEV Petition at 265-67. Although Nevada cites a DOE report that notes that net infiltration fluxes are expected to be dominated by extreme events with significant infiltration occurring

once in 10 or 20 years, NEV Petition at 266, Nevada does not offer information that suggests that inclusion of the FEP would significantly change the magnitude and time of exposures to the RMEI, or radionuclide releases to the accessible environment, or that DOE's treatment of the issue is inadequate. Nevada fails to provide information regarding the magnitude of, or return period for, what it considers extreme events or specific challenges to support its implication that episodic events "were arbitrarily selected" constitutes a deficiency in the DOE modeling approach. *See* NEV Petition at 266. Nor has Nevada provided any information that suggests more extreme events, with presumably longer return periods, would constitute a sufficiently large component of the overall water balance so as to affect performance at the repository scale. *See* 10 C.F.R. § 63.31(a)(2), 63.114(e).

The affidavits of Drs. Adrian Butler, Howard Wheater, and Stephan Matthäi, contain the statement that the affiant adopts as "his own opinion" statements made in certain sections of the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 6, Affidavit of Adrian P. Butler ¶ 2; Attachment 13, Affidavit of Howard S. Wheater ¶ 2; Attachment 21, Affidavit of Stephan K. Matthäi ¶ 2. However, none of the affidavits sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada's assertions regarding the alleged technical basis for excluding this FEP, *see* NEV Petition at 265-267, are not supported by these affidavits.

In short, Nevada's contention is not supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, Nevada must show that resolution of the dispute would make a difference in the outcome of the proceeding. *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-34 (1999). Although Nevada asserts that the effects of extreme episodic events have not be defined in a rigorous and physically defensible manner, *see* NEV Petition at 268, it does not provide supporting information or expert opinion that specifically addresses why omission of the FEP would make a difference in the outcome in the proceeding. Nevada has not proffered a reasoned basis that shows the time and magnitude of radiological exposures to the RMEI, or radionuclide releases to the accessible environment would be significantly changed with respect to the compliance period. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 268, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Dr. Michael Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition Attachment 3, Affidavit of Michael C. Thorne ¶ 3. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-46 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention . . . ." NEV Petition at 268. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 268. Therefore, with respect to this part of the NEV-SAFETY-46, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.1.2.1.2 and

“similar” subsections. NEV Petition at 264. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give [ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, this contention does not meet the requirements of 10 C.F.R. § 2.309(f)(1) and therefore it should be rejected.

NEV-SAFETY-47 - PHYSICAL BASIS OF SITE SCALE UNSATURATED ZONE FLOW

> SAR Subsection 2.3.2.4 and similar subsections, which describe the development of the site-scale UZ flow model, fail to provide a reasonable physical basis to support the characterization of the subsurface hydraulic properties at the site of the proposed repository and do not, therefore, provide reliable bounding estimates for drift seepage calculations under present and future climates.

NEV Petition at 269. Nevada asserts (with respect to the UZ flow model) that the parametric relationships used to represent the hydraulic properties of the "highly complex and heterogeneous layers of fractures and faulted tuffs" at Yucca Mountain, and the assumption of horizontal homogeneity, lack a reasonable physical basis and does not provide bounding estimates for drift seepage calculations. *Id*.

Staff Response

The Staff opposes the admission of this contention because it does not meet the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See USEC*, *Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 455 (2006) (citation omitted).

Nevada cites the SAR and studies while stating its claims that DOE's use of a numerical model to estimate seepage fluxes into emplaced waste canisters based on considering the fractures and volcanic tuff matrix as dual-permeability continuum, use of "horizontally homogeneous," and active fracture parameter (without a proper physical basis) to characterize hydraulic properties, is unreliable. NEV Petition at 270-74. Nevada summarily asserts that the parameters and simulated flow fields would not be valid for future climates and that there is a potential for corrosion of canisters (with radionuclide release and "impact on the RMEI") because certain FEPs have not been considered. NEV Petition at 274.

Although Nevada arguably proffers a minimally specific discussion with references to support its challenges to the physical basis for intralayer homogeneous properties or parametric relationship used for fractured and faulted tuff, Nevada does not provide an explicated basis for its concern about "future climate states with different infiltration rates," or the magnitude and time of resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the environment, would be significantly changed. *See* 10 C.F.R. § 63.114(e), (f).

The affidavits of Drs. Adrian Butler, Howard Wheater, and Stephan Matthäi, contain the statement that the affiant adopts as "his own opinion" statements made in certain sections of the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 6, Affidavit of Adrian P. Butler ¶ 2; Attachment 13, Affidavit of Howard S. Wheater ¶ 2; Attachment 21, Affidavit of Stephan K. Matthäi ¶ 2. However, none of the affidavits sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion). *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002)

(quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34, quoting 54 Fed. Reg. at 33,170.

Nevada claims that the matters identified indicate the omission of a relevant FEP and alternate models, and that DOE's model lacks an adequate technical basis for characterizing subsurface hydraulic properties and fails to provide bounding estimates for drift seepage calculations. NEV Petition at 274. Nevada's apparent preference for use of a discrete fracture network model (DFM) to capture the complexity of flow processes in a one cubic meter discrete fracture network, *see* NEV Petition at 272, does not raise a genuine dispute. The SAR states that DFMs "are useful as tools for . . . modeling small scale systems, [but] are not feasible for dealing with large scale applications . . . ." *See* SAR Section 2.3.2.4.1.1.2 at 2.3.2-42. Nevada does not provide information that raises a genuine dispute regarding the adequacy of the active fracture model for large scale modeling or challenge DOE's analysis of DFM efficacy at SAR 2.3.2.4.1.1.2 at 2.3.2-42.

Nevada alleges that the UZ flow model lacks (a) physical bases for parameters, (b) consideration of alternative numerical approach (discrete fracture model instead of the dual-permeability model), (c) validity of the both the constitutive relations and Richards equation for fracture networks, and (d) bases for homogeneous layers. *See* NEV Petition at 270-74. Thus, Nevada apparently disagrees with the distribution of flow between fractures and matrix, with the spatial variability of percolating water approaching the emplacement drifts, or the uncertainty of percolation rates. Nevada, however, does not provide an analysis

which shows how the issues it raises would affect percolation rates, distribution, or subsequently seepage into drifts. In addition, the SAR indicates that the seepage model puts all percolating water into the fractures of the fracture-only continuum model, which is calibrated to flux rates in field injection tests. *See* SAR Section 2.3.3.2 at page 2.3.3-17. Nevada does not dispute this approach and has not otherwise proffered information which provides a basis to conclude that the magnitude *and* time of radiological exposures, or radionuclide releases, would be significantly changed as a result of the issue it raises. *See* 10 C.F.R. §§ 63.31(a)(2), 63.114(e) and (f). Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 275, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Dr. Michael Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition Attachment 3, Affidavit of Michael C. Thorne ¶ 3. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 47 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 275. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 275. Therefore, with respect to this part of the NEV-SAFETY- 47, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.2.4 and "similar" subsections. NEV Petition at 269, 274. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those

unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi), and should not be admitted.

NEV-SAFETY-48 - MULTI-SCALE THERMAL-HYDROLOGIC MODEL

> SAR Subsection 2.3.5.4, and similar and related subsections, which state or assume that the multi-scale thermal-hydrologic model accurately models the movement of heat and mass (liquids and gases) from the in-drift to the mountain scale, are incorrect because they ignore the presence of ground support items, especially the hundreds of thousands of ungrouted super Swellex-type stainless steel rock bolts that are to be installed in the emplacement drifts.

NEV Petition at 276. Nevada asserts that DOE's multi-scale thermal-hydrologic model does not accurately model heat and mass transport because it ignores the planned installation of rock bolts (a part of the ground support system) that could affect processes at a drift scale. NEV Petition at 276.[49]

Staff Response

This contention is not admissible because it does not meet the requirements of 10 C.F.R. § 2.309.

10 C.F.R. § 2.309(v): *Concise Statement of Supporting Facts or Expert Opinion*

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An "expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See USEC*, *Inc.,* CLI-06-10, 63 NRC at 455 (citation omitted).

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[49] The Staff notes that NEV-SAFETY-123 alleges that rock bolts will not last 100 years, which if true, would make this contention irrelevant. *See* NEV Petition at 658.

Nevada argues that DOE's model ignores thousands of 54mm, Swellex stainless steel rock bolts (each installed in a 3m hole and expanded using water pressure) could result in "unknown amounts of water sealed inside" the tubes, having the "potential to change heat distribution around the emplacement drifts, gas phase movement and saturation patterns in drift wall rocks." NEV Petition at 278. The Nevada states a TSPA document indicates Bernold-type liners have a small effect on drift wall emissivity that is within the variations of thermal conductivity of drift wall rocks. NEV Petition at 278-79. (citing "Total System Performance Assessment Data Input Package for the Multiscale Thermohydrologic Model: TDR-TDIP-NF-000008_REV00_ Final" (LSN# DN2002426865 at 47). Nevada also states that only the six upward tilted rock bolts (from the drift wall) per vertical cross-section of the drift "may show this [heat pipe] behavior." NEV Petition at 278 Nevada, however, does not provide an analysis or reference that supports its position that rock bolts could significantly change heat and mass transfer process. Rather, the statement that the effect of the liners "would be within the variations of thermal conductivity of drift wall rocks" would appear to contradict Nevada's position. Thus, the contention is not supported.

The Affidavits of Don L. Shettel, Jr. and Stephan Matthäi contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 10, Affidavit of Don L. Shettel, Jr.; Attachment 21, Affidavit of Stephan K. Matthäi. However, none of the affidavits sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16 (2004) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [, and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

As discussed above, Nevada proffers conclusory statements about the "heat pipe" effect of rock bolts and that it would have a significant effect on heat and mass transfer processes. Such assertions are not sufficient to raise a genuine dispute with the applicant. See Fansteel, Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing GPU Nuclear, Inc. (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)). Nevada offers no analysis or reference to support its statements that rock bolts will play a significant role in heat and mass transport and information cited by Nevada, appears to contradict its position that ground support items are significant contributors to this effect. See NEV Petition at 278-279 ("Bernold-type liners have a small effect on drift wall emissivity,

increasing the temperature difference between the drift wall and drift shield, but the effect is within the variations of the thermal conductivity of the drift wall rocks." (citing LSN# DN2002426865 at 47). Nevada has not raised a genuine dispute concerning the drift-scale effects of rock bolts and does not indicate resolution of this issue would make a difference in the outcome of the proceeding. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 279-80, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.*, 58 NRC 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 48 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 279-80. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond

the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Company* (Zion Nuclear Power Station Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 279-80. Therefore, with respect to this part of the NEV-SAFETY-48 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.5.4 and "similar and related" subsections. NEV Petition at 276. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar and related” to the named section. *See Commonwealth Edison*, CLI-99-4, 49 NRC at 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi) and should not be admitted.

NEV-SAFETY-49 - MODELS OF FLUID MOVEMENT IN THE UNSATURATED ZONE

> SAR Subsections 2.3.2 and 2.3.5.3, and similar and related subsections, which state or assume diametrically opposed methods of aqueous fluid movement in the unsaturated zone, are inconsistent with each other and will give rise to different chemical results for seepage waters that may contact the engineered barrier systems at some future time.

NEV Petition at 281. Nevada asserts that DOE uses two contradictory flow models— fracture flow in the densely welded Topopah Spring Tuff (TSw) and plug flow in analyzing near-field chemistry—that yield different chemical results for seepage waters that will contact the engineered barrier system after repository closure, thus making the overall model invalid. NEV Petition at 281.

Staff Response

This contention is inadmissible because it fails to meet 10 C.F.R. § 2.309(f)(1) standards.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention is not be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id*. at 455 (citation omitted).

Nevada asserts SAR 2.3.5.3 identifies DOE's use of plug flow (in the near-field chemistry model) for the Topopah Spring Tuff (TSw), which implies there is a total equilibration between water flowing in fractures and that in the matrix of rock, while SAR 2.3.2 indicates that fracture flow is the predominate method of fluid in the same densely welded unit (TSw).

NEV Petition at 283. Nevada states that limited interaction between fracture and matrix water suggest that their chemistry is different and that the "chemistry of matrix water cannot be used to predict the potential chemistry of seepage water the may contact the engineered barrier system in the future. NEV Petition at 283. Nevada proffers information to suggest that water chemistry may differ under the two flow models, but it does not offer any discussion or reference that addresses the significance of the differences with respect to radiological exposures or radionuclide releases. *See* NEV Petition at 282-83. To that extent, the contention is not supported.

The Affidavits of Adrian Bath, Adrian Butler, and Don Shettel state that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 4, Affidavit of Adrian H. Bath; Attachment 6, Affidavit of Adrian P. Butler; and Attachment 10, Affidavit of Don L. Shettel, Jr. However, none of the affidavits sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC, Inc.*, CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16 (2004) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus it does not appear that statements in the petition are supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3),

CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Final Rule, Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). See also PPL Susquehanna LLC (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the licensing proceeding.'" Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328 at 333-34 (quoting Final Rule Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Although Nevada identifies a potential conflict in DOE's flow modeling, it does not provide any facts or expert opinion that indicate the "conflict" would makes a difference in the outcome in the proceeding. Nevada has not proffered a reasoned basis that shows the significance of the alleged deficiency with respect to the magnitude or time of radiological exposures to the RMEI or radionuclide releases to the accessible environment during the compliance period. In addition, Nevada does not raise a genuine dispute as to DOE's reasons for using the two models. Nevada does not address DOE's position that there is compositional equilibrium between the matrix and fracture waters, which arguably supports the use of plug flow for the purpose of calculating water chemistry. *See* SAR at 2.3.5-30. The SAR also indicates that the plug flow model is a simplification of the fracture flow model and that there are minor differences in the transport times simulated using the matrix-fracture flow and plug flow. See SAR at 2.3.5-43 to 2.3.5-44. Thus, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's

dose standards" could only be performed by DOE, *see* NEV Petition at 284, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 49 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 284-85. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves."

Commonwealth Edison Co. (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 284-85. Therefore, with respect to this part of the NEV-SAFETY-49 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.2 and 2.3.5.3 and "similar and related" subsections. NEV Petition at 281. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194. ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ]

them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contentions does not satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi), and should not be admitted.

NEV-SAFETY-50 - ALTERNATIVE DISCRETE FRACTURE FLOW MODELS

> SAR Subsection 2.3.2.3 and similar subsections demonstrate that DOE has not used discrete fracture network models, which are in common use for representing water flows and radionuclide transport in fractured rocks in the context of post-closure performance assessments; as a consequence, the DOE approach introduces a bias into the TSPA because flow focusing and peak flow rates are underestimated whereas transport distances and times are overestimated.

NEV Petition at 286. In the contention, Nevada asserts DOE's dual porosity conceptual modal for fluid flow "poorly approximates" fracture flow and solute transport, while a discrete fracture model would better represent measured physical characteristics at Yucca Mountain. *Id*.

Staff Response

This contention is not admissible under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). This contention is only partially supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See USEC*, *Inc.,* CLI-06-10, 63 NRC at 455 (citation omitted).

Nevada, citing the SAR and articles, claims that DOE's dual porosity model underestimates flow focusing and overestimates transport distances and times, and that the discrete fracture network (DFN) model "could overcome . . . deficiencies" (such as the failure of the model to adequately represent fractures and faults) and "avoid use of the assumptions

associated with the volume averaging" that result in underestimates. *See* NEV Petition at 287-88. Nevada also argues that, contrary to SAR statements, sufficient data are available to build "realistic" DFN models for Yucca Mountain, and a comparison between a DFN and a simplified dual porosity model provided inconclusive results. *See id.* at 289-90. Nevada does not proffer information that shows the use of the DFN model would have a significant effect on repository performance during the post-closure period.

The affidavits of Drs. Adrian Butler and Stephan Matthäi, contain the statement that the affiant adopts as "his own opinion" statements made in certain sections of the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 6, Affidavit of Adrian P. Butler ¶ 2; Attachment 21, Affidavit of Stephan K. Matthäi ¶ 2. However, neither affidavit sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL*

Susquehanna LLC (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34, quoting 54 Fed. Reg. at 33,170.

Although Nevada argues that sufficient data are available to build "realistic" DFN models for Yucca Mountain, and a comparison between a DFN and a "simplified" dual porosity model was "inconclusive," *see* NEV Petition at 289-90, Nevada does not specifically address other DOE reasons for choosing its model. The SAR indicates that DOE uses a "dual permeability site-scale [UZ] flow model" (not a dual porosity conceptual model) to realistically incorporate processes likely to affect site performance. *See* SAR Section 2.3.2.1 at 2.3.2-5. The SAR also indicates that discrete fracture model was considered not "suitable for large-scale fractured systems" such as the Yucca Mountain unsaturated zone for number of reasons. *See* Section 2.3.2.4.1.2 at 2.3.2-42. Because Nevada does not address these statements in the SAR, Nevada does not raise a genuine dispute concerning the application. In addition, Nevada asserts that DOE's dual porosity abstraction underestimates the dose to the RMEI, NEV Petition at 290, but it does not provide an analysis that reveals the basis for its conclusion. It also does not explain how model(s) it advocates would produce a different result or make a difference in determining whether the repository meets the dose standard during the post-closure period. Thus, Nevada does not provide information that raises a genuine dispute. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 290-91, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Dr. Michael Thorne

is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne ¶ 3. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 50 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention…." NEV Petition at 560. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a

good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 290-91. Therefore, with respect to this part of the NEV-SAFETY-50, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.2.3 and "similar" subsections. NEV Petition at 286, 290. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. As stated above, if Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it

disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi) and should not be admitted.

NEV-SAFETY-51 - POTENTIAL CONVECTIVE SELF ORGANIZATION OF 2-PHASE FLOW

> The simulation grids used in the mountain-scale thermal-hydrologic seepage model (see SAR Subsections 2.3.2 and 2.3.3.3.1, and similar subsections; see also Wu, Y.S.; Mukhopadhyay, S.; Zhang, K.; and Bodvarsson, G.S. (2006), "A Mountain-Scale Thermal-Hydrologic Model for Simulating Fluid Flow and Heat Transfer in Unsaturated Fractured Rock," JOURNAL OF CONTAMINANT HYDROLOGY, Vol. 86 at 128-159, Fig. 2 are too coarse to capture the spatial self-organization and accompanying localization of single and two-phase (steam and condensed water) flow which is likely to occur in the thermal loading phase of the repository.

NEV Petition at 292. Nevada asserts that grid for DOE's mountain scale thermal-hydrologic seepage model grid is too coarse to represent the spatial self-organization and accompanying localization of single- and two-phase flow in the thermal loading phase of the repository. *Id*.

Staff Response

The Staff submits that the contention should be rejected because it does not meet the admissibility standards in 10 C.F.R. § 2.309(f)(1), as explained below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *Id.* at 455 (citation omitted).

Nevada, citing the SAR and articles, claims that (1) the resolution is too coarse to capture drift scale flow instabilities that can grow in size to repository scale, (2) there are no

convergence test results that demonstrate that a mountain-scale with enhanced resolution will yield the same flow, saturations patterns and localized flow expected to occur in the thermal phase following repository closure, and (3) the model cannot resolve localized flow (in sub-meter scale vents) or convective circulation in the plane of permeable faults, rendering "DOE's thermal-hydrologic simulations results . . . inconclusive." NEV Petition at 294-96. These statements do not address what impact the alleged model deficiency would have on an analysis of repository performance. Thus the contention is not supported. Nevada does not define what it considers "too coarse" to mean and what values for grid refinement it would have found more acceptable or if a more spatially refined grid would have produced results different from those produced by DOE. Nevada's statement that "DOE's thermal-hydrologic simulation results are inconclusive" is speculative and highlights Nevada's lack of support for its assertions that the grid spacing is "too coarse to capture drift scale flow instabilities." *See* NEV Petition at 294, 296.

The affidavits of Adrian Butler and Stephan Matthäi state that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 6, Affidavit of Adrian P. Butler ¶ 2; Attachment 21, Affidavit of Stephan K. Matthäi ¶ 2. However, neither affidavit sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34 (1999), quoting 54 Fed. Reg. at 33,170.

Nevada states general criticisms about the coarseness of the model and limitations in higher resolution, for example that two dimensional thermal-hydrologic simulations models noted in the SAR do not contain "first order, heterogeneities like faults." *See, e.g.,* NEV Petition at 294, citing SAR Subsection 2.3.3.3.3.1 and Fig.2.3.3-35. But Nevada does not proffer a reasoned basis that shows the significance of the alleged deficiencies with respect to projected radiological exposures, or radionuclide releases, during post-closure period. Also, Nevada proffers no information to show that the model it prefers would yield results that significantly differ from those simulated by the DOE model. Nevada's statement that "DOE's thermal-hydrologic simulations [are] inconclusive," see Petition at 296, is vague and highlights that Nevada lacks support for its assertions that the grid spacing is "too coarse to capture drift scale flow instabilities." Thus, Nevada fails to raise a genuine dispute regarding

the technical basis for the mountain-scale thermal-hydrologic seepage model. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's reference to "similar" SAR subsections fails to meet the § 2.309(f)(1)(vi) requirement that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." *See, e.g.,* NEV Petition at 276. The information proffered must include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention did not to meet criterion (vi) because it failed to reference a specific portion of the application).

Because Nevada does not identify the other "similar" subsections of the SAR it wishes to dispute, the contention fails to meet § 2.309(f)(1)(vi) with respect to those unidentified sections. The Board and parties should not have to guess which sections are "related." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). A petitioner must give notice of its specific grievance, allowing parties to discern claims they will either support or oppose. *See Oconee*, CLI-99-11, 49 NRC at 334. Given that Nevada has not identified the "similar and related" SAR subsections which it disputes, this contention, if otherwise deemed admissible, should be limited to raising a dispute only as to the specific SAR subsections that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2309(f)(1)(v) and (vi), and should be rejected.

NEV-SAFETY-52 - EBS AND NEAR-FIELD MODELING APPROACH

> SAR Subsection 2.3.3 and similar subsections describe a sequential and unidirectional linked modeling approach for the engineered barrier system and near-field that is untenable because that modeling approach suppresses emergent behavior and ignores the influence that coupled repository processes have on one another.

NEV Petition at 297. Nevada claims that DOE's engineered barrier system (EBS) and near-field modeling approach suppresses emergent behavior and ignores the influence of certain coupled processes in the host rock. NEV Petition at 297, 298-300.

Staff Response

The Staff submits that NEV-SAFETY-52 is inadmissible because this contention does not meet the contention standards under 10 C.F.R. §2.309(f)(1), as explained further below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted).

Nevada, citing the SAR and other documents, claims that DOE's modeling approach for EBS and near-field suppresses emergent behavior and ignores the influence of certain coupled processes. NEV Petition 298-300. However, the process discussed in support of this contention addresses only coupled processes in host rock. NEV Petition at 299 ("steam/moist air is likely to convect in the fractured rock mass rock, and where this steam

condenses it can bring seeping water to boiling, changing its path"). Nevada then makes the conclusory assertion that "vigorous" recirculation of liquid water and steam would "strongly" alter the composition and amount of water interacting with engineered barriers, but provides no citation or other analysis to support its assertion. *See* NEV Petition at 300. Accordingly, the contention is not supported by a minimally sufficient factual basis.

The affidavits of Adrian Butler and Stephan Matthäi contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 6, Affidavit of Adrian P. Butler ¶ 2; Attachment 21, Affidavit of Stephan K. Matthäi ¶ 2. However, neither affidavit sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC, Inc.,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16 (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-10, 66 NRC 1,

24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34, quoting 54 Fed. Reg. at 33,170.

Although Nevada claims that the referenced portion of the SAR indicates that DOE's modeling approach suppresses "emergent processes," the concern appears limited to host rock processes for seepage flux due vaporizing and condensing water flow. *See* NEV Petition at 298-300. The assertion that such circulation could increase radionuclide releases and doses is not supported by a reasoned discussion or analysis, or an indication of the significance of such increases. Also, Nevada does not address other portions of the SAR that indicate DOE has evaluated the effects of coupled thermohydrological processes. *See* SAR Section 2.3.3.3 at 2.3.3-57 to 2.3.3-59 (and BSC, "Drift-Scale Coupled Processes (DST and TH Seepage) Models," (2005) (LSN# DN2001895599), Section 6.1.1, Figure 6.1-1)) and the composition of thermally-perturbed seepage (*see* SAR Section 2.3.5.2.3 at 2.3.5-17 through 2.3.5-20). The SAR notes that the thermal seepage model was developed to be consistent with the ambient seepage model, Drift-Scale Coupled Processes (DST and TH Seepage) Models, LSN# DN2001895599, Section 6.2.1.1.2, p. 6-8 to 6-11; the latter incorporates small-scale processes through calibration with liquid-injection tests. Nevada does not challenge the adequacy of how the linked coupled processes were addressed, nor the adequacy of how small-scale processes were incorporated, but rather asserts that neither of these were represented. Therefore, Nevada has not raised a genuine dispute on a material issue that would make a difference in the outcome of the proceeding.

In addition, Nevada's reference to "similar" SAR subsections fails to meet the § 2.309(f)(1)(vi) requirement that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." The information proffered must

include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, L.L.C.* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (contention did not to meet criterion (iv) because it failed to reference a specific portion of the application). Because Nevada does not identify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet § 2.309(f)(1)(vi) with respect to those unidentified sections. The Board and parties should not have to guess which sections are involved. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). A petitioner must give notice of its specific grievance, allowing parties to discern claims they will either support or oppose. *See Oconee*, CLI-99-11, 49 NRC at 334. Given that Nevada has not identified the other SAR sections which it disputes, this contention, if otherwise deemed admissible, should be limited to raising a dispute only as to the specific SAR subsections identified.

In sum, the contention fails to satisfy 10 C.F.R. 2.309(f)(1)(v) and (vi), and should be rejected.

NEV-SAFETY-53 - APPLICATION OF THE FRACTURE MATRIX DUAL CONTINUUM MODEL TO ALL UNSATURATED ZONE FLOW PROCESSES

> In SAR Subsection 2.3.2.3 and similar subsections, DOE states that fluid flow in the fractured rock at Yucca Mountain is modeled using the dual continuum idealization in conjunction with the Van Genuchten relative permeability/capillary pressure model for the fractures, but experimental studies show that multiphase fluid flow through larger aperture fractures cannot be described by this model and this calls into question all of DOE's conclusions regarding in-drift seepage and infiltration rates.

NEV Petition at 301. Nevada asserts that DOE's modeling approach (dual continuum and Van Genuchten) for fracture and matrix flow is not appropriate to represent multiphase fluid flow through larger fractures. *Id*.

Staff Response

The contention does not meet the admissibility standards in 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted).

Nevada, citing the SAR and articles, claims that DOE research on fluid infiltration into fractures at Yucca Mountain indicates the model does not adequately represent multiphase fluid flow through larger fractures, but it does not provide any reference or discussion that supports its assertions that (1) DOE underestimates infiltration rates; (2) the "invasion

percolation" assumption, used in DOE models, is not relevant; or (3) "relative permeability experiments relating to fractures have identified flow regimes marked by saturation patterns that grow to the scale of experimental apparatus." *See* NEV Petition at 303-05. Accordingly, the contention lacks a minimally sufficient basis to support its admission.

The affidavits of Drs. Adrian Butler and Stephan Matthäi, contain the statement that the affiant adopts as "his own opinion" statements made in certain sections of the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 6, Affidavit of Adrian P. Butler ¶ 2; Attachment 21, Affidavit of Stephan K. Matthäi ¶ 2. However, neither affidavit sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16 (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that

mistakenly asserts the application does not address a relevant issue can be dismissed.”). A dispute is material “if its resolution ‘would make a difference in the outcome of the proceeding.’” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34, quoting 54 Fed. Reg. at 33,170.

Although Nevada criticizes the ability of DOE’s model to represent multiphase flow in the unsaturated zone, it does not proffer a reasoned basis that shows the significance of the alleged deficiencies with respect radiological exposures, or radionuclide releases, during post-closure period. Nevada’s conclusory statement that the results of DOE’s analysis may be “orders of magnitude too low” is not supported by a reference or analysis. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003), citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000). Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

Nevada’s reference to “similar” SAR subsections, *see* NEV Petition at 301, also fails to meet the requirement that a contention provide “sufficient information to show that a genuine dispute exists on a material issue of law or fact.” The regulations require that information proffered must include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (contention failed to reference a specific portion of the application).

Because Nevada does not specify which other “similar” section of the SAR it wishes to dispute, the contention fails to raise a dispute regarding those unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Board, Staff and Applicant should not have to guess which sections are involved. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our

adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). A purpose of the contention rule is to put other parties the on notice as to a petitioner’s specific grievances and claims they will be either support or oppose. *Oconee*, CLI-99-11, 49 NRC at 334. Given Nevada’s failure to identify additional SAR sections which it disputes, this contention, if otherwise found to be admissible, should be limited to raising a dispute only as to the specific SAR subsections identified.

In sum, the contention fails to satisfy 10 C.F.R. 2.309(f)(1)(iv) through (vi) and should be rejected.

NEV-SAFETY-54 - CONSTITUTIVE RELATIONSHIPS IN THE YUCCA MOUNTAIN INFILTRATION, THERMO-HYDROLOGIC, AND TSPA MODELS

> Whereas DOE's infiltration-, seepage- (see SAR Subsection 2.3.3 and related subsections), thermohydrologic- (see SAR Subsection 2.3.3.3 and related subsections), and TSPA models (SAR Subsection 2.3.3.4 and related subsections) are designed for steady-state conditions, infiltration, thermally driven flow, and fracture seepage have all been documented to be episodic and this means that conditions at Yucca Mountain lie outside the range of applicability of DOE's models .

NEV Petition at 306. Nevada asserts that the DOE infiltration, ambient seepage and thermal seepage models do not use or represent hysteretic properties for relative permeability and capillary pressure curves to model water flow through fractures because of the episodic nature of flow in the unsaturated zone at Yucca Mountain. *Id*.

Staff Response

The contention does not meet the admissibility standards in 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted).

Nevada, citing the SAR and other documents, criticizes DOE's use of a single set of curves for imbibition and draining cycles, and makes the conclusory assertion that if "physically realistic boundary conditions of episodic flow were introduced into the simulations, DOE's models would be used outside their range of calibration and therefore applicability."

NEV Petition at 308. Nevada claims that articles cited show that unstable regimes of fracture flow cannot be modeled with the relative permeability approach, but does not provide a discussion of those studies. *See* NEV Petition at 306. Nevada does not provide a reasoned basis for its implied assertion that the boundary conditions used by DOE are not physically realistic. Finally, Nevada asserts by referencing a voluminous text (without citing a specific page) that it is "standard practice in groundwater hydrology or reservoir engineering to use separate pairs of experimentally determined relative permeability and capillary pressure curves…." *See* NEV Petition at 308, citing Dullen, F.A.L. (1992) "Porous Media: Fluid Transport and Pore Structure," 2d ed., Academic Pres, San Diego. These statements are not minimally sufficient for contention admission.

The affidavits of Drs. Adrian Butler and Stephan Matthäi, contain the statement that the affiant adopts as "his own opinion" statements made in certain sections of the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 6, Affidavit of Adrian P. Butler ¶ 2; Attachment 21, Affidavit of Stephan K. Matthäi ¶ 2. However, neither affidavit sets forth a reasoned basis for Nevada's position, making it difficult to assess (or identify) each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n. 16 (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada has not provided any expert support for opinion statements made in paragraph 3 of this contention. *See* NEV Petition at 306-07. Thus, it does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the

Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34, quoting 54 Fed. Reg. at 33,170.

Nevada claims that its contention raises a genuine dispute as to whether DOE's models can simulate conditions at Yucca Mountain. *See* NEV Petition at 309. Nevada's statements regarding DOE's use of relative permeability and capillary pressure curves are largely conclusory and do not provide a reasoned basis that shows the significance of the alleged model deficiencies with respect radiological exposures, or radionuclide releases, during post-closure period. Failure to provide a reasoned basis for a contention deprives the Board of the ability to scrutinize the contention. See *USEC, Inc.*, CLI-06-10, 63 NRC at 472. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In sum, the contention fails to satisfy 10 C.F.R. 2.309(f)(1)(iv) through (vi) and should be rejected.

NEV-SAFETY-55 – DATA FOR THE CHEMISTRY OF PORE WATERS IN THE TOPOPAH SPRINGS (TPW) FORMATION

> Data for the chemical compositions (pH, alkalinity, nitrate) of pore waters in the Topopah Springs (TSw) rock formation, as used in SAR Subsection 2.3.5.3.2 and related subsections, are inadequate, because the data are incomplete and/or lack sufficient reliability.

NEV Petition at 311. In support of this contention, Nevada argues that DOE's use of 34 pore water samples, after screening out 91 samples, is an inadequate number of samples with which to understand the present and future variability of pore water compositions. *See* NEV Petition at 313-14. Also, Nevada argues that the lack of directly measured pH and bicarbonate levels renders the data incomplete, resulting in elevated uncertainty levels propagated into the modeling of in-drift salts and brines. *See* NEV Petition at 312-13. Nevada also asserts that DOE's sampling and screening process result in unreliable samples because some screened out waters showed microbial alteration and because extrapolated pH and alkalinity data was derived via incorrectly assumed variables. *See* NEV Petition at 313.

Staff Response

The Staff opposes the admissibility of NEV-SAFETY-55 because it fails to provide a concise statement of supporting facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v) and fails to demonstrate the existence of a genuine dispute of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, NEV-Safety-55 should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section § 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc.* (American Centrifuge Plant),

CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion.

Nevada observes that DOE applied a multi-step screening process to its 125 pore water samples to identify incomplete, unrepresentative, and microbially affected samples. *See* NEV Petition at 312-313. After the screening process was completed, DOE identified 34 acceptable pore water samples. *See* NEV Petition at 313. From these facts the expert argues:

> Best practice was evidently not being applied in allowing core samples to be stored and to have degraded in this way prior to extraction and analysis of pore waters. There must be doubt about the reliability of the chemical data for the selected 34 samples. This doubt applies especially to measured pH and alkalinity. . . because pH and alkalinity are particularly susceptible to microbial alteration as is admitted in DN2002452948, Section 6.6.3.

NEV Petition at 313 (emphasis added). These statements fail to provide any factual support for the proposition put forth by Nevada that the pore water samples are unreliable. There is no explanation as to what "best practice" might be or by what reasoning, aside from conclusory supposition, the expert concludes that it "evidently" was not being applied. Moreover, there is no description of any faults in DOE's screening process so as to raise doubts regarding either the sufficiency of the process or the samples remaining after applying the screening criteria. To accept the statements of Nevada's expert here would mean that, because DOE performed screening, all water samples, even those not screened out, are unreliable. Nevada's expert provides no explanation as to why the screening process was insufficient to remove any additional samples that showed evidence of microbial alteration. Thus, these statements do not support the argument advanced in NEV-SAFETY-55.

Nevada's expert further argues that DOE's non-screened pore water samples are unreliable because pH data for some samples were "calculated from analyzed alkalinity data by assuming a fixed value of 10^{-3} bars for $P(CO_2)$." NEV Petition at 313. The expert claims that because of these extrapolations, "pH values will have additional uncertainties." NEV Petition at 313. Nevada provides no support for these assertions and fails to provide any discussion showing that the methods used to calculate the missing values do not comply with regulatory requirements.

Next, Nevada's expert claims that "[t]he data for nitrate in pore waters *probably* have also been biased to low values by microbial degradation" and "[t]his means that the chloride/nitrate ratios calculated. . . are *likely* to be too high." NEV Petition at 313 (emphasis added). The expert does not present any support for the claims made in these statements. These assertions are not merely conclusory and unsupported, though on that basis alone they fail to meet the requirements of § 2.309(f)(1)(v), but they are also equivocal, providing no indication as to how "likely" the expert's claims are.

Finally, Nevada's expert asserts that "[t]hirty-four analyses is an insufficient number on which to understand the present-day variability and geochemical controls of pore compositions, the likely future variability of compositions, and how the compositions of evaporative brines and deliquescent salts will be determined." NEV Petition at 314. Again, this statement is unsupported, offering no explanation to aid in the evaluation of the claims made. For these reasons NEV-SAFETY-55 fails to meet the requirements of § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a petitioner provide sufficient information to demonstrate that a genuine dispute of fact or law exists with the applicant. Specifically, Nevada objects to SAR Subsection 2.3.5.3.2, asserting that the data of the pore waters are incomplete and/or lack sufficient reliability. However, as described above, Nevada does not support its statements regarding the claimed unreliability of the data with sufficient

explanation. A petitioner's "bald or conclusory allegations of a dispute with the applicant" are insufficient to demonstrate a genuine dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted). Nevada offers no evidence or support for the claim that the samples analyzed after screening do not represent an appropriate range of tests or that the data are unreliable.

As noted above, Nevada's expert claims that "[t]he data for nitrate in pore waters *probably* have also been biased to low values by microbial degradation" and "[t]his means that the chloride/nitrate ratios calculated. . . are *likely* to be too high." NEV Petition at 313 (emphasis added). However, based on the corrosion models described in the LA, the consequence of higher chloride/nitrate ratios would be greater corrosion rates, since SAR Subsection 2.3.5 states that nitrate has an inhibiting effect on corrosion. Thus, if the expert is correct, the results would be that DOE's corrosion rates would be too high and would overestimate dose. Because this assertion would decrease conservatism in the modeling approach, it does not raise a genuine dispute with regard to the application. For these reasons, Nevada fails to meet the requirements of § 2.309(f)(1)(vi).

Nevada seeks to raise a dispute not just with the specifically referenced SAR subsection 2.3.5.3.2, but also "related subsections." NEV Petition at 314. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007)(Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other “related” section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.*(Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

For the foregoing reasons, NEV-SAFETY-55 is inadmissible and should be rejected because it fails to meet 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-56 – GEOCHEMICAL INTERACTIONS AND EVOLUTION IN THE UNSATURATED ZONE, INCLUDING THERMO-CHEMICAL ALTERATION OF TSW HOST ROCK

> Screening of FEPs (Features/Events/Processes) 2.2.08.03.0B and 2.2.10.09.0A "Geochemical interactions and evolution in the UZ" and "Thermo-chemical alteration of the TSw basal vitrophyre" from performance assessments in SAR Subsection 2.2.1.2 and related subsections and as specifically stated at SAR Table 2.2-1 at 2.2-143 and 2.2-145 is not justified.

NEV Petition at 315. In this contention Nevada asserts that the screening of the referenced FEPs from the performance assessment was unjustified because "geochemical alteration of rocks in the unsaturated zone around and underlying deposition drifts will produce alteration minerals that will affect the retention and transport of radionuclides." NEV Petition at 315.

Staff Response

The Staff opposes the admission of NEV-SAFETY-56 because it does not provide a concise statement of the alleged facts or expert opinion that support the contention in compliance with 10 C.F.R. § 2.309(f)(1)(v) and because it does not state a genuine dispute of fact or law with the applicant pursuant to 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, this contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion.

Nevada's expert offers two major assertions in support of this contention. First, he states that the presence of secondary mineralization in the unsaturated zone in and around the emplacement drift could trap radionuclides, which "could subsequently be remobilized as 'pulses' of radionuclides, if geochemical conditions in the UZ were to change." NEV Petition 316. The expert fails to explain the sources of the "alteration products"—calcium carbonate, iron oxide, zeolites, and clay minerals—that he posits would be deposited in and around drifts. NEV Petition at 316. Most importantly, Nevada's expert does not offer support as to why radionuclides would be released in pulses or whether this would result in any increased dose to the RMEI. Without such explanation, these arguments are conclusory statements that do not support the proposition advanced in this contention.

Second, Nevada's expert argues that heat from emplaced waste will alter rocks in the unsaturated zone. *See* NEV Petition at 316. However, Nevada's expert does not propose an explanation for how the heat from waste packages in drifts would be great enough to cause an alteration of TSw rocks. The expert also notes "uncertainty and controversy" over DOE's application of the analogy of prior hydrothermal upwelling during a volcanic event in the region not causing alteration of the TSw rock. NEV Petition at 317. Nevada's expert makes no attempt to explain the "controversy" or to tie it to any reasoning as to why DOE's application of the hydrothermal heat analog is flawed. Rather, he merely cites an article without providing any substantive explanation as to how the article might support his argument. *See* NEV Petition at 317. This is insufficient because "a contention must make clear why cited references provide a basis for a contention." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 458 (2006).

Furthermore, Nevada fails to recognize or address that DOE screened the referenced FEPs on the basis of a low consequence determination. *See* SAR Table 2.2-5 at 2.2-262 and 2.2-267. Nevada makes no showing or claim to challenge DOE's consequence analysis that was used to justify the screening. Rather Nevada asserts, without accounting for DOE's

technical analysis, that the screening of these FEPs was unjustified because it does not comply with § 63.114(e), which requires a technical basis for inclusion or exclusion of FEPs from the performance assessment and a detailed evaluation if the magnitude and time of the radiological exposure to the RMEI would be significantly changed by the omission of a FEP. *See* NEV at 316. As shown above, Nevada offers no support for its allegations on either ground. Thus, for the reasons stated in this section, NEV-SAFETY-56 does not satisfy the requirements of 10 C.F.R § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a petitioner provide sufficient information to demonstrate that a genuine dispute of fact or law exists with the applicant. A petitioner's "bald or conclusory allegations of a dispute with the applicant" are insufficient to demonstrate a genuine dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted). Nevada objects to the screening of FEPs 2.2.08.03.0B and 2.2.10.09.0A from performance assessments in SAR Subsection 2.2.1.2, as specifically stated at SAR Table 2.2-1 at 2.2-143 and 2.2-145, because such screening "is not justified." NEV Petition at 317. As noted above, Nevada does not provide support for its assertions that the screening of the two referenced FEPs does not comply with NRC regulations. Notably, Nevada fails to reference the more detailed SAR Table 2.2-5 at 2.2-262 and 2.2-267, which provides more detail on FEP screening, and, in its footnote, specifically states that additional information on screening analyses for the two contested FEPs can be found in *Features, Events, and Processes for the Total System Performance Assessment: Analyses*, pp. 6-990-94 and 6-1083-84 (SNL 2008a)(LSN# DEN001584824). Because Nevada's objections to the SAR subsections that it references fail to address this report, referenced in SAR Table 2.2-5, regarding the two FEPs, Nevada fails to demonstrate a genuine dispute exists with the application. Thus, without more, Nevada's claim that the

screening does not comply with 10 C.F.R. § 63.114(e) does not comply with the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 318, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CL-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 56 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 318. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi)

requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999).. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 318. Therefore, with respect to this part of the NEV-SAFETY-56 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.2.1.2 and “related” subsections. NEV Petition at 315, 317. To the extent that Nevada seeks to raise an issue with a “related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory

Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

For the foregoing reasons, NEV-SAFETY-56 is inadmissible and should be rejected because it fails to meet 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-57 – DATA FOR NEAR-FIELD CHEMISTRY MODELS

> SAR Subsection 2.3.5.3, and similar and related subsections, which state or assume that a limited number of pore water analyses are sufficient for the near-field chemistry model, is not justifiable and therefore fails to appropriately define the range of conditions in which corrosion can occur.

NEV Petition at 319. In this contention Nevada argues that DOE's near-field chemistry model is unjustifiable because DOE based the model on 34 pore water analyses, because one of the four compositional groups drew all of its samples from the same location, and because DOE has not sampled any natural fracture waters directly. *See* NEV Petition at 320.

Staff Response

The Staff opposes the admission of NEV-SAFETY-57 because it fails to provide a concise statement of the facts or expert opinions supporting the contention and because it fails to state a genuine dispute of fact or law with the applicant in accordance with 10 C.F.R. 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion.

Nevada's expert notes, but does not attempt to state the factual significance of, the fact that DOE identified "*only* 34 [pore water] analyses with the proper charge balance and lack of microbial activity that they consider sufficient to base the near-field chemistry model upon." NEV Petition at 320 (emphasis added). Inclusion of the word "only" as a modifier to "34 analyses" does not suffice as a basis to support the implied proposition that 34 sample analyses is an insufficient number to characterize the chemistry of the near field. Without explanation, this sentence stands as only a bare assertion.

Nevada continues:

> The pore water analyses (see SAR Subsection 2.3.5.3.2.2.1 at 2.3.5-28) have been divided into four compositional groups (21, 7, 3, and 3 samples) and one group of three samples is from the same location (Alcove 5). Only three of the four members (Tptpul, Tptpmn, Tptpll, and Tptpln) of the TSw have been sampled. Yet, DOE has deemed this a sufficient number of samples to represent the entire TSw and with sufficient geospatial distribution in the TSw for the near-field chemistry model.

NEV Petition at 320. These statements also lend no support to the argument advanced in this contention; they are merely facts without explanation followed by a conclusory statement. A contention's proponent must provide explanation or analysis when referring to an expert opinion or supporting document in order to allow the Board to make an informed, reflective decision. *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)). Here, Nevada refers to statements in the SAR, but provides no analysis supporting the existence of the alleged deficiency.

Finally, Nevada states that "DOE has not identified, or sampled, any natural fracture flow waters with which to validate their assumption that there is an equilibrium between fracture flow and matrix waters." NEV Petition at 320. Here, Nevada does not acknowledge the methods other than direct sampling that DOE used to characterize fracture water, much less explain why they are insufficient to appropriately represent the near-field chemistry. *See*

SAR Subsection 2.3.5.3.2.2.1 at 2.3.5-30 and 31. As such, this statement, without more, does not support this contention.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). NEV-SAFETY-57 fails in that regard.

Nevada challenges SAR Subsection 2.3.5.3 as "not justifiable. . . for the reasons given in paragraph 5 above." NEV Petition at 321. On only this basis, Nevada alleges noncompliance with a number of Part 63 regulations. As discussed above, Nevada's statement of facts or expert opinion is wholly absent of supporting explanation. A summary reference to insufficient statements of basis is not enough to state a genuine dispute regarding the application.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 322, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires

that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 57 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 322. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to

different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 322. Therefore, with respect to this part of the NEV-SAFETY-57 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.5.3 and "similar and related" subsections. NEV Petition at 319. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

For the foregoing reasons, NEV-SAFETY-57 is inadmissible and should be rejected.

NEV-SAFETY-59 – GROUNDWATER COMPOSITIONS ASSUMED

> SAR Subsection 2.3.8.3.1 and similar subsections, which state that only two natural water compositions bound the range of water compositions expected in the unsaturated zone for the purposes of sorption and radionuclide transport, is illogical and impossible for a multicomponent aqueous system and means that the sorption and radionuclide transport calculations cannot be relied upon.

NEV Petition at 326. Nevada argues in support of this contention that DOE's experiments to determine radionuclide sorption and transport in the unsaturated zone are not valid because DOE used water samples from the saturated zone. *See* NEV Petition at 328. Nevada alleges that these saturated zone samples are not representative of unsaturated zone waters, and, thus, cannot provide an appropriate basis to evaluate radionuclide sorption and transport in the unsaturated zone. *See* NEV Petition at 328. Thus, Nevada alleges noncompliance with several sections of Part 63, particularly 10 C.F.R. § 63.114(a), which requires inclusion of data related to the geology, hydrology, and geochemistry to define parameters and conceptual models used in the performance assessment. Nevada further alleges noncompliance with 10 C.F.R. 63.114(b), which requires that the performance assessment account for uncertainties and variabilities in parameter values and provide for the technical basis for parameter values, probability distributions, or bounding values. *See* NEV Petition at 327.

Staff Response

The Staff opposes the admissibility of NEV-SAFETY-59 because it fails to provide a concise statement of supporting facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v) and fails to demonstrate the existence of a genuine dispute of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, NEV-Safety-59 should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section § 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)).

Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion. Nevada claims that "DOE assumes that only two solutions in total are required" to serve as bounding samples for the unsaturated zone sorption and transport experiments, "perhaps because otherwise the matrix of necessary experiments becomes incredibly large." NEV Petition at 328. Nevada continues, arguing that "the two natural water compositions chosen are not specific for transport and sorption in the unsaturated zone as they are groundwater samples from the saturated zone," and, thus, are not representative samples. NEV Petition at 328. Although Nevada makes these statements, it fails to provide the required basis for them. The state makes no showing, beyond bare claims and conjecture, that the two saturated zone samples used in the sorption and transport experiments are not bounding. Nevada also does not point to the existence of any unbounded ground water samples to demonstrate that the samples used were inappropriate.

Nevada also provides no support for the idea that the water samples are not representative simply because they came from the saturated zone. The statements of Nevada's expert regarding the insufficiency of DOE's experimental methodology are conclusory allegations lacking the required support to allow for reasoned evaluation. *See USEC*, CLI-06-10, 63 NRC at 472 (2006)("an expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned

basis or explanation for that conclusion is inadequate.")(citations omitted). Accordingly, Nevada fails to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a petitioner provide sufficient information to demonstrate that a genuine dispute of fact or law exists with the applicant. Here, Nevada restates its objection to DOE's claim in SAR 2.3.8.3.1 that it is possible to bound the expected water compositions in the unsaturated zone with two natural groundwater compositions and argues that the water samples adopted do not provide an appropriate basis for evaluating parameters characterizing radionuclide sorption and transport in the unsaturated zone. *See* NEV Petition at 328-29. Crucially, however, Nevada fails to include sufficient information to support its claims that DOE does not comply with NRC regulations. As noted above, Nevada offers only conclusory claims that provide no information as to why there is a basis to believe that the samples adopted are unrepresentative and not bounding. A petitioner's "bald or conclusory allegations of a dispute with the applicant" are insufficient to demonstrate a genuine dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted). Thus, when Nevada claims that DOE fails to comply with 10 C.F.R. § 63.114(a)-(b) because the water samples, and the data derived from them, used in the sorption experiments are inappropriate or inadequate to satisfy regulatory requirements, it has failed to demonstrate that a genuine dispute of fact or law exists with the applicant. For this reason, NEV-SAFETY-59 fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) with respect to its challenge to SAR 2.3.8.3.1.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 329, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is

referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 59 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 329. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,*

CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 329. Therefore, with respect to this part of the NEV-SAFETY-57 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.8.3.1 and "similar" subsections. NEV Petition at 319. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any

additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the foregoing reasons, NEV-SAFETY-59 is inadmissible because it fails to meet 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-61 – AMBIENT SEEPAGE INTO EMPLACEMENT DRIFTS

> SAR Section 2.1 and Subsection 2.3.3.2, and similar and related subsections, which state or assume that post-closure ambient seepage of water into emplacement drifts will be reduced by capillary forces, is incorrect because the analysis only considers drift-wall rock properties (e.g., flow characteristics in the unsaturated zone, permeability, and capillary strength of fractured rock) and geometry of the emplacement drifts, and thus completely fails to consider engineered ground support items (e.g. the Bernold-type perforated stainless steel liners) that are deemed necessary for the safety of pre-closure operations.

NEV Petition at 341. In support of this contention, Nevada asserts DOE's model for post-closure flow and water seepage into emplacement drifts fails to consider the stainless steel liners that will "reduce if not completely eliminate" any capillary barriers to water flow into the waste-containing drifts." *Id.* Nevada argues that the perforated steel liners will "facilitate seepage flow onto the liners, which then increasing the possibility of flow or drips through the perforations onto the EBS." *Id.* at 343. Nevada contends that by not considering this effect, DOE mistakenly states or assumes that post-closure ambient seepage of water into the emplacement drifts will be reduced by capillary forces. *Id*.

Staff Response

The staff opposes the admission of NEV-SAFETY-61 because it (i) is not adequately supported by facts or expert opinion; and (ii) does not raise a genuine issue of material fact or law regarding the license application. 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention

adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If an expert opinion is given in support of the contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-61 alleges that the perforated stainless steel liners will reduce or eliminate capillary forces, resulting in a higher level ambient seepage of water into emplacement drifts than calculated by DOE. NEV Petition at 341-43. However, Nevada does not cite to any source other than the SAR, and does not cite to any documentary information or support for the proposition that these effects are likely to occur or that they would significantly affect the repository's performance. The only support Nevada provides for its argument that the liners will "facilitate seepage flow onto the liners" and "increase[] the possibility of flow or drips…onto the EBS", *see* NEV Petition at 343, is its analogy of an old canvas tent in a rainstorm. Nevada offers no support for its assertion that the steel liners will promote ambient seepage into emplacement drifts, resulting in corrosion of engineered barriers. Nor does Nevada provide any discussion, qualitative or quantitative, as to the magnitude of the impact of this alleged reduction in capillary forces on performance of the repository. Although paragraph 5 of this contention has been purported to have been "adopted" by 4 affidavits, neither the affidavits nor the contention explains the basis for the stated opinions, as 10 C.F.R. § 2.309(f)(1)(v) requires. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 9, Affidavit of Doug F. Hambley; Attachment 10, Affidavit of Don L. Shettel, Jr.; and Attachment 21, Affidavit of Stephan K. Matthäi. *See also USEC.*, 63 NRC at 472. NEV-SAFETY-61 therefore does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and must be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or

alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994). The petitioner must do more than submit "bald or conclusory allegations[s"] of a dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-61 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi). NEV-SAFETY-61 asserts that the perforated stainless steel liners will reduce or eliminate capillary forces, resulting in a higher level ambient seepage of water into emplacement drifts than calculated by DOE. NEV Petition at 342-43. As stated above, Nevada has not provided any support for this assertion, nor any support for the proposition the effect described in NEV-SAFETY-61, should it occur, would significantly impact repository performance. Therefore. Nevada offers only a conclusory assertion of a dispute with the applicant and NEV-SAFETY-61 must be rejected. *Millstone,* CLI-01-24, 54 NRC at 358.

In addition, Nevada ignores the fact that DOE did address the impact of the stainless steel liners on groundwater flow. FEP 2.1.06.04.0A, "Flow Through Rock Reinforcement Materials in EBS" addresses the possibility that ground support materials, including the Bernold steel liners, could cause seepage into emplacement drifts. Features, Events, and Processes for the Total System Performance Assessment: Analyses, FEP 2.1.06.04.0A, "Flow Through Rock Reinforcement Materials in EBS", LSN# DEN001584824 at 6-512 (March 6, 2008); *see also* SAR Section 2.2, Table 2.2.1 at 2.2-129, SAR Section 2.2, Table 2.2.5 at 2.2-237, and SAR Section 2.3.3., Subsection 2.3.3.1 at 2.3.3-8. As reflected in the analysis, DOE excluded that FEP from consideration in the TSPA on the basis of low

consequence – that is, on the basis that its exclusion would not result in a significant change in the radiological exposure to the reasonably maximally exposed individual or the accessible environment. *Id.* By not challenging or even mentioning DOE's analysis of the very issue that is the source of NEV-SAFETY-61, Nevada has not raised a genuine dispute with regard to the license application.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 344, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 61 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 344. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not

met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need “many thousands of possible changes.” Section 2.309(f)(1)(vi) requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 344. Therefore, with respect to this part of the NEV-SAFETY-61 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR section 2.1. and SAR subsection 2.3.3.2 and “similar and related ” subsections. NEV Petition at 341,343. To the extent that Nevada seeks to raise an issue with a “similar and related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as

part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar and related” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For reasons discussed above, NEV-SAFETY-61 is inadmissible.

NEV-SAFETY-62 – THERMAL SEEPAGE INTO EMPLACEMENT DRIFTS

> SAR Section 2.1 and Subsection 2.3.3.1, and similar and related subsections, which state or assume that post-closure thermal seepage of water into emplacement drifts will be reduced by capillary forces, is incorrect because the analysis only considers drift-wall rock properties (e.g., flow characteristics in the unsaturated zone, permeability and porosity, capillary strength of fractured rock) temperature increases due to waste decay, and geometry of the emplacement drifts, and thus completely fails to consider engineered ground support items, such as Bernold-type perforated stainless steel liners, which are deemed necessary for the safety of pre-closure operations.

NEV Petition at 346. In support of this contention, Nevada asserts DOE's model for post-closure flow and water seepage into emplacement drifts fails to consider the stainless steel liners that "will reduce if not almost completely eliminate any capillary barriers to water flow into the waste-containing drifts." *Id.* Nevada argues that the perforated steel liners will "facilitate seepage flow onto the liners, which then increases the possibility of flow or drips through the perforations onto the EBS." *Id.* at 348.

Staff Response

The staff opposes the admission of NEV-SAFETY-62 because it (i) is not adequately supported by facts or expert opinion; and (ii) does not raise a genuine issue of material fact or law regarding the license application. 10 C.F.R. §§ 2.309(f)(1)(v) & (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position . . . ." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units

1, 2, & 3), CLI-91-12, 34 NRC 149, 155. If an expert opinion is given in support of the contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472.

NEV-SAFETY-62 alleges that the perforated stainless steel liners will reduce or eliminate capillary forces, resulting in a higher level of thermal seepage of water into emplacement drifts than calculated by DOE. NEV Petition at 346-48. However, Nevada does not cite to any source other than the SAR, and does not cite to any documentary information or support for the proposition that these effects are likely to occur or that they would significantly affect the repository's performance. The only support Nevada provides for its argument that the liners will "facilitate seepage flow onto the liners" and "increase[] the possibility of flow or drips . . . onto the EBS", is its analogy of an old canvas tent in a rainstorm. *See* NEV Petition at 348. Nevada offers no support for its assertion that the steel liners will promote thermal seepage into emplacement drifts, resulting in corrosion of engineered barriers, nor any basis for concluding that its analogy is applicable to the issue at hand. Nor does Nevada provide any discussion, qualitative or quantitative, as to the impact of this alleged reduction in capillary barrier on performance of the repository. Although paragraph 5 of this contention has been purported to have been adopted by four affidavits, *see* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 9, Affidavit of Doug F. Hambley; Attachment 10, Affidavit of Don. L. Shettel, Jr.; Attachment 21, Affidavit of Stephan K. Matthäi, neither the affidavits nor the contention explains the basis for the stated opinions, as 10 C.F.R. § 2.309(f)(1)(v) requires. *See USEC*, CLI-06-10, 63 NRC at 472. NEV-SAFETY-62 therefore does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and must be rejected.

10 C.F.R. § 2.309(f)(1)(vi): *Genuine Dispute Regarding the Application*

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the

petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). See also PPL Susquehanna, LLC. (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), review declined, CLI-94-2, 39 NRC 91 (1994). The petitioner must do more than submit "bald or conclusory allegations[s"] of a dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-62 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi). NEV-SAFETY-62 asserts that the perforated stainless steel liners will reduce or eliminate capillary forces, resulting in a higher level ambient seepage of water into emplacement drifts than calculated by DOE. As stated above, Nevada has not provided any support for this assertion, nor any support for the proposition that the effect described in NEV-SAFETY-62, should it occur, would significantly impact repository performance. Therefore, Nevada offers only a conclusory assertion of a dispute with the applicant and NEV-SAFETY-62 must be rejected. *See Millstone,* CLI-01-24, 54 NRC at 358.

Additionally, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 349-50, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* Thorne Affidavit. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)

(citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

NEV-SAFETY-62 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention . . . ." NEV Petition at 350. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 350. Therefore, with respect to this part of the NEV-SAFETY-62, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

Finally, this contention seeks to raise a dispute with SAR Section 2.1 and Subsection 2.3.3.1 and “similar and related” subsections. NEV Petition at 346. To the extent that Nevada seeks to raise an issue with a “similar” or “related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” or “related” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons discussed above, NEV-SAFETY-62 is inadmissible.

NEV-SAFETY-63 – EFFECT OF ROCK BOLTS ON AMBIENT SEEPAGE

> SAR Section 2.1 and Subsection 2.3.3.2 of the SAR, and similar and related subsections, which state or assume that post-closure ambient seepage of water into emplacement drifts will be reduced by capillary forces, is incorrect because the analysis only considers drift-wall rock properties (e.g., flow characteristics in the unsaturated zone, permeability and porosity, capillary strength of fractured rock) and geometry of the emplacement drifts, and thus fails to adequately consider an engineered ground support item, i.e., the hundred of thousands of un-grouted super Swellex-type stainless steel rock bolts, which is deemed necessary for the safety of pre-closure operations.

NEV Petition at 351. In support of this contention, Nevada asserts DOE fails to consider that the Swellex-type rock bolts "may reduce capillary barriers to ambient water flow diversion around the waste-containing drifts." *Id.* Nevada argues that the rock bolts "will facilitate liquid flow towards the emplacement drift, at least for those that are downward facing." *Id.* at 353. Nevada contends that by failing to account for this effect, SAR Section 2.1 and Subsection 2.3.3.2 incorrectly assume or state that capillary forces will reduce the post-closure seepage of water into emplacement drifts. *Id.* at 351.

Staff Response

The staff opposes the admission of NEV-SAFETY-63 because it (i) is not adequately supported by facts or expert opinion; and (ii) does not raise a genuine issue of material fact or law regarding the license application. 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention

adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If an expert opinion is given in support of the contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-63 alleges that installed rock bolts may reduce capillary barriers, which may result in a higher level of ambient seepage of water into emplacement drifts than calculated by DOE. NEV Petition at 351-353. However, Nevada does not cite to any source other than the SAR, and does not cite to any documentary information or support for the proposition that the effects it describes are likely to occur or that they would significantly affect the repository's performance. Nevada merely describes the shape and placement of the rock bolts and speculates that "the rock bolts will facilitate liquid flow towards the emplacement drift, at least for those that are downward facing." *Id.* at 353. Nevada offers no basis, beyond its unsupported statement, that this effect will occur and, in fact, at times only avers that the rock bolts "may reduce capillary barriers." *Id.* at 351. Nor does Nevada provide any argument or discussion, quantitative or qualitative, as to the impact Nevada believes this effect will have on the performance of the repository. Although paragraph 5 of this contention has been purported to have been adopted by 4 affidavits, neither the affidavits nor the contention explains the basis for the stated opinions, as 10 C.F.R. § 2.309(f)(1)(v) requires. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 9, Affidavit of Doug F. Hambley; Attachment 10, Affidavit of Don L. Shettel, Jr.; and Attachment 21, Affidavit of Stephan K. Matthäi. *See also USEC.*, 63 NRC at 472. NEV-SAFETY-63 therefore does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and must be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or

alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994). The petitioner must do more than submit "bald or conclusory allegations[s"] of a dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-63 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi). NEV-SAFETY-63 alleges that the rock bolts will reduce or eliminate capillary forces, resulting in a higher level of ambient seepage of water into emplacement drifts than calculated by DOE. As stated above, Nevada has not provided any support for this assertion, nor any support for the proposition that increased ambient seepage caused by the effect described in NEV-SAFETY-63, should it occur, would significantly impact repository performance. Therefore. Nevada offers only a conclusory assertion of a dispute with the applicant and NEV-SAFETY-63 must be rejected. *Millstone,* CLI-01-24, 54 NRC at 358.

In addition, Nevada ignores the fact that DOE did address the impact of the rock bolts and other ground support materials on groundwater flow. FEP 2.1.06.04.0A, "Flow Through Rock Reinforcement Materials in EBS" squarely addresses the possibility that ground support materials, including the Swellex rock bolts, could cause seepage into emplacement drifts. Features, Events, and Processes for the Total System Performance Assessment: Analyses, FEP 2.1.06.04.0A, "Flow Through Rock Reinforcement Materials in EBS", LSN# DEN001584824 at 6-512 (March 6, 2008). DOE's analysis examines the specific issue of the rock bolts' impact on seepage and found that "the presence of rock bolts does not lead to significant seepage enhancement." *Id.* As reflected in the analysis, DOE excluded that FEP

from consideration in the TSPA on the basis of low consequence – that is, on the basis that its exclusion would not result in a significant change in the radiological exposure to the reasonably maximally exposed individual or the accessible environment. *Id; see also* SAR Section 2.2, Table 2.2.1 at 2.2-129, SAR Section 2.2, Table 2.2.5 at 2.2-237, and SAR Section 2.3.3, Subsection 2.3.3.1 at 2.3.3-8. By not challenging or even mentioning DOE's analysis of the very issue that is the subject of NEV-SAFETY-63, Nevada has not raised a genuine dispute with regard to the license application.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 354-55, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 63 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 355. To the extent that the reference is interpreted to state objections to aspects

of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 355. Therefore, with respect to this part of the NEV-SAFETY-63 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR section 2.1. and SAR subsection 2.3.3.2 and "similar and related " subsections. NEV Petition at 351,354. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as

part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar and related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-64 – EFFECT OF ROCK BOLTS ON THERMAL SEEPAGE

> SAR Section 2.1 and Subsection 2.3.3.2, and similar and related subsections, which state or assume that post-closure thermal seepage of water into emplacement drifts will be reduced by capillary forces, is incorrect because the analysis only considers drift-wall rock properties (e.g., flow characteristics in the unsaturated zone, permeability and porosity, capillary strength of fractured rock) and geometry of the emplacement drifts, and fails to adequately consider an engineered ground support item, i.e., the hundreds of thousands of ungrouted super Swellex-type stainless steel rock bolts, which is deemed necessary for the safety of pre-closure operations.

NEV Petition at 356. In support of this contention, Nevada asserts DOE fails to consider that the Swellex-type rock bolts "may reduce capillary barriers to ambient water flow diversion around the waste-containing drifts." *Id.* Nevada argues that the rock bolts "will facilitate liquid flow towards the emplacement drift, at least for those that are downward facing." *Id.* at 358. Nevada contends that by failing to account for this effect, SAR Section 2.1 and Subsection 2.3.3.2 incorrectly assume or state that capillary forces will reduce the post-closure thermal seepage of water into emplacement drifts. *Id.* at 356.

Staff Response

The staff opposes the admission of NEV-SAFETY-64 because it (i) is not adequately supported by facts or expert opinion; and (ii) does not raise a genuine issue of material fact or law regarding the license application. 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention

adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If an expert opinion is given in support of the contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-64 alleges that installed rock bolts may reduce capillary barriers, which may result in a higher level of thermal seepage of water into emplacement drifts than calculated by DOE. NEV Petition at 356-358. However, Nevada does not cite to any source other than the SAR, and does not cite to any documentary information or support for the proposition that the effects it describes are likely to occur or that they would significantly affect the repository's performance. Nevada merely describes the shape and placement of the rock bolts and speculates that "the rock bolts will facilitate liquid flow towards the emplacement drift, at least for those that are downward facing." *Id.* at 358. Nevada offers no basis, beyond its unsupported conjecture, that this effect will occur and, in fact, at times only alleges that the rock bolts "may reduce capillary barriers." *Id.* at 356. Nor does Nevada provide any argument or discussion, quantitative or qualitative, as to the impact Nevada believes this effect will have on the performance of the repository. Although paragraph 5 of this contention has been purported to have been adopted by 4 affidavits, neither the affidavits nor the contention explains the basis for the stated opinions, as 10 C.F.R. § 2.309(f)(1)(v) requires. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 9, Affidavit of Doug F. Hambley; Attachment 10, Affidavit of Don L. Shettel, Jr.; and Attachment 21, Affidavit of Stephan K. Matthäi. *See also USEC*, CLI-06-10, 63 NRC at 472. NEV-SAFETY-64 therefore does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and must be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or

alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994). The petitioner must do more than submit "bald or conclusory allegations[s"] of a dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-64 does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(vi). NEV-SAFETY-64 alleges that the rock bolts will reduce or eliminate capillary forces, resulting in a higher level of ambient seepage of water into emplacement drifts than calculated by DOE. As stated above, Nevada has not provided any support for this assertion, nor any support for the proposition that increased ambient seepage caused by the effect described in NEV-SAFETY-64, should it occur, would significantly impact repository performance. Therefore. Nevada offers only a conclusory assertion of a dispute with the applicant and NEV-SAFETY-64 must be rejected. *Millstone,* CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 359-60, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 64 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 360. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to

different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 360. Therefore, with respect to this part of the NEV-SAFETY-64 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR section 2.1. and SAR subsection 2.3.3.2 and "similar and related " subsections. NEV Petition at 356, 359. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-65 – STRUCTURAL CONTROL OF SEEPAGE IN THE EMPLACEMENT DRIFT

> SAR Subsection 2.3.2 and similar subsections, which describe unsaturated zone flow, fail to recognize that the Yucca Mountain fracture geometry controls the spatial distribution of seepage into the in-drift environment, which affects water delivery to the drip shield and waste package.

NEV Petition at 361. In support of this contention, Nevada asserts that Yucca Mountain faults occur in patterned stress fields and that these patterned faults control the geometry of seepage through the unsaturated zone and therefore determine the large-scale spatial geometry of corrosion. *Id*. Nevada argues that DOE has improperly failed to recognize and consider patterned faulting in its assessment of unsaturated zone seepage flow. *Id.*

Staff Response

The staff opposes the admission of NEV-SAFETY-65 because it (i) is not adequately supported by facts or expert opinion; and (ii) does not raise a genuine issue of material fact or law regarding the license application. 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If an expert opinion is given in support of the contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-65 asserts that seepage flow into emplacement drifts will be controlled by

structural features and argues that fault patterns in the host rock will therefore impact corrosion geometry. NEV Petition at 361-63. The Staff does not dispute that seepage flow will be controlled by structural features and patterns in the host rock. Nevada further argues, however, that by not considering patterned faulting, DOE has violated 10 C.F.R. § 63.114(f), which requires that DOE's performance assessment "evaluate in detail the degradation, deterioration, or alteration processes of engineered barriers if the magnitude and time of the resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the accessible environment, would be significantly changed by their omission." NEV Petition at 364.

Nevada does not provide any support or documentation for the proposition that radiological exposure to the accessible environment or to the RMEI would be significantly changed by the omission of the effect that is the subject of NEV-SAFETY-65. Nevada simply asserts that DOE has failed to consider the effect of patterned faulting on unsaturated zone seepage flow geometry. Nor does Nevada demonstrate or provide any basis to suggest that the impact of patterned faulting on unsaturated zone seepage flow geometry would be to <u>increase</u> corrosion rates or discuss the implications for differential corrosion of waste packages at the repository site. Nevada does not cite to any source other than the SAR, and does not cite to any documentary information or support for the proposition that the effects described in NEV-SAFETY-65 are likely to occur or that they would significantly affect the repository's performance. Although paragraph 5 of this contention has been purported to have been adopted by 2 affidavits, *see* NEV Petition, Attachment 6, Affidavit of Adrian P. Butler; Attachment 21, Affidavit of Stephan K. Matthäi, neither the affidavits nor the contention explains the basis for the stated opinions, as 10 C.F.R. § 2.309(f)(1)(v) requires. *See USEC*, CLI-06-10, 63 NRC at 472. NEV-SAFETY-65 therefore does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and must be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994). The petitioner must do more than submit "bald or conclusory allegations[s"] of a dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-65 does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(vi). NEV-SAFETY-65 asserts that patterned faulting in the host rock will control water seepage flow geometry through the unsaturated zone. NEV Petition at 361-363. However, as stated above, Nevada has not provided any support for the proposition the impact of patterned faulting is likely to impact overall repository performance. This is insufficient to raise a genuine dispute of material fact with respect to the license application. *See Millstone,* CLI-01-24, 54 NRC at 358.

In addition, Nevada ignores DOE's treatment of the impact of preferential flow paths through the emplacement drifts and its consideration of preferential flow paths in its model and in the TSPA. Features, Events, and Processes for the Total System Performance Assessment: Analyses, FEP 2.2.07.04.0A, "Focusing of Unsaturated Flow (Fingers, Weeps)," LSN# DEN001584824 at 6-929 (March 6, 2008); see also SAR Section 2.2, SAR Table 2.2-1 at pages 2.2-141; SAR Table 2.2-2 at pages 2.2-150; SAR Table 2.2-5 at pages 2.2-258. DOE's analysis of the impact of patterned faulting on preferential flow paths and

seepage noted that "preferential flow is inherently imbedded in the seepage lookup tables for ambient seepage" and that through these tables, and the use of distributions of flow-focusing factors, "uncertainty in flow focusing" due to patterned faulting and preferential flow "is therefore propagated to TSPA models." *Id.* at 6-929-930. By not challenging or even mentioning DOE's analysis of focused or preferential flow, Nevada has not raised a genuine dispute with regard to the license application and NEV-SAFETY-65 must be rejected.

Finally, NEV-SAFETY-65 seeks to raise a dispute with SAR section 2.3.2 and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi); s*ee also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one

of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-66 – ATTENUATION OF SEEPAGE INTO NATURALLY FRACTURED DRIFT WALLS.

> SAR Subsection 2.3.3 and related subsections argue for a flow diversion around the repository drifts due to capillary forces, but in the presence of drift-wall fractures this is not a valid assumption which implies that more water will enter the emplacement drifts than is asserted by DOE.

NEV Petition at 365. In support of this contention, Nevada asserts that DOE mistakenly treats the drift wall as a capillary barrier that reduces the flow of water into the repository drifts. *Id.* at 366. Nevada argues that, rather than diverting seepage around the emplacement drifts, drift wall fractures and other factors will focus the seepage and cause more water to enter the drifts than is calculated by DOE. *Id.* at 365-68. Nevada asserts that in the presence of these drift wall fractures, DOE's treatment of the drift wall as a capillary barrier is "not a valid assumption." *Id.* at 365.

Staff Response

The staff opposes the admission of NEV-SAFETY-66 because it (i) is not adequately supported by facts or expert opinion; and (ii) does not raise a genuine issue of material fact or law regarding the license application. 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If an expert opinion is given in support of the contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American

Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-66 alleges that in considering the drift wall as a capillary barrier that would prevent seepage flow into the emplacement drifts, DOE failed to consider drift wall fractures and the possibility that, in the presence of these fractures, the drift wall will promote, not deter, seepage flow into the emplacement drifts and that the presence of such fractures makes DOE's treatment of the drift wall as a capillary barrier "not a valid assumption." NEV Petition at 365-68. In support of its assertion that drift wall fractures will focus flow into the emplacement drifts, Nevada offers the analogy of the horizontal oil production wells. *Id.* at 367-68. Although Nevada asserts, that this analogy is "plausible as a conceptual model" for the proposed repository, Nevada provides no support for the proposition that this analogy would in fact be applicable to the issue at hand. Nor does Nevada provide any argument or discussion, quantitative or qualitative, as to the impact Nevada believes this effect will have on corrosion rates or the performance of the repository. Although paragraph 5 of this contention has been purported to have been adopted by 3 affidavits, see Attachments 3, 6, and 21 to NEV Petition, neither the affidavits nor the contention explains the basis for the stated opinions, as 10 C.F.R. § 2.309(f)(1)(v) requires. See USEC, CLI-06-10, 63 NRC at 472. NEV-SAFETY-66 therefore does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and must be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review*

declined, CLI-94-2, 39 NRC 91 (1994). The petitioner must do more than submit "bald or conclusory allegations[s"] of a dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-66 does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(vi). NEV-SAFETY-66 alleges that drift wall fractures will cause the attenuation of seepage into the emplacement drift, rendering DOE's treatment of the drift wall as a capillary barrier invalid. As stated above, Nevada has not provided any support for this assertion. In addition Nevada fails to demonstrate that its claims regarding seepage attenuation, even if true, would have any appreciable effect on the volume of water expected to enter the emplacement drifts, on corrosion rates, or on the overall performance of the repository. This is insufficient to raise a genuine dispute of material fact with respect to the license application and NEV-SAFETY-66 must therefore be rejected.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 368-69, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.*

(Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 66 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 368. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 368-69. Therefore, with respect to this part of the NEV-SAFETY-66 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.3 and

"related" subsections. NEV Petition at 365. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-67 – EVALUATION OF UNCERTAINTIES IN ESTIMATED CHEMICAL PROPERTIES, ESPECIALLY PH VALUES, OF EVAPORATED DRIFT BRINES

> The modeled compositional range for evaporated brines that might seep onto waste packages, and thus be the agent for corrosion, at the end of the thermal period should be broader than has been estimated and used in SAR Subsection 2.3.5.5 and related subsections.

NEV Petition at 371. In support of this contention, Nevada asserts that the SAR underestimates the uncertainties in the predicted compositions of evaporated drift brines – particularly as related to pH uncertainty – that could contribute to the corrosion of waste packages. *Id*. Nevada contends that the pH of such brines is an influential chemical property with respect to the rate at which it could cause corrosion of waste packages. *Id*. at 371-72. Nevada does not dispute that the SAR addresses and considers evaporated drift brines as a source of corrosion to waste packages, *see* SAR § 2.3.5.5.1, but asserts that DOE underestimates the pH range of such brines. NEV Petition at 373. Nevada contends that this underestimation of uncertainty violates 10 C.F.R. § 63.102(h), which states that evaluation of the performance of engineered and natural barriers will be based on credible models and parameters, including the consideration of uncertainty. In addition, Nevada contends that this underestimation of uncertainty violates 10 C.F.R. § 63.114(b), which states that DOE's demonstration of postclosure compliance with applicable performance standards must account for uncertainties and variabilities in parameter values and provide a technical basis for parameter ranges, probability distributions, or bounding values used in performance assessment. *Id.* at 373-374.

Staff Response

The staff opposes the admission of NEV-SAFETY-67 because it (i) is not adequately supported by facts or expert opinion; and (ii) does not raise a genuine issue of material fact or law regarding the license application.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If an expert opinion is given in support of the contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-67 presents facts and expert opinion regarding whether the SAR underestimates pH uncertainty of evaporated brines because "[DOE's model] does not allow for the possibility that other chemical reactions [other than P(CO2)] might control pH locally." NEV Petition at 373. However, NEV-SAFETY-67 does not present any facts or expert opinion with regard to what those geochemical controls could be, or whether they would be of sufficient magnitude and duration to influence repository performance in an adverse manner, noting that some geochemical control could exist to mitigate adverse effects. NEV Petition at 372-73. Nor does Nevada provide any support or basis explaining how and to what extent this purported underestimation of pH uncertainty impacts corrosion rates or the ultimate performance of the repository. Finally, Nevada does not set forth what it believes to be a more appropriate uncertainty range or discuss how use of that rate would affect corrosion rates or the ultimate performance of the repository in the context of its performance standards. It merely asserts that the application is deficient because it understates pH uncertainty. This does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and NEV-SAFETY-67 should therefore be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

NEV-SAFETY-67 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi). Although it provides a discussion of why it believes DOE underestimates uncertainty, it does not discuss the impact that this purported underestimation has on the rate of corrosion of waste packages, nor the ultimate impact on the performance of the repository. NEV-SAFETY-67 does not even allege that using what it believes is a more appropriate range of pH uncertainty would lead to a change in the overall performance of the repository or that the dose to the RMEI could be impacted by this purported underestimation. Nevada, therefore does not raise a genuine issue of material fact with respect to the LA and, accordingly, NEV-SAFETY-67 should be rejected.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 374, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 67 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 374. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to

different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 374. Therefore, with respect to this part of the NEV-SAFETY-67 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.5.5 and "related" subsections. NEV Petition at 371, 374. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-68 – IN-DRIFT CONDENSATION ON MINERAL DUST

> SAR Subsection 2.3.5.4.2 and related subsections, which describe DOE's model for condensation, ignore condensation on surfaces of common and ubiquitous rock dust (siliceous and feldspathic) that coat EBS materials resulting in a much larger volume of liquid and vapor on these surfaces than calculated by DOE.

NEV Petition at 375. In support of this contention, Nevada asserts that proposed repository construction and desert-derived ventilation dust and mineral precipitates on the C-22 and Ti-7 surfaces can act as acceptors for condensation affecting the in-drift condensation model, because these particles have large surface areas and can therefore trap much greater concentrations of liquid than calculated by DOE. *Id.* Nevada contends that DOE has underestimated the volume of liquid to which the C-22 and Ti-7 surfaces could be exposed, and that DOE's in-drift condensation model used to calculate corrosion of the engineered barriers is therefore invalid. NEV Petition at 376-77.

Staff Response

The staff opposes the admission of NEV-SAFETY-68 because it (i) is not adequately supported by facts or expert opinion; and (ii) does not raise a genuine issue of material fact or law regarding the license application. 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If an expert opinion is given in support of the

contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-68 alleges that DOE has ignored the possibility that moisture condensation on rock dust particles coating the engineered barrier system could lead to a greater volume of liquid and vapor on these surfaces than calculated by DOE. NEV Petition at 376-77. However, Nevada does not cite to any documentary information or support that indicates that such effects are likely or that they would negatively affect repository performance. *Id.* Rather, Nevada simply cites to the SAR, asserts that DOE has not accounted for these effects, and speculates that such effects could be significant. *Id.* Nevada offers only speculation and unsupported conjecture that the effects described in NEV-SAFETY-68 are likely to occur and that such effects would be significant. Although paragraph 5 of NEV-SAFETY-68 has been purported to have been "adopted" by an expert, an expert opinion in support of a contention must explain the basis for that opinion. *USEC, Inc.,* CLI-06-10, 63 NRC at 472. No support, basis, or explanation is offered for the statement and opinion that condensation on rock dust coating the engineered barrier system components could result in "a much larger volume of liquid and vapor on those surfaces than calculated by DOE," NEV Petition at 375, or that DOE's in-drift condensation model is invalid because of its non-consideration of these effects. *Id.* at 377. Because it has no support for its assertions beyond speculation and conjecture, NEV-SAFETY-68 does not comply with 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges

was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994). The petitioner must do more than submit "bald or conclusory allegations[s"] of a dispute with the applicant. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-68 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi). NEV-SAFETY-68 asserts that the validity of DOE's in-drift condensation model is called into question by DOE's failure to consider condensation on rock dust coating the engineered barrier system components. However, Nevada's arguments amount to mere speculation that such condensation could occur and could be significant enough to alter DOE's in-drift condensation model, corrosion rates, or the overall performance of the repository. Paragraph 5 of NEV-SAFETY-68 does not even address the amount of water that would be implicated by its assertions, much less its impact on corrosion rates or the overall performance of the repository. Although Nevada argues that this condensation could result in a "much larger volume of liquid and vapor" on the surfaces of the engineered barrier system components, *see* NEV Petition at 375, it does not offer any idea of the volume at issue, nor does it offer any documentary support or discussion as to how consideration of condensation on rock dust coating the engineered barriers could significantly alter the overall performance of the repository or the expected radiological exposure to the RMEI or the accessible environment. This amounts to a "conclusory allegation" of a dispute with the applicant and does not comply with 10 C.F.R. § 2.309(f)(1)(vi). *Millstone*, CLI-01-24, 54 NRC at 258.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 378, does not satisfy

the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 68 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 378. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other

parties “a good idea” of “claims they will be either supporting or opposing.” *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 378. Therefore, with respect to this part of the NEV-SAFETY-68 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.5.4.2 and “related” subsections. NEV Petition at 375, 378. To the extent that Nevada seeks to raise an issue with a “related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2,

and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-69 - COUPLED SEEPAGE AND DUST DELIQUESCENCE

> SAR Subsection 2.3.5.2 and similar subsections, which focus on coupled processes, fail to consider seepage and dust deliquescence reactions as combined processes and therefore underestimate the degree and extent of localized C-22 corrosion.

NEV Petition at 379. NEV-SAFETY-69 argues that the SAR fails to consider seepage and dust deliquescence reactions as combined processes and, therefore, underestimates the degree and extent of localized C-22 corrosion. *Id.* NEV-SAFETY-69 alleges that the SAR should consider dust deliquescence and seepage as combined processes both occurring sequentially and simultaneously. *Id.* at 380-381.

Staff Response

The Staff opposes admission of NEV-SAFETY-69 on the grounds that it is not adequately supported by facts or expert opinion and does not raise a genuine issue of material fact or law with regard to the license application. *See* 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If an expert opinion is given in support of the contention, the expert must state the basis of his or her opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-69 alleges that DOE has failed to consider seepage and dust deliquescence reactions as combined processes, leading to an underestimation of the

degree and extent of localized C-22 corrosion. NEV Petition at 379. However, Nevada does not cite to any documentary evidence or support that indicates that consideration of these two processes as coupled processes would significantly change the overall performance assessments. *Id.* 380-82. Rather, Nevada simply cites to the SAR, asserts that DOE has not accounted for these effects, and speculates that these processes, if coupled, "could lead to non-equilibrium seepage events." *Id.* at 382. However, Nevada only speculates that "it is possible to generate seepage into the containment drifts during the thermal period" and never demonstrate that the two processes, if coupled have the realistic potential of doing so. *Id.* While NEV-SAFETY-69 asserts that DOE has underestimated the degree and extent of localized C-22 corrosion by failing to consider the two processes as coupled processes, Nevada offers no support or explanation, quantitative or qualitative, as to how corrosion rates or the overall performance of the repository might be affected. This is insufficient to comply with the requirements of 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). "[A] contention must show that a "genuine dispute exists with the applicant on a material issue of law or fact . . . The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-69 alleges that the SAR improperly fails to consider dust deliquescence and seepage as combined processes, which results in an understatement of localized C-22 corrosion. NEV Petition at 382. NEV-SAFETY-69 contends, therefore, that SAR Subsection 2.3.5.2:

> [does] not comply with 10 C.F.R. § 63.114(f), which requires that any performance assessment used to demonstrate compliance with Section 63.113 must provide the technical

> basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers in the performance assessment, including those processes that would adversely affect the performance of natural barriers, and that degradation, deterioration, or alteration processes of engineered barriers must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the accessible environment, would be significantly changed by their omission.

NEV Petition at 382-383. Although NEV-SAFETY-69 contends that the SAR fails to consider dust deliquescence and seepage as combined processes, leading to an understatement of the level of C-22 corrosion, NEV-SAFETY-69 does not contend, nor does it even attempt to demonstrate, that not considering these processes in tandem would significantly change corrosion rates or the radiological exposures to the RMEI or the accessible environment. Because 10 C.F.R. § 63.114(f) requires consideration be given only to such processes, NEV-SAFETY-69 does not raise a genuine issue of material fact or law and should be rejected.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 383, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.*

(Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 69 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 383. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 383. Therefore, with respect to this part of the NEV-SAFETY-69 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-70 – MICROBIALLY INDUCED WATER CHEMISTRY CHANGES IN THE INCUBATOR ZONE

> SAR Subsections 2.2.1, 2.3.5.5, 2.3.5.3 and similar subsections, which relate to hydrogeochemical changes in vadose fracture and matrix as a consequence of water evaporation and tuff dissolution, and thermal-hydrologic-chemical coupled processes, fail to recognize the critical significance of mineralization reactions on unsaturated zone seepage water chemistry.

NEV Petition at 384. NEV-SAFETY-70 contends that the SAR does not adequately account for mineralization reactions on unsaturated zone seepage water chemistry. *Id*. Specifically, Nevada alleges that the SAR: (a) incorrectly assumes that the aqueous chemistry of near-field unsaturated zone seepage water will remain constant throughout the life of the repository; and (b) uses an inappropriate near-field aqueous chemistry model that "is not suitable for estimating the compositions of seepage waters and solid deposits that could result in corrosion" of the engineered barriers. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-70 on the grounds that it: (a) is not adequately supported by facts or expert opinion; and (b) does not raise a genuine dispute on a material issue of law or fact with regard to the license application. *See* 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-70 challenges the DOE's screening of FEP 2.2.08.03.0B – geochemical interactions and evolution in the UZ – on the basis of low consequence. NEV Petition at 386.

NEV-SAFETY-70 asserts that the SAR "does not provide a coherent statement on the evolution of seepage water chemistry" and that the DOE "fail[s] to recognize the critical significance of mineralization reactions on unsaturated zone seepage water chemistry." *Id.* at 384, 387. Nevada argues the DOE uses an inappropriate and unrealistic model for near-field aqueous chemistry and that it would be more "appropriate to use a modification of the in-drift model." *Id*. at 387. However, Nevada does not set forth any basis for concluding that use of Nevada's model would lead to any meaningful change in expected radiological consequences or alter the expected consequences of the FEP whose exclusion NEV-SAFETY-70 challenges such that it would make consideration of that FEP necessary. Nevada therefore offers only unsupported argument and assertion that the SAR should have accounted for these effects. This is insufficient to support the admission of NEV-SAFETY-70 and it must therefore be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

NEV-SAFETY-70 challenges the SAR's exclusion of the "geochemical interactions and evolution in the unsaturated zone" FEP from consideration in the TSPA because of low consequence. NEV Petition at 386. Nevada argues that "geochemical interactions will lead to dissolution and precipitation of minerals along the groundwater flow path and these reactions will be affected by changes in the thermal envelope." *Id.* Nevada does not demonstrate or set forth any basis to suggest that consideration of these interactions, should they occur, would result in a significant change to the resulting radiological exposures to the RMEI or to the accessible environment, or that consideration of this FEP would significantly

change the performance assessments. 10 C.F.R. §§ 63.114(e), 63.342. Nevada offers only allegations that these interactions could occur and unsupported assertions that the SAR is deficient for failing to account for them. Therefore, Nevada has not established a genuine issue of material fact with respect to the screening of such events from further consideration. *Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 389-90, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 70 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 389-90. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also

not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need “many thousands of possible changes.” Section 2.309(f)(1)(vi) requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 389-90. Therefore, with respect to this part of the NEV-SAFETY-70 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.2.1, 2.3.5.5, 2.3.5.3 and “similar” subsections. NEV Petition at 384, 389. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the

named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible and should be rejected.

NEV-SAFETY-71 – MICROBIALLY INDUCED WATER CHEMISTRY CHANGES IN THE INCUBATOR ZONE

> SAR Subsections 2.3.5 and similar subsections, which deal with the near-field chemistry model, fail to recognize the potential role of microbial communities in determining unsaturated zone water chemistry in the near-field environment.

NEV Petition at 391. NEV-SAFETY-71 contends that denitrifying bacteria have the capability to increase the Cl^- to NO_3^- ratio in their environment by converting nitrate to reduced oxides or N_2, thereby changing the aqueous nitrate to chloride ratio prior to seepage into the emplacement drifts. *Id.* NEV-SAFETY-71 asserts that DOE has not evaluated the role of such bacteria or their potential role in drip shield and waste package degradation and radionuclide transport. *Id*. at 393. NEV-SAFETY-71 asserts, consequently, that DOE's characterization of the near-field environment is inappropriate, as "it is likely that the nitrate/chloride ratios used by DOE to describe corrosion inhibition are wrong." *Id.* NEV-SAFETY-71 contends that because of this inaccuracy, SAR § 2.3.5 violates 10 C.F.R. § 63.114(f), which requires that DOE's performance assessment provide the technical basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers in the performance assessment and that degradation, deterioration, or alteration processes of engineered barriers must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the RMEI, or radionuclides to the accessible environment, would be significantly changed by their omission. *Id.* at 393-394.

Staff Response

The Staff opposes the admission of NEV-SAFETY-71 on the grounds that it: (a) is not adequately supported by facts or expert opinion; and (b) does not raise a genuine dispute on a material issue of law or fact with regard to the license application. *See* 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). NEV-SAFETY-71 and its associated expert opinion contend that DOE has not attempted to account for denitrifying bacteria that could affect corrosion, rendering the SAR's discussion of the near field environment inaccurate. NEV Petition at 393-94.

However, while the associated expert opinion asserts that denitrification could occur, neither the reference cited, *see* "A Perspective on the Use of Anion Ratios to Predict Corrosion in Yucca Mountain" (08/01/2003), LSN# NEV000004014, nor the expert opinion discuss the magnitude or significance of this process on the near-field environment or its ultimate impact on corrosion of waste packages or drip shields. *See* NEV Petition at 391-394. Consequently, Nevada provides no support for the proposition that this process, should it occur, could significantly affect the exposure to the reasonably maximally exposed individual ("RMEI") such that it would merit consideration in the performance assessment, as NEV-SAFETY-71 contends. *See* NEV Petition at 393-94.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

NEV-SAFETY-71 alleges that the SAR does not account for the possibility that microbially-induced changes in water chemistry could impact corrosion of drip shields and

waste packages. NEV Petition at 392-94. NEV-SAFETY-71 contends, therefore, that SAR § 2.3.5

> [does] not comply with 10 C.F.R. § 63.114(f), which requires that any performance assessment used to demonstrate compliance with Section 63.113 must provide the technical basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers in the performance assessment, including those processes that would adversely affect the performance of natural barriers, and that degradation, deterioration, or alteration processes of engineered barriers must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the accessible environment, would be significantly changed by their omission.

NEV Petition at 393-94. Although NEV-SAFETY-71 alleges that the SAR fails to adequately account for microbially-induced water changes that could impact corrosion of engineered barriers, NEV-SAFETY-71 does not present any information at all that would demonstrate, nor does it even attempt to argue, that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of these factors. NEV-SAFETY-71, therefore, does not raise a genuine issue of material fact or law with respect to the license application and should be rejected.

In addition, NEV-SAFETY-71 alleges that the SAR does not adequately account for the role of denitrifying bacteria that could impact corrosion of waste packages and drip shields, rendering the SAR's description of the chemical properties of the near-field environment inaccurate. NEV Petition at 391. However the SAR screens microbial effects, including denitrification, from consideration in terms of its impact on corrosion and degradation of engineered barriers. *See* SAR §§ 2.2, 2.3.6.2.3, and 2.3.6.3.2.3. NEV-SAFETY-71 does not challenge the SAR's screening of the effects of microbial activity at these sections. Because Nevada has not challenged the SAR's screening of the very effects that are the subject of

NEV-SAFETY-71 and has not shown why the screening decision was mistaken, Nevada has not raised a genuine issue of material fact with respect to the license application for this additional reason and NEV-SAFETY-71 must be rejected.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 394, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 71 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 394. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA

Nevada believes would need “many thousands of possible changes.” Section 2.309(f)(1)(vi) requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 394. Therefore, with respect to this part of the NEV-SAFETY-71, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.5 and “similar” subsections. NEV Petition at 391, 393. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the

named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible and should be rejected.

NEV-SAFETY-72 – CHARACTERIZATION OF DUST SOURCES

> SAR Subsections 2.3.5, 2.3.5.1 and similar subsections, which describe the in-drift physical and chemical environment, fail to consider dust as an important physical factor in the in-drift environment and have poorly characterized the genesis of dust in that environment

NEV Petition at 395. NEV-SAFETY-72 contends that the SAR inappropriately limits its characterization of dust in emplacement drifts and therefore inaccurately characterizes the physical and chemical environment in which the engineered barrier system is to function. *Id.* NEV-SAFETY-72 contends that because of this inaccuracy, SAR Sections 2.3.5 and 2.3.5.1 violate 10 C.F.R. § 63.114(f), which requires that DOE's performance assessment provide the technical basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers in the performance assessment and that degradation, deterioration, or alteration processes of engineered barriers must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the RMEI, or radionuclides to the accessible environment, would be significantly changed by their omission. *Id.* at 398-399.

Staff Response

The Staff opposes the admission of NEV-SAFETY-72 on the grounds that it (a) is not adequately supported by facts or expert opinion; and (b) does not raise a genuine dispute on a material issue of law or fact with regard to the license application. *See* 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.*

(American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The Staff acknowledges that NEV-SAFETY-72 is supported by facts and opinion regarding possible sources of dust in the in-drift environment. However, NEV-SAFETY-72 sets forth no facts or expert opinion for its proposition that the dust sources it sets forth would constitute "an important physical factor in the in-drift environment." NEV Petition at 398-99. Nor does NEV-SAFETY-72 set forth any facts or expert opinion that would indicate that the sources of dust discussed in NEV-SAFETY-72 could impact the LA's performance assessments or the dose to the RMEI. *See* NEV Petition at 399. In fact, NEV-SAFETY-72 is therefore not adequately supported by facts or expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

NEV-SAFETY-72 alleges that the SAR does not adequately consider dust as an important physical factor in the in-drift environment and does not properly characterize the genesis of dust in that environment. NEV Petition at 395. NEV-SAFETY-72 contends, therefore, that SAR Sections 2.3.5 and 2.3.5.1

> Do not comply with 10 C.F.R. § 63.114(f), which requires that any performance assessment used to demonstrate compliance with Section 63.113 must provide the technical basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers in the performance assessment, including those processes that would adversely affect the performance of natural barriers, and that degradation, deterioration, or alteration processes of engineered barriers must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the accessible environment, would be significantly changed by their omission.

NEV Petition at 398-99. Although NEV-SAFETY-72 contends that the SAR fails to adequately account for dust in the in-drift environment, NEV-SAFETY-72 does not present any information at all that would demonstrate that the presence of the dust sources it discusses would adversely affect the performance of engineered barriers or that these dust sources could affect the performance assessments or the dose to the RMEI, as NEV-SAFETY-72 argues. NEV-SAFETY-72, therefore, does not raise a genuine issue of material fact or law with respect to the license application and should therefore be rejected.

Finally, NEV-SAFETY-72 seeks to raise a dispute with SAR subsection 2.3.5, 2.3.5.1, and "similar" sections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by

the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible and should be rejected.

NEV-SAFETY-73 - IN-DRIFT ORGANIC CONTRIBUTION BY VENTILATION OR UNSATURATED ZONE WATER

> SAR Subsections 2.3.5.5 and similar subsections, which describe the in-drift chemical environment models, fail to include organic compounds in the composition of unsaturated zone water, or ventilation dust in the in-drift environment, and therefore omit these components from all of their experimental and model-based estimates of corrosion and other factors influencing repository performance

NEV Petition at 400. NEV-SAFETY-73 contends that the SAR's geochemical-hydrogeochemical characterization of the in-drift environment is incomplete, and that its corresponding characterization of corrosion of C-22 and related engineered barrier system components is rendered inadequate by its failure to account for natural organic compounds derived from ventilation dust and fracture flow seepage. *Id.* NEV-SAFETY-73 contends that because of this inaccuracy, SAR §§ 2.3.5 and 2.3.5.1 violate 10 C.F.R. § 63.114(f), which requires that DOE's performance assessment provide the technical basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers in the performance assessment and that degradation, deterioration, or alteration processes of engineered barriers must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the RMEI, or radionuclides to the accessible environment, would be significantly changed by their omission. *Id.* at 398-399.

Staff Response

The Staff opposes the admission of NEV-SAFETY-73 on the grounds that it (a) is not adequately supported by facts or expert opinion; and (b) does not raise a genuine dispute on a material issue of law or fact with regard to the license application. *See* 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of

facts or expert opinion. An expert opinion that merely states a conclusion without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). NEV-SAFETY-73 and its associated expert opinion contend that DOE has not attempted to account for organic compounds that could play a role in corrosion, rendering the SAR's discussion of the in-drift and near field environments inadequate and incomplete, and calling into question DOE's performance assessment and the LA's conclusions regarding performance of the engineered barrier system. NEV Petition at 401-402.

However, NEV-SAFETY-73 sets forth no facts or expert opinion for its contention that the SAR's alleged failure to account for these organic compounds compromises the effectiveness of the engineered barrier system or calls into question the performance assessment. Although NEV-SAFETY-73 sets forth some facts related to organic compounds and how they can contribute to corrosion and radionuclide transportation in general, *see, e.g.,* NEV Petition at 402, the contention sets forth no support for the proposition that these compounds will even be present in the in-drift and near field environments, as Nevada contends, much less that they contribute significantly to corrosion to the extent of significantly affecting the performance assessment or the exposure to the RMEI, as NEV-SAFETY-73 alleges. Nevada offers no proposed sources for these organic compounds, no proposed biogeochemical reactions that could adversely affect engineered barrier system components, and no opinions as to the timing, during, or magnitude of their effects. NEV-SAFETY-73 is therefore not adequately supported by facts or expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut,*

Inc. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

NEV-SAFETY-73 alleges that the SAR does not account for the presence of organic compounds that could influence C-22 corrosion and radionuclide transport. NEV Petition at 400. NEV-SAFETY-73 contends, therefore, that SAR §§ 2.3.5.5

> [does] not comply with 10 C.F.R. § 63.114(f), which requires that any performance assessment used to demonstrate compliance with Section 63.113 must provide the technical basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers in the performance assessment, including those processes that would adversely affect the performance of natural barriers, and that degradation, deterioration, or alteration processes of engineered barriers must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the accessible environment, would be significantly changed by their omission.

NEV Petition at 402-03. Although NEV-SAFETY-73 contends that the SAR fails to adequately account for organic compounds that could contribute to corrosion and radionuclide transport, NEV-SAFETY-73 does not present any information at all that would demonstrate that the presence of the organic compounds it discusses would adversely affect the performance of engineered barriers or that these dust sources could affect the performance assessments or the dose to the RMEI. NEV-SAFETY-73, therefore, does not raise a genuine issue of material fact or law with respect to the license application and should be rejected.

Finally, NEV-SAFETY-73 seeks to raise a dispute with SAR subsection 2.3.5.5 and "similar" sections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires

that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC. 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

For the foregoing reasons, this contention is inadmissible and should be rejected.

NEV-SAFETY-74 – IMPACT OF MICROBIAL ACTIVITY

> SAR Subsection 2.3.6.3.3.2, and similar subsections, which predict limited microbial activity in the repository, and therefore, limited impact on drift chemistry and the waste package, ignore the archaea, resulting in an underestimation of the potential for microbial activity and microbially influenced corrosion.

NEV Petition at 405. In this contention Nevada asserts that DOE's predictions of limited microbial impact on in-drift chemistry and corrosion are deficient because they do not take account of the possible presence of archaea extremophiles. *See* NEV Petition at 405. Because of certain distinctions between bacteria and archaea, Nevada argues that an analysis of the archaea population at Yucca Mountain should have been performed along with the eubacterial analysis. *See* NEV Petition at 407. Nevada alleges that two relevant distinctions are that archaea are known to survive and grow at higher temperatures than bacteria and that archaea have alternative mechanisms for carbon fixation as compared to bacteria, both of which could affect water chemistry and corrosion processes. *See* NEV Petition at 407-08.

Staff Response

The Staff oppose the admission of this contention because it fails to provide a concise statement of the facts or expert opinions supporting the contention in compliance with § 2.309(f)(1)(v), and does not provide sufficient information to demonstrate a genuine dispute of fact or law with the applicant pursuant to § 2.309(f)(1)(vi). For these reasons, NEV-SAFETY-74 should not be admitted.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant),

CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinions.

Nevada asserts that DOE failed to account for archaea in the microbial characterization. *See* NEV Petition at 407. This omission is significant, Nevada alleges, because some strains of extremophile archaea can survive in conditions that bacteria cannot. *See Id.*. Further, because archaea have developed distinct carbon fixation mechanisms, such as using the "oxidation of ammonia or hydrogen sulfide using either oxygen or metal ions as electron acceptors" they could have distinctive effects on corrosion, and, thus, effect radionuclide release and sorption. *See Id.* at 407-08.

Although Nevada makes these statements, it fails to provide significant and necessary support for them. First, although Nevada cites an article suggesting that archaea are widespread, this merely demonstrates that archaea *could* be present in the repository, not that they are. *See* NEV Petition at 407. Similarly, while also citing a reference indicating that some archaea can survive at temperatures of 121° C (11° C higher than any known bacteria, Nevada asserts), Nevada does not claim that this type of archaea extremophile is the same type that is asserted to be widespread or otherwise expected to be found inside the repository. *See* NEV Petition at 407. Nevada also does not claim or provide information that conditions inside the repository would not still be too hostile for *any* microbes, as DOE calculates conditions would be. Finally, Nevada provides no explanation for where the speculated alternative energy sources for carbon fixation would come from. For these reasons, Nevada has failed to provide the necessary facts or expert opinion to support the claims in this contention.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

NEV-SAFETY-74 alleges that the SAR ignores archaea, the presence of which could impact corrosion of waste packages and drip shields, rendering the SAR's description of the potential impacts of microbial activity on corrosion inaccurate. NEV Petition at 405. However the SAR at FEP 2.1.10.01.0A "Microbial Activity in EBS" screens "the effects of microbes on corrosion of waste packages, cladding, and waste form." SAR Section 2.2, Table 2.2-5 at 2.2-248. NEV-SAFETY-74 does not challenge the SAR's screening of this FEP, which includes not just eubacteria, but all microbes.

Therefore, even if NEV-SAFETY-74 was admitted and successfully litigated, its outcome would have no bearing on this proceeding because the effects of microbial activity would still be screened from consideration in the performance assessment. NEV-SAFETY-74, therefore, does not raise a genuine dispute with respect to the application, and, therefore, should be rejected.

NEV-SAFETY-74, also seeks to raise a dispute with SAR Subsection 2.3.6.3.3.2 and "similar" subsections. NEV Petition at 408. To the extent that Nevada seeks to raise an issue with "similar" SAR subsections, the contention is inadmissible with respect to those unspecified SAR subsections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC

281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Nevada challenges SAR Subsection 2.3.6.3.3.2 which describes microbial activity and the effects of the same as limited. *See* NEV Petition at 408. However, as discussed in the section above, Nevada provides only vague and speculative evidence of other potential uncharacterized microbial activity that it fails to tie to conditions at the repository. Thus, Nevada fails to demonstrate that the effects of microbial activity are underestimated, and, as such, fails to demonstrate a genuine dispute of fact or law with the applicant.

NEV-Safety-74, also seeks to raise a dispute with "similar" or "similar and related" subsections. NEV Petition at 408. To the extent that Nevada seeks to raise an issue with "similar" or "similar and related" SAR subsections, the contention is inadmissible with respect to those unspecified SAR subsections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also Susquehanna*, LBP-07-04, 65 NRC at 316.

Here, because Nevada does not specify which other "similar" or "similar and related" subsections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another subsection in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" or "similar and related" to the named subsection. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the

petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR subsections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-74 should be rejected.

NEV-SAFETY-76 – MICROBIAL DENITRIFICATION

> DOE underestimates some important modes of corrosion that depend on nitrate concentrations in SAR Subsection 2.3.6.4, and similar subsections, because of the conclusion in SAR Subsection 2.3.6.3.3.2, at 2.3.6-25, that oxic conditions will prevail in the repository over the growth-permissive high humidity and cooler period, and because of the erroneous assumption that microbial denitrification of nitrate is a strictly anaerobic process.

NEV Petition at 415. NEV-SAFETY-76 criticizes DOE conclusions that oxic conditions will prevail in the repository because Nevada alleges that oxygen gradients will occur due to microbial aerobic respiration and aerobic denitrification. *See* NEV Petition at 415.

Staff Response

The Staff oppose the admission of this contention because it does not raise a material issue with regard to the proposed action and does not raise a genuine dispute of law or fact with regard to the license application. *See* 10 C.F.R. §§ 2.309(f)(1)(iv) and (vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada must demonstrate that the *issue raised* is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34 (1999) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). *See also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993) (information material to a decision whether to grant a radioactive byproduct materials license). In this proceeding, the finding the Staff must make is of whether "there is

reasonable assurance that ...radioactive materials ...can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and ...there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, whether sections 63.31(a)(3)(i) and (ii), and, accordingly, the performance assessment requirements of sections 63.114(b) and (c) have been met. While Nevada alleges noncompliance with these regulations, the state does not address or challenge the screening of FEP 2.1.10.01.0A involving "Microbial Activity in EBS." SAR § 2.2, Table 2.2-5 at 2.2-248. Thus, Nevada fails to provide any analysis or reference that supports its proposition that had DOE considered oxygen gradients due to aerobic respiration and aerobic denitrification it would make a difference with regard to a finding that 10 C.F.R. §§ 63.31(a)(3) and 63.114 has been met or that it would cause a change in DOE's decision to screen the FEP. Therefore, this contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

NEV-SAFETY-76 alleges that the SAR does not adequately account for the role of microbial aerobic respiration and denitrifying bacteria that could impact corrosion of waste packages and drip shields, rendering the SAR's description of the potential impacts of microbial activity on drift chemistry inaccurate. NEV Petition at 415. However the SAR at FEP 2.1.10.01.0A "Microbial Activity in EBS" screens "the effects of microbes on corrosion of waste packages, cladding, and waste form." SAR Section 2.2, Table 2.2-5 at 2.2-248. NEV-

SAFETY-76 does not challenge the SAR's screening of this FEP, which includes the substance of this contention, to wit: denitrification and microbial respiration as "microbial processes." This FEP was excluded on the basis of low consequences. *See id.* Nevada has provided no reasoned explanation as to why DOE's screening argument is flawed and that the consequences would be greater, in terms of repository performance, than those predicted by DOE.

Therefore, even if NEV-SAFETY-76 was admitted and successfully litigated, its outcome would have no bearing on this proceeding because the effects of microbial activity would still be screened from consideration in the performance assessment. NEV-SAFETY-76, therefore, does not demonstrate that a genuine dispute of fact or law exists with respect to the application.

Nevada seeks to raise a dispute not just with the specifically referenced SAR subsection 2.3.6.4.3.1.1, but also "all similar and related subsections" and "all models that use the corrosion inhibition of the nitrate ion. . ." NEV Petition at 419. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection or models that are not identified with specificity, the contention is inadmissible with respect to those unspecified SAR sections and models. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other “similar and related” sections of the SAR or models it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections and models. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. Likewise, Nevada should have specifically identified the location in the SAR of the models that it disputes. The Staff and applicant should not have to guess which sections Nevada believes are “similar and related” to the named section or which corrosion models Nevada disputes. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified the models or any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-77 -CORROSION FROM ROCK BOLT SEEPAGE

> SAR Subsection 1.3.4.4 and similar subsections, which discuss the ground support system in the emplacement drifts, fail to mention or consider the fact that the Super Swellex™ are hollow and would act as a conduit for seepage into the emplacement drifts and the neglect of this process means that the TSPA-LA assumptions relating to isolation of the wastes within the waste package are unfounded.

Nevada Petition at 421. Based on the absence of discussion in the application, Nevada believes that DOE has implied that there is no need to address seepage before repository closure. *Id.* at 422. Nevada then infers that DOE has concluded that seepage is not significant, or that waste packages are sufficiently corrosion-resistant to seepage, during the pre-closure period. *Id.* However, Nevada found no discussion of any calculations or modeling to support the inferred conclusion. *Id.*

Further, Nevada alleges that the use of friction-type rock bolts was not considered completely in that DOE did not mention that the rock bolts act as a conduit for seepage. *Id.* at 422-423. According to Nevada, the rock bolts could directly transfer water "at 3 m and further" from the opening drifts, with a consequence that the potential for corrosion of the waste packages is understated. *Id.* at 423.

Staff Response

The Staff opposes admission of NEV-SAFETY-77 for the reasons given below.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada asserted that NEV-SAFETY-77 was material and presented a dispute with the application because Nevada alleged violations of 10 C.F.R. §§ 63.113 and 63.114. NEV Petition at 421-422. Nevada cannot establish materiality from non-compliance with 10 C.F.R. §§ 63.113 and 63.114, because those regulations are for *after* permanent closure, whereas Nevada's concern is for *before* permanent closure. *See* NEV Petition at 422 (discussing that its concern is a lack of discussion addressing seepage before the drip

shields are installed for permanent closure). NEV-SAFETY-77 is concerned with SAR Subsection 1.3.4.4, which is part of Chapter 1, "Chapter 1: Repository Safety Before Permanent Closure." Therefore, Nevada's claims of violations based on post-closure regulations do not support admissibility, as the issue in NEV-SAFETY-77 is immaterial and unsupported by the regulations cited by Nevada. For this reason, the contention must be denied.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.*(Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" "should be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient." and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (internal citation omitted); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Station, Units 1 & 2). LBP-02-4, 55 NRC 49, 66 (2002). Nevada has not offered any documents, facts, or bases for its experts' opinions to support its claim. *See* NEV Petition at 422-423. Nevada has proffered the support of three experts: Michael C. Thorne, Doug F. Hambley, and Don L. Shettel, who adopt paragraph 5 (Hambley and Shettel) or paragraph 6 (Thorne) of the contention. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 9, Affidavit of Doug F. Hambley; and Attachment 10, Affidavit of Don L. Shettel, Jr. The adopting affidavits and the adopted paragraphs do not

offer any bases for their opinions. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (Conclusory statements, even when made by an expert, are not sufficient to support a contention). The only reference cited by Nevada is the SAR itself. *See* NEV Petition at 422-23. Nothing is offered to support Nevada's theory of a gap around the bolts, how large the gap is, how much water would be transported via the bolt, and how the water impacts corrosion rates. Nevada has essentially provided only a notice-pleading, devoid of any supporting information beyond the general claim of an "inaccurate assessment," which is insufficient for admission. *See Fansteel, Inc.*, CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant… He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.") (citation omitted).

Nevada asserted that NEV-SAFETY-77 was material and presented a dispute with the application because Nevada alleged violations of 10 C.F.R. §§ 63.113 and 63.114. NEV

Petition at 423-424. As discussed above, for pre-closure, Nevada failed to show how NEV-SAFETY-77 was material, and did not support the contention. Further, Nevada is mistaken in its claim that the application failed to mention or consider the rock bolts for seepage. It is clearly discussed in post-closure, where DOE wrote

> **Design Features Related to Water Seeping into Drifts** — . . . Rock bolts and other ground support described in Section 1.3.4.4 have been shown to not significantly affect the potential for or the magnitude of seepage (Section 2.3.3.2.3.4.1; excluded FEP 2.1.06.04.0A, Flow through rock reinforcement materials in EBS, Section 2.2, Table 2.2-5).

SAR Subsection 2.3.3.1 at 2.3.3-8 (emphasis in original). More details on the review of rock bolts are described in SAR Subsection 2.3.3.2.3.4.1, "Seepage into Intact Emplacement Drifts:"

> The seepage model for performance assessment is also used to simulate the potential effect of rock bolts in the drift ceiling on seepage (BSC 2004a, Section 6.5). Several rock bolts scenarios are examined in a sensitivity analysis, including cases representing both grouted and ungrouted boreholes. It is shown that these features have a minor effect on seepage, and can be excluded in the TSPA drift seepage submodel (Section 2.2, Table 2.2-5, for excluded FEPs 1.1.01.01.0B, Influx through holes drilled in drift wall or crown; and 2.1.06.04.0A, Flow through rock reinforcement materials in EBS).

SAR at 2.3.3-35. Nevada has not disputed these portions of the application, nor the analyses referenced therein. Thus, Nevada's claim can not be admitted as a post-closure issue. *See Susquehanna,* LBP-07-10, 66 NRC at 24.

To the extent that this contention seeks to raise a preclosure issue, Nevada does not support its Nevada's theory of a gap around the bolts, how large the gap is, how much water would be transported via the bolt, and how the water impacts corrosion rates. Therefore, it fails to raise a genuine dispute under 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's

dose standards" could only be performed by DOE, *see* NEV Petition at 423-24, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. See NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (citing GPU Nuclear, Inc. (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 77 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 423-24. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves."

Commonwealth Edison Co. (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 423-24. Therefore, with respect to this part of the NEV-SAFETY- 77, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 1.3.4.4 and "similar" subsections. NEV Petition at 421, 423. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the

proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-78 - STATIC CORROSION TESTS ON ALLOY 22

> SAR Subsection 2.3.6.3 and similar subsections, which describe long-term weight loss measurements of the outer corrosion resistant material, alloy C-22, of the waste canister at the long-term test corrosion facility, fail to adequately represent the corrosion environment that is expected in a mined geologic repository situated in the unsaturated zone.

NEV Petition at 425. Nevada asserts that corrosion tests performed in liquid, partially in liquid, or right above the water line, are invalid. *See id.* at 426-427. Nevada asserts that the conditions of the corrosion tests were not realistic, and that realistic conditions include changing temperatures, high humidity, accumulated dry salt and dust, dripping seepage water with periodic dry-out, and contact with other materials (e.g., drip shield materials). *Id.* at 427. Nevada also states that the test conditions are non-conservative. *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-78 for the reasons below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), *affirming* LBP-05-28, 62 NRC 585 (2005) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

Nevada has offered no citation to references in support of its assertion that the test conditions are non-conservative. However, three of Nevada's experts adopt paragraph 5 of NEV-SAFETY-78; *See* NEV Petition, Attachment 4, Affidavit of Adrian H. Bath ¶ 2; Attachment 10, Affidavit of Don L. Shettel, Jr. ¶ 2; Attachment 17, Affidavit of Maurice E.

Morgenstein ¶ 2; one expert adopts paragraph 6, NEV Petition, Attachment 3, Affidavit of Michael C. Thorne ¶ 3. None of the adopting affidavits provides any additional insight into how Nevada concluded the test conditions were non-conservative. *See id.* Likewise, paragraphs 5 and 6 of the contention provide no insight as to why the test conditions are non-conservative. *See* NEV Petition at 426-428. Although Nevada has proposed an alternate test (*id*. at 427-28), Nevada has presented no facts to show that the testing facility used by DOE was insufficient, that differing test stratagems would have produced different (i.e., more conservative) results, that performance would be adversely affected at the repository scale, nor that DOE was required to use Nevada's method. *See id.* The conclusory opinion of Nevada's experts that the DOE tests were non-conservative or not appropriate is insufficient to support admission of a contention. *See USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant… He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See* also *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Nevada has implied that DOE ignored realistic conditions by, for example, not

considering temperatures up to 200°C and limiting testing to just 60°C and 90°C. *See* NEV Petition at 426-427. However, as discussed in the SAR, DOE considered such temperatures. *See* SAR Section 2.3.6.3.2.2 at 2.3.6-21 (Discussing that a temperature dependence term is appropriate for corrosion, and extrapolating corrosion rates derived from a polarization-resistance technique down to 25°C and upwards to 200°C.) Thus, Nevada's implication about failing to consider temperatures as high as 200°C is incorrect. Further, Nevada does not challenge the efficacy and results of the extrapolation procedure. *See* NEV Petition at 426-427.

Nevada's failure to discuss and dispute what is present in the application, and failure to acknowledge what is in the application, does not support admission of the contention. *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 428, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* Thorne Affidavit ¶ 3. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the

application).

NEV-SAFETY-78 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention...." NEV Petition at 428. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 428. Therefore, with respect to this part of the NEV-SAFETY-78, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.3 and

“similar” subsections. NEV Petition at 425. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-79 - STATIC GENERAL CORROSION TEST SOLUTIONS

> SAR Subsection 2.3.6.3 and similar subsections, which describes static long-term general corrosion tests on the waste package outer material, alloy C22, fail to address the need for and use of realistic, site-specific aqueous test solutions that are appropriate for waste packages situated in a humid, thermally perturbed, unsaturated environment.

NEV Petition at 429. Nevada argues that the well water and aqueous test solutions used for long-term corrosion tests were not realistic. *Id.* Nevada claims that the water used by DOE for corrosion tests on alloy C22 was water from the saturated zone and thus, non-conservative, unrealistic and non-site specific for corrosion tests. *Id*. at 430-431.

Staff Response

The Staff opposes admission of NEV-SAFETY-79 for the reasons below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

Nevada has offered no citation to references in support of its assertion that the water used for the corrosion tests was inappropriate or non-conservative. However, three of Nevada's experts adopt paragraph 5 of NEV-SAFETY-79 (*see* NEV Petition Attachment 4, Affidavit of Adrian H. Bath ¶ 2; Attachment 10, Don L. Shettel, Jr. ¶ 2; and Attachment 17, Maurice E. Morgenstein ¶ 2) one expert adopts paragraph 6 (*see* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne ¶ 3). None of the adopting affidavits provides any additional

insight into why the use of the J-13 well water and related test waters was not conservation. *See id.* Likewise, paragraphs 5 and 6 of the contention provide no insight as to why the test samples were non-conservative. *See* NEV Petition at 426-427. Although Nevada asserts that the use of alternate water samples would have been more appropriate, (*id*. at 430-431), Nevada has presented no facts or justification to show that the test water used by DOE was insufficient, or that DOE was required to use Nevada's method. *See id.* The conclusory opinion of Nevada's experts that the DOE tests were non-conservative or not appropriate is insufficient to support admission of a contention. *USEC,* CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant… He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See* also *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.").

Nevada has stated that using well water and related solutions shown in SAR Table 2.3.6-1 is non-conservative. NEV Petition at 430-431. The chemical properties of the test solutions are presented in SAR Table 2.3.6-1. Nevada has presented no discussion on why those solutions were not correct, but instead asserts that other water samples should have been used, without a sound scientific basis as to why the present-day water is superior to

prepared, chemistry-controlled samples. *See* NEV Petition at 430-431.

Nevada asserts that the tests were non-conservative, but provides no facts or discussion to support its view that because the test conditions were different than the "humid, thermally perturbed, unsaturated environment" (NEV Petition at 429) the test is automatically non-conservative. *See* NEV Petition at 430-431. Nevada's failure to discuss and dispute, in a meaningful way, why the test method is non-conservative does not support admission of the contention. *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 431-32, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne ¶ 3. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 79 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 431-32. To the extent that the reference is interpreted to state objections to

aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 431-32. Therefore, with respect to this part of the NEV-SAFETY-79, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.3 and "similar" subsections. NEV Petition at 429. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it

wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.\

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-80 - LOCALIZED CORROSION, CHLORIDE BEARING MINERAL DEPOSITS AND HOT WALL EFFECTS

> SAR Subsection 2.3.6.1.1 and similar subsections state that titanium is extremely resistant to localized corrosion due to its very passive film, and as a result, DOE has concluded that localized corrosion of titanium will not occur in repository environments and is excluded from the TSPA; DOE is incorrect because the most likely failure mode of titanium in this application is localized corrosion under insulating mineral deposits from seepage water, which has not been properly considered by DOE, that could lead to early failure of the drip shield due to penetration of the water diversion surface.

NEV Petition at 433. Nevada claims that DOE's testing did not determine the limits under which corrosion of titanium will occur. *Id.* Also, DOE did not address a likely corrosion condition. *Id.* Nevada acknowledges that DOE excluded the specific features, events, and processes of localized corrosion. *Id*. at 435 (citing SAR Subsection 2.3.6.2.3 and its discussion of FEP 2.1.03.03.0B). Nevada alleges that conditions reported in National Association of Corrosion Engineers (NACE) publications are likely to occur at Yucca Mountain. *Id*. Nevada states that DOE failed to use tests with the right chemistry, pH conditions, and temperature as would be present in emplacement drifts. *Id.* at 435-436.

Staff Response

The Staff oppose NEV-SAFETY-80 for the following reasons.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An expert opinion that merely states a conclusion (*e.g.*, the application is ‘deficient,’ ‘inadequate,’ or ‘wrong’) without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff’d on other* grounds, CLI-98-13, 48 NRC 26 (1998)).

Although Nevada describes a very specific type or process of corrosion as a "significant risk" and alleged that it was not "adequately considered," Nevada offers no reasons why the risk from that particular process was "significant," and instead Nevada describes a complex chain of events, without discussions of the likelihood, processes, time-frame, and other issues that could show a significance of the risk. *See* NEV Petition at 435. Also, although Nevada claims NACE reports applies to Yucca Mountain, Nevada offers no explanation of its conclusions that unknown reports of NACE are applicable to Yucca Mountain. *See id.* As Nevada does not identify or discuss these reports, Nevada's statements are conclusory assertions that do not support admission of this contention. *See USEC, Inc*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact. . .The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. . . He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.")

The thrust of NEV-SAFETY-80 is that DOE's analysis for representing localized corrosion was incorrect. *See* NEV Petition at 435. Nevada believes DOE failed to consider localized corrosion under a particular type of environmental conditions. *See id.* However, in making this assertion, Nevada does not frame it against what was in the application or what DOE actually did. DOE's technical basis for FEP 2.1.03.03.0B FEP may be found in "SNL 2008a" *Features, Events, and Processes for the Total System Performance Assessment: Analyses*. ANL-WIS-MD-000027 REV 00. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20080307.0003 (LSN# DEN001584824) at 6-405 - 6-413; *see* SAR subsection 2.2.1.1.2 at 2.2-9 – 2.2-10. Nevada shows awareness of the FEP screening (NEV Petition at 435 (citing SAR Subsection 2.3.6.2.3 and its discussion of FEP 2.1.03.03.0B)), but does not directly dispute or discuss this analysis. The fact that DOE did consider this FEP, excluding it on the basis of low probability, refutes Nevada's assertion that DOE ". . . ignore[ed] localized corrosion of titanium." *See* NEV Petition at 435. Based on the discussion in the SAR, it appears that DOE did not ignore this issue and considered it in the screening analysis. Nevada fails to provide contradictory information on the probability of the FEP occurring. Accordingly, Nevada fails to craft an admissible contention. *See Millstone,* CLI-01-24, 54 NRC at 358; 10 C.F.R. 2.309(f)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 437, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-80 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention. . ." NEV Petition at 437. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes

that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 437. Therefore, with respect to this part of the NEV-SAFETY-80, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.1.1 and "similar" subsections. NEV Petition at 437. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-81 - HYDROGEN UPTAKE RESULTING FROM GENERAL CORROSION

> SAR Subsection 2.3.6.8.1 and related subsections describe general corrosion of the drip shield, provide calculations of weight loss due to general corrosion, and consider the effect of thinning in terms of mechanical weakening of the structure, but DOE fails to consider the effects of localized embrittlement due to hydride formation resulting from general corrosion, and consequently DOE incorrectly assumes that the drip shield will not fail by brittle fracture resulting from rockfall or similar event.

NEV Petition at 438. NEV-SAFETY-81 claims that DOE has failed to consider the effects of localized embrittlement in its evaluation of drip shield corrosion. NEV Petition at 438. Nevada asserts that hydrogen absorbed during general corrosion may result in hydride formation, which could result in embrittlement. *Id.* at 440.

Staff Response

As discussed below, however, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is not admissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A}n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion…" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). NEV-SAFETY-81 alleges that DOE failed to consider the effects of localized embrittlement and that DOE consequently fails to consider the increased risk for brittle fracture. NEV Petition at 438. Nevada claims that titanium general corrosion results in the absorption of a small percentage of hydrogen and

that hydrogen "uptake" can "lead to hydride formation and embrittlement, residual stress, and cracking long before the part is consumed." *Id.* at 440. Nevada concludes that "DOE fails to demonstrate that the hydrogen absorbed during general corrosion (of the corrosion allowance) will not result in hydride formation, with its consequent effects on component integrity." *Id.* However, Nevada provides no discussion regarding how this will qualitatively effect component integrity or DOE's analysis. It is merely an assertion that DOE's analysis is flawed with no context as to how significant the issue might be. Such assertions that the applicant is "wrong" without any supporting basis, even from an expert, is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472. As such, the contention is not admissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-81 alleges that SAR Subsections 2.3.6.8.1 and related subsections fail to consider the effects of localized embrittlement. However, this ignores the fact that the very document cited by Nevada, "ANL-EBS-MD-000006 Revision 02, Hydrogen-Induced Cracking of the Drip Shield, September 2004 (This is a Correction to DOC.20040909.0004)"

(09/07/2004), LSN# DN2001646621, does address the issue of absorption of hydrogen. Furthermore, DOE excluded this FEP (2.1.03.04.0B-Hydride cracking of drip shields) on the basis of probability (SAR at §2.2, Table 2.2-5, p. 2.2-233). As discussed above, Nevada has not provided any quantitative information to contradict DOE's determination with respect to this FEP. Nevada does not challenge the FEP screening (SAR §2.2), nor has Nevada demonstrated in this contention that this FEP should have been included. A mere assertion that there is a material issue is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone Nuclear Power Station*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-81 is, therefore, inadmissible.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 441-42, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 81 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 441-42. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 441-42. Therefore, with respect to this part of the NEV-SAFETY-81, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.8.1 and "related" subsections. NEV Petition at 438,441. To the extent that Nevada seeks to raise an

issue with a “related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

NEV-SAFETY-82 - CORROSION OF THERMALLY OXIDIZED TITANIUM

> SAR Subsection 2.3.6.8.3 and similar subsections state that the drip shield will be fully stress-relief-annealed before emplacement and describe the process to be conducted in fuel-air atmosphere at 1150°F which will result in significant surface oxide thickness compared to normal oxide films formed in air; however, DOE has failed to evaluate the effects of thermally oxidized titanium (simulating air stress relieved material that is specified as a manufacturing step intended to eliminate residual stresses assumed to eliminate stress corrosion cracking (SCC) and other hydrogen cracking issues) under the relevant repository corrosion conditions, including effects on general corrosion rates and under-deposit corrosion from seepage water evaporating on hot wall surfaces, which affect the validity of the corrosion analysis used to predict drip shield performance in the LA and could lead to early drip shield failures due to unanticipated decreased corrosion performance.

NEV Petition at 443. NEV-SAFETY-82 claims that because DOE has failed to evaluate the effects of thermally oxidized titanium under the "relevant repository conditions," the validity of DOE's drip shield corrosion analysis is suspect. NEV Petition at 443.

Staff Response

As discussed below, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion…" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). In this contention Nevada concedes

that "thermally thickened titanium oxide films have been shown to be beneficial to corrosion" and that "oxide growth is generally accepted to slow over time." NEV Petition at 445. Nevada nonetheless challenges the validity of DOE's corrosion analyses because "none of the tests described in the [license application] and supporting materials have attempted to simulate thermally thickened oxide under the long-term conditions involved in the repository." *Id.* Nevada simply concludes, without any supporting information that "[t]he performance of this thicker oxide layer and the specific effect on the material compositions and combinations of material compositions…in the drip shield is uncertain." *Id.* This is simply a conclusory, statement that is not supported with any further explanation or any indication that Nevada has data or studies to suggest that thermally thickened titanium oxide will not perform as DOE says it will. NEV-SAFETY-82 takes issue with the fact that the corrosion tests were not done on the thermally thickened oxidized titanium "under the long-term conditions involved in the repository." *Id.* Nevada does not itself make an assessment of the performance of the thermally oxidized titanium other than to imply that there will be decreased corrosion performance. *Id.* at 443. In sum, Nevada provides no basis for its position that DOE's corrosion tests were inappropriate. Such assertions that the applicant is "wrong" without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.,* CLI-06-10, 63 NRC at 472. As such, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety

Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-82 "challenges the validity of DOE long-term corrosion test results reported in SAR subsection 2.3.6 and similar subsections, because the condition of materials tested for corrosion do not duplicate the conditions of material to be placed in the repository." NEV Petition at 445. Nevada concedes that thermally thickened oxide films have been shown to be resistant to corrosion and that oxide growth generally slows over time. *Id.* Nevada's basis for the contention appears to be that because actual drip shield corrosion (of thermally oxidized titanium) under repository conditions is "unknown" that the application is deficient. Nevada does not offer any data to suggest that testing under the conditions it proposes would yield a significantly different result, such that a genuine dispute could be established. Further, Nevada concedes that thermally thickened titanium oxide film enhances corrosion resistance "under normal industrial exposures." *Id.* However, as noted above, Nevada does no more than conclude that under repository conditions drip shield performance is "uncertain" and "unknown." DOE corrosion tests were on the normal air-oxidized condition. SAR Section 2.3.6.8.3. The contention takes issue with the fact that the corrosion tests were not done on the thermally oxidized material under repository conditions; however, Nevada does not explain why it would not be logical to conclude that corrosion under repository conditions should be less than that predicted by corrosion tests on the less resistant material. Consequently, Nevada has not shown that there is a material dispute. The contention is not admissible under 10 C.F.R. § 2.309(f)(1)(vi) because Nevada has not established that a genuine dispute exists with respect to DOE's drip shield corrosion model, particularly given that Nevada concedes that thermally thickened titanium oxide is normally beneficial to corrosion resistance. *See Millstone Nuclear Power Station*, CLI-01-24, 54 NRC

at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-82 is, therefore, inadmissible.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 446-447, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 82 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 446-47. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi)

requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 446-47. Therefore, with respect to this part of the NEV-SAFETY-82, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.8.3 and “similar” subsections. NEV Petition at 443,445. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory

Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-83 - ADEQUACY OF METHODS OF GENERAL AND LOCALIZED CORROSION TESTING OF THE DRIP SHIELD

> SAR Subsection 2.3.6 at 2.1-104 and 105 describe corrosion tests as long-term immersion exposures of open, creviced, and stressed specimens all together in closed tanks under two temperature conditions; however, the tests are not adequately representative of corrosive conditions in the proposed repository that will affect repository performance and specifically do not address the effects of Ti++ ion concentrations and aeration in the test solution that could change corrosion behavior and lead to erroneous conclusions that fail to predict corrosion performance of the actual drip shields.

NEV Petition at 448. NEV-SAFETY-83 claims that the corrosion tests performed by DOE "do not address several issues critical to corrosion testing of titanium." *Id*. Specifically, Nevada asserts that DOE does not address solution replenishment, aeration conditions, pH reduction, concentration increases, hot wall effects, and weight loss measurements where corrosion rates are low. *Id.*

Staff Response

As discussed below, Nevada's contention fails to meet the pleading criteria set forth in 10 C.F.R. §§ 2.309(f)(1)(v) and (vi). Accordingly, the contention is not admissible. The Staff notes that this contention raises numerous issues about discrete aspects of the methods used in DOE's corrosion testing program. *Id.* Though the Staff does not oppose this contention solely on the basis of it raising multiple issues, the Staff notes that this contention violates the directive of the Advisory PAPO Board that contentions be limited to a single issue. *U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 68 NRC 450, 454-455 (2008).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the

application is ‘deficient,’ ‘inadequate,’ or ‘wrong’) without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). NEV-SAFETY-83 challenges various aspects of the corrosion testing methods used by DOE for general and localized corrosion of the drip shield. Nevada alleges that “a lack of description of replenishment of solutions or of tests of alternate aeration conditions leads one to believe this important practice in titanium corrosion testing was not considered in the DOE tests described.” NEV Petition at 450. However, Nevada does not provide any basis for the importance of replenishment of solution. Nevada merely asserts that “early researchers” concluded that titanium corrosion decreased over time, but that subsequent research refutes this premise. *Id.* Nevada also concludes that “in repository conditions, dripping solutions are constantly replenished.” *Id.* Neither of these statements is supported with further information. Nevada refers to general experiments of titanium ions in solution, but no reference is given to these experiments and no further information is given regarding Nevada’s assertion regarding dripping solutions in repository conditions. Likewise, with respect to aeration, Nevada asserts that “many researchers” test air aeration and that “[b]ubbling the air, oxygen or nitrogen through the solution is likely more reliable in obtaining the desired conditions…” *Id.* at 451. Again, Nevada does not indicate which researchers to whom it is referring, nor does Nevada provide any support for why aeration is “likely more reliable.”

With respect to hot wall conditions, Nevada asserts, “In the case of chloride-containing salts, for example, the deposit can also lead to concentration of chemical species that can exacerbate corrosion, and are often seen to lead to localized corrosion.” *Id.* at 452. Nevada goes on to conclude that “…many corrosion researchers test temperatures or chemical concentrations in excess of the bulk solution so that they know how much margin there may be in excess of predicted bulk solution conditions.” *Id.* at 452. As with the other references

to “researchers” Nevada does not provide a reference to such research or context for its significance with respect to the issues raised in the contention, in this case with respect to chloride containing salts. In sum, Nevada points out several alleged deficiencies in DOE’s corrosion testing program, but does not provide any reference for research data it apparently relied upon in drafting the contention. Such assertions that the applicant is “wrong” or the application “deficient” without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472. As such, the contention should not be admitted.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. “[A] contention must show that a “genuine dispute” exists with the applicant on a material issue of law or fact…The intervenor must do more than submit “bald or conclusory allegation[s]” of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.” *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-83 challenges various aspects of the corrosion testing methods used by DOE for general and localized corrosion of the drip shield as described in SAR Subsection 2.3.6 and similar subsections. As discussed above, Nevada’s basis for challenging DOE’s corrosion testing program is not adequately supported. Nevada does not offer any data to suggest that testing under alternative testing conditions significantly different results would be achieved, such that a genuine dispute could be established. Such assertions, without

supporting basis is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). There is not sufficient information provided in the contention to determine if a genuine dispute exists because Nevada's contention is based solely on unsupported assertions that DOE's testing methods are "not valid for use in this context." NEV Petition at 452. *See Millstone Nuclear Power Station*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. Therefore, NEV-SAFETY-83 should not be admitted.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 453, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 83 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 453. To the extent that the reference is interpreted to state objections to aspects

of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 453. Therefore, with respect to this part of the NEV-SAFETY-83, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6 and "similar" subsections. NEV Petition at 452. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it

wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-84 - USE OF DIFFERENTIAL WEIGHTLOSS TO ESTIMATE VERY LOW CORROSION RATES

> SAR Subsection 2.3.6.8.1 and similar subsections state that general corrosion may occur, but DOE describes immersion corrosion testing methods and differential weight loss measurements to predict both general and localized corrosion where corrosion rates are very low and the data are to be extrapolated for thousands of years. The test methods are not sufficient to measure general and localized corrosion to an accuracy level sufficient for extrapolation to predict drip shield performance.

NEV Petition at 454. NEV-SAFETY-84 alleges that DOE's corrosion testing methods, specifically differential weight loss measurements, are inaccurate for general corrosion and fail to estimate the severity of localized corrosion. *Id*.

Staff Response

As discussed below, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is not admissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-84 asserts that weight loss testing on "specimens with extremely low corrosion rates is problematic." NEV Petition at 456. Nevada claims that immersion testing, as done by DOE "without describing solution replenishment procedures, leaves open the possibility that all test results are compromised due to the presence of titanium ion in solution." *Id.* at 457. Nevada also faults DOE's use of limited aeration as opposed to "a more positive way to assure oxygen equilibrium with the test solution" also compromises DOE's results (*Id.*); however, Nevada fails to provide any information as to how this is related to refreshing the immersion solution or what effect its proposed aeration method would have on the overall results. Nevada does not provide any information that its proposed testing methods would resolve the problem of extrapolating data "for times several orders of magnitude greater than those tested." *Id.* Nevada simply asserts that alternative testing methods will yield more accurate results regarding general and localized corrosion, but Nevada does not support this assertion. Such conclusory assertions are not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). Thus, Nevada has not established that a genuine dispute exists with respect to DOE's corrosion testing methods. *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-84 is, therefore, inadmissible.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 458, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear

Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 84 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 458. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 458. Therefore, with respect to this part of the NEV-SAFETY-84, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.8.1 and “similar” subsections. NEV Petition at 454, 457. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-85 - DECLINING CORROSION RATE OVER TIME

> SAR Subsection 2.3.6 states that the model implementation for corrosion is considered conservative because the general corrosion rate of metals and alloys is known to decrease with time, but the referenced tests are invalid and therefore this assumption is not applicable.

NEV Petition at 459. NEV-SAFETY-85 challenges DOE's corrosion model assumption that corrosion rates decline over time because the testing methods used are invalid. *Id.* This issue is essentially the same issue raised in NEV-SAFETY-82, 83, and 84.

Staff Response

As discussed below, NEV-SAFETY-85 does not satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(iv)-(vi). Accordingly, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

The Commission's regulations at 10 C.F.R. § 2.309(f)(1)(iv) require that an issue must be material to the findings the Commission must make. "Any issues of law or fact raised in a contention must be material to the grant or denial of the license application in question, i.e., they must make a difference in the outcome of the licensing proceeding so as to entitle the petitioner to cognizable relief…This requirement of materiality embodies the notion that an alleged error or deficiency regarding a proposed licensing action must have some significance relative to the agency's general responsibility and authority to protect the public health and safety and the environment." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Facility), LBP-98-7, 47 NRC 142, 179-80 (1998). In addition, the Order of the PAPO Board made clear that Section 2.309(f)(1)(iv) "requires citation to a statute or regulation that explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Department of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-85 challenges the determination in SAR subsection 2.3.6 that the "model

implementation for corrosion is considered conservative". NEV Petition at 459. Nevada alleges that DOE's tests showing corrosion rates to decline over time are "invalid," and therefore the assumption that DOE's corrosion model is conservative is not applicable. *Id.* However, there is no requirement that DOE's models have assumptions of conservatism. The data and analyses can be evaluated on their merits without considering what additional conservatism might be implied. The NRC's determination to grant or deny the construction authorization will be based on whether DOE's analyses and data support are consistent with the performance assessment. While Nevada alleges that DOE's LA fails to satisfy the requirements of various sections of 10 C.F.R. Part 63 (most specifically 10 C.F.R. §§ 63.113 and 63.114(f) and (g)), *Id.* at 459-60, 462, nothing in 10 C.F.R. Part 63 requires NRC to make a determination regarding the conservatism of DOE's assumptions. While such information may be informative in explaining compliance with regulatory requirements, Part 63 does not require that the NRC make a determination that DOE's assumptions are, in fact, conservative. As such, the issue raised by NEV-SAFETY-85 is not material to the findings the NRC must make and should therefore be dismissed.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An "expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion". *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). NEV-SAFETY-85 challenges DOE's determination that corrosion rates decrease over time, asserting that DOE's tests are "invalid" because they did not periodically refresh the test solutions. NEV Petition at 461. It is not entirely clear from the contention if Nevada is challenging the "general corrosion rate of metals and alloys" (see paragraph 1 of NEV-SAFETY-85), or just titanium, which is the focus

of discussion in Paragraph 5 of the contention; however, Nevada does not specifically discuss the corrosion of metals other than titanium. *Id.* at 459, 461. With respect to titanium, Nevada points out that early research found corrosion rates to decline over time, but that "subsequent research" challenges this assumption. *Id.* Nevada does not indicate what the subsequent research is or to what extent those results differ from those reached by DOE. Nevada also faults DOE's study of the effects of aeration because they "did not compare aeration using oxygen, air and nitrogen, for example, to better define valid bounds for its data, nor does the aeration method described, air passing over the surface, provide assurance that the aeration conditions were really known or consistent throughout DOE's testing." *Id.* Nevada provides no basis for this assertion that DOE's testing methods were inadequate. The contention contains no data to indicate that alternative testing methods would yield significantly different results than those performed by DOE. Rather, Nevada asserts that DOE's testing methods are flawed, without providing a basis for such a conclusion. Such assertions that the applicant is "wrong" without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.,* CLI-06-10, 63 NRC at 472. As such, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power

Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-85 challenges the validity of DOE corrosion test results reported in SAR subsection 2.3.6 and similar subsections, because Nevada claims that the testing methods are invalid. NEV Petition at 461-62. As discussed above, Nevada does not adequately explain the basis for its position or provide any information that alternative testing methods would yield significantly different results. Nevada merely asserts that there is a genuine dispute, without providing adequate information to determine if that is, in fact, the case. Such assertions are not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-85 should, therefore, be dismissed.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 462-63, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 85 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 462-63. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 462-63. Therefore, with respect to this part of the NEV-SAFETY-85, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-86 – ROLE OF ROCK DUST ON CANISTER SURFACES IN LOCALIZED CORROSION

> SAR Subsection 2.3.6.4.4.1 and related subsections, which describe DOE's model for localized corrosion, are grossly incomplete because common and ubiquitous rock dust (siliceous and feldspathic) can form crevices on C-22 and Ti-7 surfaces that are favorable environments for localized corrosion.

NEV Petition at 464. NEV-SAFETY-86 claims that rock dust, like mineral scales, corrosion products and rocks, can accumulate and form crevices on the waste package and drip shield surfaces, leading to localized corrosion and that DOE has not considered this possibility in its corrosion models. *Id.* at 466.

Staff Response

As discussed below, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citation omitted). In this contention Nevada asserts that DOE's model for localized corrosion is "grossly incomplete" because it does not account for dust that can form crevices favorable for corrosion. NEV Petition at 464. Nevada asserts that "nowhere within the SAR does DOE actually state that dust can form crevices." *Id.* at 466. Nevada argues that DOE's conclusion that brines produced from dust

deposits will not be corrosive (SAR Subsection 2.3.6.4.4.1) is contradictory to DOE's findings that crevices may form on the waste packages below mineral scales, corrosion products and rocks (SAR Subsection 2.3.6.4.3.1.3). *Id.* However, Nevada has failed to provide any explanation of how a thin deposit of loose, permeable dust will form a barrier that is impermeable to water and vapor akin to mineral scales, corrosion products and rocks. In other words, Nevada has not provided support regarding the process that needs to occur that would render invalid DOE's conclusion that brines produced from dust are not expected to cause localized corrosion. The formation of an impermeable layer consisting exclusively of dust which then forms a crevice is not explained. Such unsupported assertions are not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472. As such, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. He or she must 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.' " *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Nevada, in challenging DOE's TSPA, simply refers to SAR Subsection 2.3.6.4.4.1 "and related subsections" in asserting that the TSPA model for localized corrosion is "grossly incomplete" because it does not consider the formation of crevices by rock dust and the

possibility for localized corrosion as a result. NEV Petition at 467. However, as noted above, Nevada does no more than make conclusory statements regarding the alleged inadequacy of DOE's analysis. Further, Nevada offers no basis for the underlying assumption of the contention, namely that rock dust will, in fact, form the types of crevices in which localized corrosion can take place. This is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi) because Nevada has not established that a genuine dispute exists with respect to DOE's corrosion model. *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-86 is therefore an inadmissible contention.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 467-68, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 86 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 467-68. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 467-68. Therefore, with respect to this part of the NEV-SAFETY-86, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.4.4.1 and "related" subsections. NEV Petition at 464, 67. To the extent that Nevada seeks to raise an

issue with a “related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-87 - INTERGRANULAR SCC CORROSION DURING DRY-WET CYCLE

> SAR Subsection 2.3.6.5 and similar subsections, which describe stress corrosion cracking (SCC) of the waste package outer barrier, fail to consider SCC initiation as a consequence of dry-wet drip cycling inter-granular corrosion thereby underestimating the environmental causes for C-22 stress corrosion cracking.

NEV Petition at 469. NEV-SAFETY-87 contends that DOE has underestimated SCC as a consequence of dry-wet drip cycling. *Id*.

Staff Response

As discussed below, however, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion…" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). In this contention Nevada challenges the validity of DOE's treatment of SCC of C-22 because DOE has failed to consider the effect of dry-wet drip cycling in the SCC model abstraction. NEV Petition at 469. Nevada argues that "DOE has not adequately investigated corrosion of C-22 in the drift environment. Thus SAR Subsection 2.3.6.5 and similar subsections, which describe [SCC] of the waste package outer barrier, are grossly incomplete." *Id.* at 472. Nevada bases this conclusion on its own experiments in cyclic dripping and dryout. ("Experiments Devised to Study Temperature and

Geometry Effects of Corrosion of C-22 Alloy," 2008, LSN# NEV000005235). *Id.* at 471. Nevada asserts, without any underlying support or further explanation that, "[c]yclic dripping and dryout experiments using unsaturated zone water are reasonable approximations of conditions in the waste emplacement drift environment during thermal peak and cool down periods." *Id.* Nevada offers no support for its assertion that dripping/dry-out conditions are the likely in-drift conditions. Thus, the underlying basis for the contention rests solely upon the assertion that Nevada's experiments approximate the drift environment better than those done by DOE. Nevada has not provided any information in this contention or in its experimental data to support this premise. Thus, the contention merely asserts that Nevada's testing conditions are more appropriate without providing an adequate foundation. Such assertions that the applicant is "wrong" without any supporting basis are not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC*, CLI-06-10, 63 NRC at 472. As such, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-87 challenges the validity of DOE's SCC findings as described in SAR

subsection 2.3.6.5 and similar subsections, because DOE failed to consider wet-dry drip cycling inter-granular corrosion "thereby underestimating the environmental causes for C-22 stress corrosion cracking." NEV Petition at 472. As noted above, Nevada asserts, without providing any supporting basis, that its experiments more closely approximate the emplacement drift conditions. Furthermore, Nevada does not provide enough information to demonstrate that genuine deficiencies exist in DOE's treatment of stress corrosion cracking of C-22. Nevada's assertion that DOE has not adequately investigated C-22 corrosion is not supported and the contention does not contain enough information to determine that a genuine dispute exits. Such assertions, without supporting basis are not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358. NEV-SAFETY-87 is, therefore, inadmissible.

. In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 472-73, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the

application).

NEV-SAFETY- 87 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 472-73. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 472-73. Therefore, with respect to this part of the NEV-SAFETY-87, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.5 and

"similar" subsections. NEV Petition at 469, 472. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-89 - INHIBITION OF C-22 CORROSION BY HIGH NITRATE TO CHLORIDE RATIO

> SAR Subsections 2.3.5.3.2.2.1 (unsaturated zone pore water chemistry), 2.3.6.4.4.1 (abstracted model for localized corrosion), 2.3.6.4.2 (data and data uncertainty), and similar subsections, which discuss the nitrate-to-chloride ratio with respect to C-22 corrosion inhibition, fail to describe any experimental conditions that represent the waste emplacement drift environment, and fail to consider low pH evaporative conditions that do represent that environment; consequently, the corrosion models utilized for C-22 are inappropriate.

NEV Petition at 480. NEV-SAFETY-89 claims that the DOE license application is deficient because DOE has failed to "describe any experimental conditions that represent the waste emplacement drift environment," which includes low pH conditions. *Id*.

Staff Response

As discussed below, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention should not be admitted.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion…" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). In this contention, Nevada asserts that DOE's corrosion models are inadequate because there is "no experimental data obtained or discussed by DOE to show that C-22 is offered corrosion protection by high nitrate concentrations in very low pH brine environments, especially at elevated repository

temperatures." NEV Petition at 483. More specifically, Nevada challenges DOE's use of immersion experiments because they "do not apply to waste emplacement drift conditions." *Id.* Nevada argues that immersion experiments are inappropriate because the nitrate/chloride ratio remains constant; there is no dry out; liquid temperature is relatively low; and concentrations of corrosive species are low. *Id.* Nevada cites to its own experiments under "appropriate" conditions to support its conclusion that "[d]uring salt-cap crevice corrosion starting with simulated, unconcentrated unsaturated zone water that then undergoes evaporative concentration, massive pitting and channeling occurs in C-22 when the pH is low…" *Id.* at 484. While the contention concerning inappropriate DOE corrosion testing condition, i.e., exclusion of dripping conditions, is partially supported by the corrosion test results under evaporation/dripping conditions of porewater sponsored by the State of Nevada (LSN# NEV000005235), Nevada provides no basis for its position that such conditions, in fact, more closely approximate the waste emplacement drift conditions. In particular, Nevada does not offer any adequate basis to support the notion that the waste emplacement drift conditions will result in low pH conditions and the experimental data cited by Nevada does not establish that such conditions will exist. Thus, the underlying basis for the contention in not supported by the information provided by Nevada. Such assertions that the application is "deficient" without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc*, CLI-06-10, 63 NRC at 472. As such, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor

must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-89 "challenges the validity of DOE's corrosion studies in SAR subsections 2.3.5.3.2.2.1, 2.3.6.4.4.1, and 2.3.6.4.2, and "similar subsections." NEV Petition at 484. In effect, NEV-SAFETY-89 demands corrosion data based on conditions that replicate the repository.[50] Nevada asserts that the SAR "fail[s] to describe any experimental conditions that represent the waste emplacement drift environment, and fail[s] to consider low pH evaporative conditions that do represent the environment. This means that the corrosion models utilized for C-22 are inappropriate, and in consequence, that these subsections do not comply with 10 C.F.R. § 63.114(f)." *Id.* at 484-85. However, as discussed above, Nevada offers no adequate basis to support its assumption that the emplacement drift environment will, in fact, be a low pH environment. Such assertions, without supporting basis is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-89 is, therefore, inadmissible.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's

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[50] Several of Nevada's corrosion-related contentions raise this issue, including NEV-SAFETY-82, 85, 86, 87, 91, 93, 94, 97, 97, and 98.

dose standards" could only be performed by DOE, *see* NEV Petition at 485-86, does not satisfy the showing required to meet 10 C.F.R. § 2.309(f)(1)(vi). The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 89 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 485-86. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See*

C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 485-86. Therefore, with respect to this part of the NEV-SAFETY-89, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-90 – EFFECTS OF ROCK BOLT ON C-22 AND TI-7 CORROSION REACTIONS

> SAR Subsections 1.3.4.4, 2.3.6, and similar subsections, which describe the use, design, and corrosion of Super Swellex-type stainless steel rock bolts in the ground support system and the corrosion of C-22, fail to consider that debris from rock bolt corrosion will accumulate on the drip shield and on the C-22 canister and will be deleterious to both EBS-barrier components.

NEV Petition at 487. NEV-SAFETY-90 claims that DOE has failed to consider the deterioration of rock bolts in contributing to the corrosion of components of the engineered barrier system. *Id*.

Staff Response

As discussed below, however, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is not admissible. The Staff notes that this contention presents two separable issues: (1) rock bolts degrade producing dust that forms crevices that could exacerbate corrosion; and (2) rock bolt degradation releases deleterious elements that enhance corrosion. These are separable because each could theoretically exist absent the other and Nevada does not claim that there is a causal relationship between them. Though the Staff does not oppose this contention solely on the basis of it raising multiple issues, the Staff notes that this contention violates the directive of the Advisory PAPO Board that contentions be limited to a single issue. *U.S. Department of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 454-55 (2008). In addition, the Staff notes the similarity of NEV-SAFETY-90 to other dust-related contentions (NEV-SAFETY-68, -69, -72, -73, and -86), as well as NEV-SAFETY-100 regarding other components of the ground-support system. The merits of each contention are addressed

individually.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

With respect to the physical debris field, Nevada argues that deterioration of the rock bolts will produce debris that can form crevices on EBS components and that such crevices promote stress corrosion cracking (SCC) and localized corrosion. NEV Petition at 489-90. Nevada asserts that the debris from rock bolts may be more extensive than that from construction dust or dust from ventilation and that because DOE has not considered the rock bolt debris, the application is deficient. *Id.* at 489. While crevices are acknowledged to promote corrosion, Nevada provides no support for the position that rock bolt dust and debris will be a more extensive problem than other types of dust debris. Nevada asserts that "[e]ven with limited degradation, one can expect to find in the emplacement drifts an accumulation of dust and coarser debris that have originated from rock bolts" and that some of this debris will accumulate on the drip shield and waste canister surfaces. *Id.* However, Nevada provides no data to indicate how extensive the rock-bolt deterioration will be or how quickly it will occur.[51]

Nevada also asserts that deleterious trace elements, specifically sulfur and lead, will be

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[51] Another Nevada contention, NEV-SAFETY-123, implies that the rock bolts could corrode excessively during the pre-closure period. As with NEV-SAFETY-90, Nevada provides no supporting data or other information to indicate how much corrosion can be expected or how quickly it will occur.

released into the in-drift environment as the result of deterioration of the rock bolts and that these two elements are particularly conducive to SCC. *Id.* at 490. Nevada hypothesizes that the rock bolts will contain lead and sulfur, but the contention does not provide any basis for this assumption, nor does Nevada indicate what concentrations of such trace elements would be required to have a deleterious effect on components of the EBS. Nevada claims to have performed experiments demonstrating that small amounts of lead can be deleterious to C-22, *id.,* yet these experiments are not referenced and no data is provided regarding how those experiments were conducted and what the results actually demonstrated.

In sum, Nevada does not provide adequate factual and/or expert support regarding its assertions that rock bolt dust or debris will be a significant factor in SCC and localized corrosion of Ti-7 and C-22 components of the EBS. Nor does Nevada provide a basis for its assertion that lead and sulfur released from the rock bolts will enhance SCC. Such assertions without any supporting basis are not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472. As such, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a " 'genuine dispute' " exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. He or she must 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.' " *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-

01, 55 NRC 1 (2002).

NEV-SAFETY-90 alleges that DOE has failed to consider the effects of rock bolt corrosion on the EBS. As noted above, Nevada does not adequately support its assertions that rock bolt dust/debris will contribute significantly to the formation of crevices, thus enhancing SCC. Nor does Nevada provide information to support the theory that rock bolt corrosion will release lead and sulfur that will enhance corrosion. Nevada merely alleges that DOE has failed to consider these hypothetical processes. Nevada does not offer any data to suggest that had DOE considered these processes that a significantly different result would have been achieved, such that a genuine dispute could be established. Such assertions, without supporting basis is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-90 should, therefore, be dismissed.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 491-92, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.*

(Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 90 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 491-92. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 491-92. Therefore, with respect to this part of the NEV-SAFETY-90, Nevada

fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 1.3.4.4., 2.3.6 and “similar” subsections. NEV Petition at 487, 491. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-91 - REPRESENTATIVENESS OF C-22 AND TI-7 CORROSION TESTING METHODS

> SAR Subsection 2.3.6.1.2 and similar subsections, which deal with corrosion test environments and in-drift chemical environments, fail to utilize testing methods and hydrogeochemical compositions that capture the conditions and chemistries to which C-22 and Ti-7 are expected to be exposed in the emplacement drifts of the proposed repository.

NEV Petition at 493. NEV-SAFETY-91 claims that DOE's corrosion testing methods for C-22 and Ti-7 are inadequate because DOE has "ignored key physical and chemical characteristics of the environment in the waste emplacement drifts." *Id.* at 494. Further, Nevada argues that DOE's "experimental strategy is not related to the dynamic properties of the waste emplacement drift environment." *Id.* at 495.

Staff Response

As discussed below, however, Nevada's contention fails to meet the criteria as required by 10 C.F.R. §§ 2.309(f)(1)(v) and (vi). Accordingly, the contention should be rejected. The Staff notes that this contention raises numerous separable and independent issues about discrete aspects of the corrosion testing program, listing twelve physical or chemical "aspects" that Nevada characterizes as "un-modeled and un-treated." *Id.* at 494-95. The Staff notes that many of these "aspects" are raised in other Nevada contentions and will be addressed specifically in response to those contentions.[52] Though the Staff does not oppose this contention solely on the basis of it raising multiple issues, the Staff notes that this contention violates the directive of the Advisory PAPO Board that contentions be limited to a single issue. *U.S. Department of Energy* (High Level Waste Repository), LBP-08-10, 67

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[52] The Staff believes that the issues raised in this contention are also raised in NEV-SAFETY-74, 75, 76, 80, 87, 89, 93, 94, 97, 100, 105, 106, 107, 108 and 109. The merits of those individual contentions will be addressed individually.

NRC 450, 454-55 (2008).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citation omitted). Furthermore, Boards are not expected "to sift through the parties' pleadings to uncover and resolve arguments not advanced by the litigants themselves." *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 & 2), CLI-02-16, 55 NRC 317, 337 (2002) (citing *Commonwealth Edison Co*. (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999)).

In this contention, Nevada alleges "DOE's corrosion program for Ti-7 and C-22 has ignored key physical and chemical characteristics of the environment in the waste emplacement drifts."[53] NEV Petition at 494. Nevada argues, "The experimental apparatus should, therefore, adequately model or mimic the repository environment." *Id.* at 495. In particular, Nevada states, "even in relation to the existing experiments, there is little evidence to show that bounding unsaturated zone water compositions have been captured within the DOE laboratory testing program or will be captured in the future, as there is no compelling

[53] Nevada alleges that twelve aspects of the corrosion program are "un-modeled and un-treated." *Id.* at 494-95. Nevada claims that "DOE recognizes that its existing work is inappropriate and/or inadequate as it has proposed a long-term corrosion testing program, (*see* "Long-Term Corrosion Testing Plan (Supersedes SAND2007-7027 Dated 10/2007)" (08/01/2008), LSN# DEN001600862, which considers many of the [twelve cited deficiencies] that are totally absent from the discussion in SAR Subsection 2.3.6." *Id.* at 496. However, it is not clear how this document supports Nevada's position that certain aspects of the corrosion program are "un-modeled and un-treated."

evidence to show that pore-water is similar to fracture flow water." *Id.* at 496. Nevada does not provide any supporting information as to why experiments with fracture low water as opposed to pore-water are more appropriate.[54] Nevada also challenges DOE's nitrate/chloride ratio used in testing because it "does not exert the control DOE claims under the conditions of low pH that commonly occur during unsaturated zone dripping and evaporation." *Id.* However, Nevada has not provided any support in the contention for the premise that the conditions in the repository will be low pH, in terms of the cause of low pH, how low the pH values are expected to be, or what spatial or temporal scales are expected. Nevada simply concludes, "[b]y not addressing the wide range of expected environmental conditions, the DOE model for corrosion behavior is unsupported and unjustified, and can not be used to underpin arguments relating to drip shield and waste package lifetime." *Id.* This statement is not supported by the information provided by Nevada. While paragraph 5 of NEV-SAFETY-91 catalogs numerous alleged deficiencies in the DOE corrosion program, it does not provide any detailed information regarding the extent of those deficiencies and does not provide any data regarding their potential impact on drip shield and waste package lifetime. Nor does Nevada provide any data or other supporting information to indicate that testing under alternative conditions would yield significantly different results. Finally, the contention does not provide any supporting basis for the underlying premise that the conditions Nevada claims are more appropriate for testing do, in fact, "mimic" repository conditions. In sum, Nevada concludes that DOE's corrosion testing program does not adequately model repository conditions, but Nevada has not provided any support for its assertions that the conditions it proposes are more appropriate. Such assertions that the

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[54] The Staff believes that Nevada is relying on corrosion experiments it performed; however the contention does not refer to those experiments and no other supporting basis for Nevada's conclusion is provided.

application is “inadequate” without any supporting basis are not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472 (2006). Furthermore, even if some of the discrete issues raised in NEV-SAFETY-91 are raised in more detail in other contentions, the Board is not required to “sift” through the petition to resolve the issues raised. *See Diablo Canyon,* CLI-02-16, 55 NRC at 337. As such, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. “[A] contention must show that a ‘genuine dispute’ exists with the applicant on a material issue of law or fact. The intervenor must do more than submit ‘bald or conclusory allegation[s]’ of a dispute with the applicant. He or she must ‘read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.’ ” *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted).

NEV-SAFETY-91 challenges the “testing methods and hydrogeochemical composition” reported in SAR subsection 2.3.6.1.2 and similar subsections, because the DOE tests fail to capture the conditions expected in the emplacement drifts. NEV Petition at 497. As discussed above, Nevada has not established that the testing conditions it proposes do, in fact, more closely approximate repository conditions. Nor does Nevada offer any data to suggest that testing under the conditions it proposes would yield a significantly different result. Nevada merely asserts that DOE has failed to address a “wide range of expected environmental conditions,” and that consequently, the DOE model “cannot be used to

underpin arguments relating to drip shield and waste package lifetime." *Id.* at 496. Such assertions, without supporting bases are not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). Without more specific information, it is not possible to establish that a genuine dispute exists regarding the representativeness of DOE's corrosion testing methods. *See Millstone*, CLI-01-24, 54 NRC at 358. NEV-SAFETY-91 is, therefore, inadmissible.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-92 - IMPACTS OF FLUORIDE DUE TO BREACH OF HLW CONTAINERS

> SAR Subsection 2.3.5 and similar subsections, which deal with the in-drift physical and chemical environment, fail to take account of releases of chemicals by early degraded EBS components in overall calculations of radionuclide containment.

NEV Petition at 498. NEV-SAFETY-92 asserts that DOE does not take into account that fluoride released from "early degraded" EBS components can result in increased fluoride ion concentrations in the emplacement drifts, potentially increasing corrosion of the drip shield and waste containers. *Id*.

Staff Response

The NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion…" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Nevada asserts, that DOE has failed to account for the "effects of early failure EBS components in the calculation of overall corrosion…" NEV Petition at 499. Nevada goes on to speculate that "[e]arly failure of one or more HLW waste glass canisters can affect, for example, the fluoride ion concentration in aqueous and vapor phases within the emplacement drift." *Id.* at 499-500. However, Nevada does not describe how the magnitude, timing, and mechanism of fluoride release would lead to increased corrosion, particularly given that the contention is specific to "early failure EBS components," of which early failure high-level waste glass-containing waste packages are a

small percentage subset of early failure EBS components (SAR §§2.2.2.3.2; 2.3.6.6). The contention does not provide any information regarding the sequence of events that might lead to the release of fluoride (*i.e.,* the failure of a HLW glass waste package containing fluoride; the failure of the drip shield above or in close proximity to that waste package; and the introduction of water to transport the fluoride), or how likely such a scenario is. No data or other supporting information provided by Nevada indicates that this small portion of early failure waste packages will result in a release of fluoride, let alone enough fluoride mass to affect the overall corrosion of EBS components of multiple waste packages. Nevada goes on to state, "The fluoride issue is only one of many geochemical issues where the failure of one EBS component needs to be coupled to the geochemical behavior of all or most other EBS components in the in-drift environment." *Id.* at 500. Nevada does not explain what the other geochemical issues are, or provide any supporting information as to the magnitude of these issues. Nevada simply asserts that DOE has not properly considered fluoride release and other "geochemical issues," which is not sufficient to support admission of the contention. *See USEC, Inc.,* CLI-06-10, 63 NRC at 472. As such, Nevada fails to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v) and the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

The contention fails to meet the criteria of 10 C.F.R. § 2.309(f)(1)(vi) because it does not provide sufficient information to establish that a genuine dispute of fact or law exists. In this contention, Nevada asserts that SAR subsection 2.3.5 is inadequate because it fails to "address coupled chemical processes in which one EBS failed component may affect the stability of another EBS component. In this regard, for example, the breach of one canister of HLW glass can increase fluoride ion concentrations in the in-drift environment." NEV Petition at 500. However, as discussed above, Nevada does not offer any substantive information regarding the potential for corrosion as the result of release of fluoride, or even that such a release will itself be of any significance. Nevada does not offer any data to suggest that if DOE had accounted for the release of fluoride from early degraded waste packages, or the other, unnamed, "geochemical issues," that a significantly different result, would have been achieved, such that a genuine dispute could be established. Such assertions without supporting basis are not sufficient to establish a genuine dispute of law. *See Millstone,* CLI-01-24, 54 NRC at 358. Because NEV-SAFETY-92 is premised on speculation and does not directly controvert the license application, it is therefore inadmissible.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 501, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show

that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 92 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 501. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this

one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 501. Therefore, with respect to this part of the NEV-SAFETY-92, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.5 and "similar" subsections. NEV Petition at 498, 500. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-93 - NATURAL LEAD REACTIONS ON C-22

> SAR Subsection 2.3.6 and similar subsections, which deal with waste package and drip shield corrosion, fail to account for deleterious effects of natural lead remobilized and/or newly mineralized as coronadite [$Pb(Mn^{4+}Mn^{2+})_8O_{16}$] and/or lead carbonates in unsaturated zone fracture system seepage onto C-22 surfaces.

NEV Petition at 502. NEV-SAFETY-93 argues that DOE's corrosion analysis fails to account for the possible deleterious effects of lead on C-22, either as coronadite and/or lead carbonates that might be present in the in-drift environment. NEV Petition at 502. This contention asserts that lead may enter the emplacement drifts in several ways due to the elevated repository temperatures. *Id.*

Staff Response

As discussed below, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), citing *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In this contention Nevada asserts that lead could enter the emplacement drifts (as coronadite or lead carbonate) and that lead is known to have a deleterious effect on C-22. NEV Petition at 504-

05. Nevada concedes that "most of the lead-loaded manganese oxides are located below the repository." *Id.* at 504. However, Nevada posits that two processes could occur: lead in the fracture systems above the repository trapped in soil carbonates could be introduced during the ventilation period; and lead in the manganese oxides below the repository could be remobilized during hydrothermal activity. *Id.* at 504-05. Nevada goes on to state that "[i]f coronadite were to enter or form in the emplacement drifts and were to be deposited on the surface of C-22 outer container barrier, there is reasonable evidence that the lead would react with the C-22 to cause corrosion." *Id.* at 504. Nevada also argues that lead (in low ppm concentrations) might also enter the drifts from lead-containing carbonate dust derived from ventilation, and has the potential to adversely affect C-22. *Id.* at 504-05.

Nevada does not provide any support for its many assertions in this contention. Nevada concedes that most of the lead-manganese oxides are below the repository. Nonetheless, Nevada argues that hydrothermal activity could remobilize the lead in the manganese oxides and adversely affect the repository environment. *Id.* at 505. Nevada does not address the fact that DOE has screened hydrothermal activity as being "low consequence" criteria. *See* FEP 1.2.06.00.0A, SAR Table 2.2-1. Nevada does not provide any discussion of the likelihood of such hydrothermal activity, nor does Nevada challenge the screening out of this FEP. Consequently, Nevada's argument that lead could be thus mobilized in the in-drift environment is purely speculative. With respect to Nevada's argument that lead could be introduced via ventilation of carbonate dust from fracture deposits in the soil zone, Nevada concludes "[a]s carbonate dust in the waste emplacement drift environment is derived from ventilation, these trace lead concentrations have the potential to cause deleterious reactions in C-22 if the dust is deposited on the C-22 surface." *Id.* at 504-05. Nevada does not provide any information as to what lead concentrations would be necessary to have a deleterious effect. Nor does Nevada explain how such "low ppm" concentrations of lead might lead to C-22 corrosion. In sum, the hypotheses in NEV-SAFETY-93 regarding the

effects of lead on C-22 are not supported with any explanation as to how these processes might occur or even how likely they are to occur. Nevada asserts that these processes should be considered by DOE, but provides no qualitative data to support the contention. Such assertions that the application is deficient without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472 (2006). As such, the contention should not be admitted.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact…The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant . . . . He or she must 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

NEV-SAFETY-93 asserts that SAR Subsections 2.3.6 "and similar subsections" are deficient because they "fail to account for the deleterious effects of natural lead remobilized and/or newly mineralized as coronadite [$Pb(Mn^{4+}Mn^{2+})_8O_{16}$] and/or other authigenic minerals, such as calcite containing trace lead concentrations." NEV Petition at 505. As noted above, Nevada does not provide any support or explanation for how these processes

might occur or that they are even likely to occur. Further, Nevada does not offer any data to suggest that if DOE had considered these processes that there would be a significantly different result in DOE's findings, such that a genuine dispute could be established. On these bases alone, Nevada fails to establish that a genuine dispute exists with respect to DOE's corrosion findings. *See Millstone*, CLI-01-24, 54 NRC at 358. However, as noted above, Nevada also ignores the fact that DOE has considered hydrothermal activity and excluded it as being "low consequence" criteria. *See* FEP 1.2.06.00.0A, SAR Table 2.2-1. Nevada does not provide any information that DOE's decision to exclude this FEP was inappropriate. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-93 is, therefore, inadmissible.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 506, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003), citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the

application).

NEV-SAFETY- 93 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention . . . ." NEV Petition at 506. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists . . . on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 506. Therefore, with respect to this part of the NEV-SAFETY- 93 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.6 and "similar" subsections. NEV Petition at 502, 505. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-94 - SIGNIFICANCE OF MINERAL CRUSTS IN C-22 CORROSION

> SAR Subsections 2.3.6.4, 2.6.3.5 and similar subsections, which deal with localized and SCC waste package corrosion, fail to give adequate consideration to the role of mineral precipitates in forming crevices and facilitating corrosion on C-22 surfaces.

NEV Petition at 507. NEV-SAFETY-94 claims that DOE's localized corrosion model for C-22 is flawed because the model abstraction is based upon immersion studies which do not represent actual conditions expected in Yucca Mountain. The contention further claims that components of the localized corrosion model abstraction such as repassivation potential model and localized corrosion penetration rate model are not justified. *Id.* at 507, 509.

Staff Response

As discussed below, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is not admissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion…" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). In this contention Nevada argues that chloride and nitrate brines will become trapped against the C-22 surface. NEV Petition at 509. Nevada acknowledges that DOE has considered the formation of such "authigenic evaporite deposits" in SAR subsection 2.3.6.4.3.1.3. *Id.* Nonetheless, Nevada alleges that DOE's treatment of this type of corrosion is not proper because DOE has not considered "the

conditions expected to prevail on waste package surfaces." *Id.* In particular, Nevada argues that DOE's failure to consider dry-out and rewetting conditions because DOE's data is based on immersion studies which are "inappropriate" and "ha[ve] the potential to underestimate" corrosion. *Id.* at 509-10. Nevada does not provide any support for the underlying premise of this contention, namely that dry-out/rewetting conditions are the likely conditions to be found in Yucca Mountain. Further, Nevada simply concludes, without any supporting data or other information, that DOE has underestimated the degree of penetration of C-22 due to localized corrosion based on the allegedly flawed methodology. The contention does not provide any qualitative data demonstrating that a significantly different result would be achieved under Nevada's proposed testing conditions, but rather asserts that DOE's testing methods are flawed. Such assertions that the application is "inadequate" without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472. As such, the contention is not admissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-94 alleges that SAR subsection 2.3.6 and "similar subsections," fail to

provide adequate consideration of the role of mineral precipitates in forming crevices and the accompanying corrosion on C-22 surfaces." NEV Petition at 510. While Nevada acknowledges that DOE has considered crevice formation, it argues that DOE uses "an inappropriate and unsupported conceptual model" for the localized corrosion process because it did not conduct experiments under dry-out/rewetting conditions. *Id.* As noted above, Nevada does no more than assert that dry-out and rewetting conditions are a more appropriate conceptual model. Nor does Nevada offer any data to suggest that testing under the conditions it proposes would yield a significantly different result, such that a genuine dispute could be established. Such assertions, without supporting basis is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-94 should, therefore, not be admitted.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 511, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 94 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 511. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 511. Therefore, with respect to this part of the NEV-SAFETY-94, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.6.4, 2.6.3.5 and "similar" subsections. NEV Petition at 507, 510. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-96 - SALT PRODUCTION AND C-22 CORROSION DUE TO HEAT-PIPE CONDITIONS

> SAR Subsections 2.3.2.2.2.6, and 2.3.6 and similar subsections, which describe unsaturated zone heat-pipe thermal processes and corrosion, give a description of those processes that is inadequate for safety assessment, because it fails to recognize that convection cells can produce extensive deposits of evaporites that can result in a "pressure cooker" effect, can affect water delivery to the drip shield and waste package, and can provide large quantities of deliquescent salts to the in-drift environment affecting the lifetime calculations for C-22 and Ti-7.

NEV Petition at 518. NEV-SAFETY-96 alleges that DOE's corrosion analysis is inadequate because it fails to consider the effect of convection cells and the subsequent formation of salts. *Id*. Nevada argues that "heat pipe conditions" can lead to "unsaturated zone flow conditions that far exceed the percolation fluxes and volumes into the emplacement drifts that have been calculated by DOE." *Id.* at 520.

Staff Response

As discussed below, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is not admissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion…" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). NEV-SAFETY-96 asserts that heat-pipe conditions "create hydrogeochemical conditions that accelerate the corrosion of C-22

and Ti-7." NEV Petition at 520. In effect, Nevada postulates that three processes could be affected by heat pipes: evaporite production, seepage into drift, and redistribution of flow in the rock. *Id.* Nevada states that "[t]he eventual failure of salt plugs as a consequence of overburden weight (head and/or internal pressure) can create unsaturated zone flow conditions that far exceed the percolation fluxes and volumes into the emplacement drifts…." *Id.* This statement describes a well-known process and as such the Staff does not oppose the contention based on that statement. However, Nevada's assertions with respect to changes in chemistry are not well supported. Nevada does not provide any data to support the conclusion that DOE has underestimated the corrosion effects. Specifically, Nevada alleges that the unsaturated zone water affected by heat-pipe conditions "has the potential to be very different from the water chemistry used by DOE to test the corrosion of C-22." *Id.* However, Nevada does not provide any supporting information as to how heat pipes affect this process, what is different about the water chemistry, or what impact this might have on corrosion. NEV-SAFETY-96 concedes that DOE has studied the heat-pipe process, (*id.*), but the contention does not specify how the DOE SAR is deficient with respect to its treatment of heat-pipe conditions. Nevada simply concludes that "the [LA] fails to provide an adequate assessment of the response of C-22 and Ti-7 to heat pipe conditions." *Id.* Such assertions that the application is "inadequate" without any supporting basis are not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472. As such, the contention is not admissible with respect to alleged changes in water chemistry

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor

must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-96 alleges that SAR subsections 2.3.6, 2.3.2.2.2.6 and similar subsections "fail to recognize that convection cells formed during DOE anticipated heat-pipe conditions can produce extensive deposits of evaporates that can affect water delivery to the drip shield and waste packages and can provide large quantities of deliquescent salts to the in-drift environment affecting the lifetime calculations of C-22 and Ti-7." NEV Petition at 520-21. However, Nevada does not provide enough information to demonstrate that a genuine dispute exists. Nevada concedes that DOE has considered heat-pipes." *Id.* However, as noted above, Nevada does no more than conclude that the DOE analysis is inadequate. Nevada does not offer any data to suggest that had DOE considered salt production resulting from heat pipes as suggested by Nevada that a significantly different result would have been achieved, such that a genuine dispute could be established. Such assertions, without supporting basis are not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-96 is, therefore, inadmissible.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 521-22, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for

the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 96 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 521-22. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.*

(Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 521-22. Therefore, with respect to this part of the NEV-SAFETY-96, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.2.2.2.6 and 2.3.6 and "similar" subsections. NEV Petition at 518, 520. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this

contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-97 - CREVICE CORROSION ON C-22 DUE TO DRIP SHILED CORROSION DEBRIS

> SAR Subsection 2.3.6 and similar subsections, which describe the DOE model for drip shield corrosion, fail to recognize that the degradation of the drip shield will cause a debris field that collects on the surface of the waste canisters and that this debris field can accelerate C-22 corrosion resulting in degraded performance of the EBS.

NEV Petition at 523. NEV-SAFETY-97 claims that because DOE did not use experimental conditions that "mimic in-drift conditions" and the drip shield performance has been overestimated and the effects of titanium debris on the C-22 waste canisters has been underestimated. *Id.*.

Staff Response

As discussed below, Nevada's contention does not satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(v) and (vi). Accordingly, the contention should be rejected. The Staff notes that this contention raises at least three discrete, independent, and separable issues: (1) presence of debris field on C22 waste canisters and its effects on C22 corrosion; (2) dripping/dry out vs. immersion test conditions for the drip shield; and (3) the use of allegedly non-representative J-13 saturated zone water or BSW-12 water in drip shield corrosion tests. The issue of immersion test conditions has also been addressed by the Staff in response to similar arguments by Nevada in contentions NEV-SAFETY-87 and 106. Though the Staff does not oppose this contention solely on the basis of raising multiple issues, the Staff notes that this contention violates the directive of the Advisory PAPO Board that contentions be limited to a single issue. *U.S. Dep't. of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 454-55 (2008).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the

application is ‘deficient,’ ‘inadequate,’ or ‘wrong’) without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-97 asserts that degradation of the drip shield will cause a debris field on the waste canisters and that this debris will accelerate C-22 corrosion. NEV Petition at 523. One of the underlying bases of this contention is that DOE’s drip shield corrosion experiments do not account for cyclic dripping and dry-out conditions because they are based on immersion experiments. *Id.* at 525. This issue was also raised in NEV-SAFETY-87. As with NEV-SAFETY-87, Nevada does not provide a basis for its assertion that dripping/dry-out conditions are likely to be the actual in-drift conditions.

In addition, NEV-SAFETY-97 asserts that the water used in the allegedly invalid immersion experiments, J-13 saturated zone water or BSW-12, basic saturated water, are not appropriate. *Id.* Nevada asserts that “[s]aturated or under-saturated salt solutions in baths do not at all approximate [cyclic drip/dry-out conditions], as they do not promote the development of concentrated brines and are not accurate scale models of the in-drift environment.” *Id.* Nevada does not provide any basis for this conclusion, which is itself based on the unsupported premise that cyclic dripping/dry-out conditions will be prevalent in the in-drift environment.

Finally, Nevada concludes that “degradation of the drip shield will be more rapid and extensive than assumed by DOE” and this will lead to a debris field on the C-22 waste canisters and subsequent corrosion. *Id.* at 526. As with the other issues raised by Nevada in this contention, Nevada does not provide any support for the underlying presumption that drip shield degradation will be more “rapid and extensive” than assumed by DOE testing. Nevada’s conclusion is based on the unsupported assertion that DOE’s testing methods are inappropriate because they do not “mimic” in-drift conditions. Nevada does not provide any

discussion of alternative experimental methods, or if such methods would, in fact, lead to different results. Consequently, NEV-SAFETY-97 is based on mere assertions that DOE's data is inaccurate. Such assertions that the applicant is "wrong" without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC*, CLI-06-10, 63 NRC at 472 (2006). As such, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-97 alleges that SAR Subsection 2.3.6 and similar subsections "fail to recognize that the degradation of the drip shield will cause a debris field that collects on the surface of the waste canisters and the presence of the debris field can accelerate C-22 corrosion." NEV Petition at 526. Nevada does not address actual C-22 corrosion at all or how the debris field will lead to C-22 corrosion in this contention. On that basis alone, the contention fails to raise a material dispute because the contention offers no discussion whatsoever regarding C-22 corrosion, other than concluding that degradation of the drip shield will produce debris that will be deleterious to C-22 corrosion performance. *Id.* In addition, as discussed above, the underlying premises of NEV-SAFETY-97 are entirely

unsupported. Nevada asserts, without providing any supporting information, that cyclic dripping/dry-out conditions will be prevalent in the in-drift environment and that consequently, the DOE testing methods do not accurately reflect in the in-drift environment. Nor does Nevada offer any data to suggest that testing under the conditions it proposes would yield a significantly different result, such that a genuine dispute could be established. Such assertions, without supporting basis is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi) because Nevada has not established that a genuine dispute exists with respect to DOE's drip shield corrosion model. *See Millstone Nuclear Power Station*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-97 should, therefore, be dismissed.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 527, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the

application).

NEV-SAFETY- 97 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 527. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 527. Therefore, with respect to this part of the NEV-SAFETY-97, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.6 and

"similar" subsections. NEV Petition at 523, 526. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-98 - RATE OF DRIP SHIELD INTERCONNECTION CORROSION

> SAR Subsections 1.3.4, Figures 1.3.4-14 and 1.3.4-15, and similar subsections which describe the drip shield, fail to recognize that the connector plate and plate sections, due to the interlocking design, form crevices that have the potential to provide a locus for SCC driven by the concentrations of chloride and fluoride in unsaturated zone waters.

NEV Petition at 528. NEV-SAFETY-98 claims that the crevices formed by the intersections of the drip shield plates are potential sources of stress corrosion cracking (SCC) and that DOE has improperly excluded SCC FEP from consideration. *Id*.

Staff Response

As discussed below, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An "expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion…" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). NEV-SAFETY-98 takes issue with SAR subsections 1.3.4, Figures 1.3.4-14 and 1.3.4-15 and similar subsections. However, this SAR subsection relates to the drip shield design, not performance. Nonetheless, if this problem is overlooked, Nevada asserts that the crevices formed by the intersection between drip shield plates "are spatially situated such that they are likely to intercept drips and have the capability to provide environments in which SCC would occur." NEV Petition at 529.

Nevada states that DOE excluded this FEP "on the basis of immersion experiments, but has not experimented with crevices in drip-dryout conditions using fracture flow unsaturated zone water." *Id.* at 529-30. Nevada argues that DOE's experimental methods fail to consider this potential corrosion and "means that the rate and degree of degradation of the EBS is underestimated…" *Id.* at 530. However, Nevada fails to provide any supporting evidence regarding the process by which this corrosion will occur or even if such corrosion will be of any consequence. Nevada's contention assumes this corrosion is potentially significant, but Nevada does not provide any qualitative data to support that assumption, or provide any support for the underlying presumption that dri-dryout conditions are more appropriate experimental conditions. No support is offered beyond assertion that these joints would be oriented in a manner that would intercepts drips or would accelerate or exacerbate SCC. Nor does Nevada offer any support that this FEP should have been screened in as there is no discussion by Nevada that probability or consequence of this FEP occurring is within the appropriate threshold to be considered. *See* 10 C.F.R. § 63.342. Such assertions that the applicant is "wrong" without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC,* CLI-06-10, 63 NRC at 472 . As such, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the

petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-98 asserts that SAR subsection 1.3.4, Figures 1.3.4-14 and 1.3.4-15 and "similar subsections that describe the drip shield fail to recognize that the interlocking section design forms crevices that have the potential to provide locations for SCC driven by chloride and fluoride present in percolating unsaturated zone water." NEV Petition at 530. SAR Subsection 1.3.4 discusses design, not performance, therefore no discussion of SCC or FEP screening would be expected and the contention fails to raise a material issue. The LA considers SCC of the drip shield in FEP 2.1.03.02.0B, SAR Section 2.2, Table 2.2-5 at 2.2-232. However, even if this defect is resolved in Nevada's favor, the contention itself does not raise a material issue. As discussed above, Nevada does not provide any support for its position that DOE has improperly excluded the SCC FEP. Nevada offers no discussion regarding SCC probability or consequence other than to assert that DOE has "underestimated" the degree of EBS degradation. *Id.* Nevada does not offer any data to suggest that testing under the conditions it proposes would yield a significantly different result, such that a genuine dispute could be established. Such assertions, without a supporting basis is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). Nevada has not established that a genuine dispute exists with respect to DOE's consideration of SCC in the drip shield. *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-98 should, therefore, be dismissed.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 530-32, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is

referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 98 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 530-31. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a

good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 530-31. Therefore, with respect to this part of the NEV-SAFETY-98, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 1.3.4, Figures 1.3.4-14 and 1.3.4-15 and "similar" subsections. NEV Petition at 528, 530. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334.

Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-99 - BORIC ACID PRODUCTION FROM HLW DISSOLUTION

> SAR Subsection 2.3.7 (FEP 2.1.09.02.0A) and similar subsections, which describe chemical interactions with corrosion products, fail to recognize the potential corrosive role of boric acid formed from the dissolution of HLW glass waste.

NEV Petition at 532. NEV-SAFETY-99 asserts that DOE has failed to consider the effects of boric acid on corrosion in the engineered barrier system (EBS). Nevada claims that dissolved boron will be released into the in-drift environment during the dissolution of high level waste glass waste form and that DOE has failed to consider the potential effects of the subsequent formation of boric acid. *Id.* at 533-34.

Staff Response

The NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309(f)(1)(v) and 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of this ability to make the necessary, reflective assessment of the opinion . . . ." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (internal citation omitted). Here, although Nevada provides two experts who attest to the information in paragraph 5, these experts fail to explain the basis for their opinions. *See* NEV Petition, Attachment 17, Affidavit of Maurice E. Morgenstein ¶ 2; Attachment 18, Affidavit of Robert A. Cottis ¶ 2. Nevada's experts simply assert, without explanation, that DOE has failed to study or consider effects of dissolved boron on the EBS, which it claims "might enhance the dissolution rates of C-22 and Ti-7." NEV Petition at 534. Specifically, Nevada contends that dissolved boron will be

released into the in-drift environment during the dissolution of the high level waste (HLW) glass waste form and that "[t]he quantity of boron that can be released from one breached canister may be quite sufficient to affect the corrosion of other canisters encapsulated in the same drift—thus a domino effect can incur [sic]." *Id.* at 533-34. However, Nevada does not describe how the magnitude, timing, and mechanism of boron release would lead to formation of boric acid. More significantly, Nevada does not explain how enough water would be present to form a mobile boric acidic solution that could contact and cause corrosion of other waste packages. This contention does not offer any support for the premise that boron will be a factor in corrosion in the in-drift environment, but hypothesizes that boron "may" be released to other waste packages and that such a release "might enhance" corrosion. This contention is supported by three affidavits however, no specific information regarding boric acid corrosion of C-22 and Ti-7 is offered by the expert affidavits or any other source.[55] *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Morgenstein Affidavit; Cottis Affidavit, Furthermore, Nevada offers no explanation of how an acidic solution would migrate laterally onto adjacent waste packages, ignoring the effects of gravity and downward flow from the breached waste package. Rather, Nevada's experts simply make speculative and conclusory statements regarding possible boric acid corrosion. *See USEC,* CLI-06-10, 63 NRC at 472. As such, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) and the contention is therefore inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must

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[55] A reference to the role of boron in the Davis Besse case is made, but no tangible correlation is made between the conditions present at Davis Besse as compared to those expected in the in-drift environment, particularly given that the corrosion present at Davis Besse affected carbon steel, not Alloy 22 or Ti. *See* NEV Petition at 533.

demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact . . . The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant . . . He or she must 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted).

This contention fails to meet the criteria of 10 C.F.R. § 2.309(f)(1)(vi) because it does not provide sufficient information to establish that a genuine dispute of fact or law exists. In this contention, Nevada asserts that SAR subsection 2.3.7 is inadequate because it "fails to recognize the potential of boric acid formed from the dissolution of HLW glass waste." NEV Petition at 534. However, as discussed above, Nevada fails to provide any scientific justification for its assertion that this subsection is inadequate. Nevada does not offer any substantive information regarding the potential for corrosion as the result of release of boron, nor does Nevada directly challenge a basis of the DOE license application. Nevada merely asserts, without supporting scientific basis, that SAR Subsection 2.3.7 is inadequate because boric acid corrosion is not considered. Such an assertion is not sufficient to establish a genuine dispute of law. *See Millstone,* CLI-01-24, 54 NRC at 358. Accordingly, because NEV-SAFETY-99 is premised on speculation and does not directly controvert the license application, it is therefore inadmissible.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 534-35, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for

the statements. *See* Thorne Affidavit. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-99 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 535. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *Duke Energy Corp.*

(Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. *See* NEV Petition at 535. Therefore, with respect to this part of the NEV-SAFETY-99, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.7 and “similar” subsections. NEV Petition at 532. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this

contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-100 - GROUND SUPPORT COMPONENTS AND IN-DRIFT MODELING

> SAR Subsection 1.3.4.4 describes the ground support system as including Bernold-type sheets that have the potential to degrade during heat-up, the peak thermal period, and cool down generating oxyhydroxide debris fields on drip shields (comprising dust, scale and granular debris) and waste canisters (comprising oxyhydroxide dust and scale). These debris fields will result in the formation of mineralized crevices that can trap acid vapors formed by deliquescent salts derived from dust and percolation, thereby increasing corrosion rates and adversely affecting the containment properties of the system. However, SAR Subsection 2.3.5 and similar subsections, which describe the in-drift chemical environment models, fail to take account of the ground support components in defining the chemical composition of the in-drift environment.

NEV Petition at 536. NEV-SAFETY-100 claims degradation of the ground support system components, specifically perforated stainless steel sheets, have not been considered by DOE in its drip shield and waste canister corrosion models. NEV Petition at 536, 538. Nevada alleges that the ground support system can degrade under repository conditions and create debris fields on the drip shields and waste canisters, resulting in the formation of crevices conducive to corrosion. *Id.* at 538.

Staff Response

As discussed below, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is not admissible. The Staff notes that this contention raises at least two separable and independent issues, namely the effects of physical debris and the effects of trace elements in the ground support exacerbating corrosion. The Staff notes that these issues are similar to those raised in other Nevada

contentions and are addressed specifically in response to those contentions.[56] Though the Staff does not oppose this contention solely on the basis of it raising multiple issues, the Staff notes that this contention violates the directive of the Advisory PAPO Board that contentions be limited to a single issue. *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 454-55 (2008).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention must be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). NEV-SAFETY-100 asserts that DOE's corrosion analysis and description of the in-drift chemical environment is inadequate because it does not account for potential degradation of the ground support system. NEV Petition at 538. Nevada states, "This ground support system has the potential to degrade during heat-up, the peak thermal period, and cool down generating oxyhydroxide debris fields on drip shields…and waste canisters…resulting in the formation of mineralized crevices that can trap acid vapors formed by deliquescent salts derived from dust and percolation." *Id.* Nevada argues that two processes might occur with respect to ground support degradation which could lead to corrosion of the drip shield and waste canisters. The first involves "transition metal sorption of ground support oxyhydroxide degradation products on C-22 (e.g., lead and cadmium)." *Id.* The second process is the deposition of a

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[56] The issues raised in this contention are similar to those raised in NEV-SAFETY-90, 97 and 93. The merits of those contentions will be addressed individually.

debris field on the drip shield and/or waste canister. *Id.* Nevada states, that in either case the debris field creates a cap that can promote the corrosion of the drip shield and/or waste canister. *Id.* at 538-39. Particularly with respect to "transition metal sorption," Nevada fails to provide an explanation as to how this process would occur or what chemical composition of the ground support system is necessary for such a process to have a deleterious effect on drip shield materials and C-22. Nevada provides a list of potential materials comprising the ground support system and concludes, "The mobilization of some of these elements to the surfaces of Ti-7 and C-22 may pose a serious problem when those surfaces exhibit crevices." *Id.* at 539. However, Nevada does not explain what concentrations of the various elements that might be in the ground support system are necessary to "pose a serious problem," nor does Nevada how these elements exacerbate corrosion processes that would have to occur. In addition, "a deleterious effect" on C-22 necessarily presumes that the drip shield is "compromised." *Id.* at 538. However, Nevada makes this presumption without providing supporting information that deterioration of the ground support system will result in the drip shield being "compromised." In sum, Nevada claims that degradation of the ground support system could cause corresponding corrosion of components of the engineered barrier system and that DOE's analyses of the in-drift chemical environment are deficient because they do not account for such degradation processes. However, Nevada does not provide adequate information regarding how such processes would occur, nor does Nevada provide any data or other explanation that indicates that had DOE considered this issue that its corrosion results would have been significantly different. Nevada also presumes failure of the drip shield with corresponding corrosion of the C-22 waste canisters, but does not provide a clear underlying basis for this presumption. Such assertions that the application is "inadequate" without any supporting basis is not enough to meet the requirements of 10 § C.F.R. 2.309(f)(1)(v). *See USEC,* CLI-06-10, 63 NRC at 472. As such, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-100 argues that SAR Subsection 2.3.5 and similar subsections are inadequate because they "fail to include ground support components in the chemical composition of the in-drift environment and therefore these components have been omitted from consideration in all of the corrosion experiments undertaken by DOE" and that trace elements from the ground support system might be deleterious to C-22. NEV Petition at 539. As discussed above, Nevada does not provide an adequate foundation to support this assertion. Nor does Nevada offer any data to suggest that had DOE considered this issue a significantly different result would have been achieved, such that a genuine dispute could be established. Such assertions, without supporting basis is not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-100 should, therefore, not be admitted.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a

determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 540, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 100 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 540. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and

boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 540. Therefore, with respect to this part of the NEV-SAFETY-100, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 1.3.4.4 and 2.3.5 and "similar" subsections. NEV Petition at 536,539. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has

also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-105 - DRIP SHIELD CORROSION ENVIRONMENT

> SAR Subsection 2.3.6.8 and similar subsections, fail to provide a realistic model of the corrosion behavior of the drip shield because they are based on inappropriate test conditions.

NEV Petition at 561. Nevada asserts that DOE's model of drip shield corrosion is not realistic because it is based on bulk liquid environments instead of "significantly more aggressive" conditions involving the dripping and evaporation of water under elevated temperatures. *See* NEV Petition at 561.

Staff Response

As discussed further below, NEV-SAFETY-105 does not comply with 10 C.F.R. § 2.309(f)(1). Therefore, this contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion . . . ." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (internal citation omitted). The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted).

Nevada alleges that DOE's reliance on bulk liquid environments under isothermal conditions is not as severe a corrosive condition as would be "cooler liquids dripping onto a relatively hot metal surface and evaporating," and cites a document evaluating stress corrosion cracking of stainless steel or Alloy 22 by drop evaporation tests, *see* NEV Petition at 562-63 (citing ISO Standard ISO 15324:2008,*Corrosion of metals and alloys - Evaluation of stress corrosion cracking by the drop evaporation Test*, ISBN 978 0 580 60538 3; *Final*

Results for C22 Corrosion Test at 1-67 (Apr. 16, 2008) (LSN No. NEV000005219); & *Effects of Concentrated Hydrochloride and Nitric Acid and NaF on Corrosion of C-22 Alloy at 25 and 90°C; A Model for Rapid Penetration of C-22* at 1-114 (Dec. 30, 1995) (LSN No. NEV000004183). Nevada does not proffer information that indicates the alleged "rapid corrosion" of Alloy 22 under drop evaporation conditions would significantly degrade drip shield performance. Instead, Nevada asserts that model deficiencies potentially "underestimate the degree to which packages will be penetrated by corrosion" and "overestimate the time required for such penetration," thus significantly underestimating the dose. NEV Petition at 563. Nevada does not offer information that provides a potential increase in the magnitude of release and therefore dose. To the extent that Nevada relies on tests of Alloy 22, which is the waste package outer container material, and not the titanium alloys proposed to construct the drip shields, see SAR Section 2.3.6.8 at 2.3.6-70, the contention is not supported.

The contention is not supported by expert opinion. The Affidavits of Drs. Maurice Morgenstein and Robert Cottis contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). *See* NEV Petition, Attachment 17, Affidavit of Maurice E. Morgenstein at ¶ 2; Attachment 18, Affidavit of Robert A. Cottis at ¶ 2. Because each affidavit does not contain a reasoned basis for Nevada's position, it is difficult to assess the basis for each opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16 (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada's conclusory assertions regarding drip shield performance and corrosion are not supported by these affidavits.

In short, Nevada's contention is not fully supported by alleged facts or expert opinion as

required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3, CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34 (1999) (quoting 54 Fed. Reg. at 33,172). Nevada's challenge to DOE's performance assessment with respect to drip shield performance and corrosion raises a dispute with the Applicant, but fails to raise a material issue of law or fact.

Nevada speculates about dripping conditions and processes that could increase drip shield corrosion, relying on testing done on Alloy 22. *See* NEV Petition at 563. Nevada, however, does not proffer information that addresses the impact of the alleged corrosion process on titanium drip shields to be used in the repository. *See* SAR at 2.3.6-70. Nevada also does not address DOE's basis for excluding stress corrosion cracking of drip shields from the TSPA. *See* SAR at 2.3.6-86 ("The presence of cracks will not affect the performance of the drip shield in preventing or substantially reducing the amount of water that could directly contact the waste packages . . . ."). In addition, Nevada's fails to proffer

information or expert opinion that specifically addresses how the alleged degradation in drip shield would make a difference in the outcome of the proceeding, particularly a reasoned basis that shows the effect on doses to the RMEI, fails to raise a genuine dispute with the Applicant. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 564-65, does not satisfy the showing required to meet the requirements of 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 105 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 564-65. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need “many thousands of possible changes.” Section 2.309(f)(1)(vi) requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 564-65. Therefore, with respect to this part of NEV-SAFETY-105, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6 and “similar” subsections. NEV Petition at 561, 564. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and

applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give [ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention should not be admitted because it fails to satisfy the criteria in 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-106 - WASTE CONTAINER CORROSION ENVIRONMENT

> SAR Subsection 2.3.6.3 and similar subsections fail to provide a realistic model of the corrosion behavior of the canister because they are based on inappropriate test conditions.

NEV Petition at 566. Nevada asserts that DOE's model of waste package corrosion and stress corrosion cracking is not based on appropriate test conditions because it is based on bulk liquid environments instead of "more aggressive" conditions involving the dripping and evaporation of water under elevated temperatures. NEV Petition at 566.

Staff Response

For the reasons set forth below, this contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v) (v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted).

Nevada, citing the SAR and other documents, challenges whether DOE model of waste package corrosion is "realistic," and alleges that DOE has failed to consider the effect of dry-wet drip cycling. *See* NEV Petition at 567-69. Nevada alleges that DOE's reliance on bulk liquid environments in isothermal conditions is not as severe a corrosive condition as "cooler liquids dripping onto a relatively hot metal surface and evaporating," and cites a document addressing corrosion by dripping salt solutions, and conclusions of Nevada-sponsored, cyclic unsaturated zone water dripping and dryout experiments. See NEV Petition at 567-68 (citing

"C-22 Corrosion in Dripped Pore Water, Final Report for Phase II A & B" (2008) (LSN# NEV000005216) at 1-17 and "Experiments Devised to Studying Temperature and Geometry Effects of Corrosion of C-22 Alloy, Final Report for Phase II C & D" (2008) (LSN# NEV000005235) at 1-17). Nevada asserts, without any underlying support or further explanation that, "[c]yclic unsaturated zone water dripping and dryout experiments are reasonable approximations of conditions in the waste emplacement drift environment during thermal peak and cool down periods." NEV Petition at 568. Because Nevada offers no support for the assertion that dripping/dry-out conditions are the likely in-drift conditions, and that Nevada better approximates the drift environment, Nevada merely claims DOE's model is wrong. An assertion that the applicant is "wrong" without any supporting basis is not enough to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v). *See USEC,.* CLI-06-10, 63 NRC at 472.

In addition, Nevada does not allege when drip shield degradation would cause waste packages damage and its magnitude and effect on dose, or address DOE model assumptions regarding the salt separation process see SAR at 2.3.5.5.1 or DOE's Early Failure Modeling Case that assumes any Alloy 22 waste package underneath an early failed drip shield would be breached. Thus, Nevada does not proffer information that indicates the alleged corrosion processes would significantly degrade waste package performance.

The contention is not supported by expert opinion. The Affidavits of Drs. Maurice Morgenstein and Robert Cottis contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 17, Affidavit of Maurice E. Morgenstein; Attachment 18, Affidavit of Robert A. Cottis. Because each affidavit does not contain a reasoned basis for Nevada's position, it is difficult to assess each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations,*

Inc. (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada's conclusory assertions regarding waste package performance and corrosion are not supported by these affidavits.

In short, Nevada's contention is not fully supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(v) (vi): Genuine Dispute Regarding the Application

Nevada's challenge to DOE's performance assessment with respect to waste package performance and corrosion raises a dispute with the Applicant, but fails to raise a material issue or law or fact.

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Although Nevada states that its experiments realistically represent conditions in the drifts, *see* NEV Petition at 658, it proffers no information to support its assertion. It also fails to address information in the SAR concerning DOE assumptions regarding salt separation processes and the early failure modeling case for Alloy 22 waste packages. *See, e.g.,* SAR at 2.3.5.5.1, 2.3.5-117, 6.4-4. Thus Nevada fails to raise a genuine dispute concerning how cyclic dripping and dryout could result in waste package degradation such that it would significantly increase the magnitude *and* time of radiological exposures to the RMEI, or radionuclide releases to the accessible environment. *See* 10 C.F.R.§ 63.114(f). Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 569-70, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 106 asserts that possibly thousands of changes would need to be made

to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 570. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 570. Therefore, with respect to this part of NEV-SAFETY-50, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.3 and "similar" subsections. NEV Petition at 566, 569. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it

wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309(f)(1)(iv) through (vi) and should be rejected.

NEV-SAFETY-107 - ELECTROCHEMICAL REDUCTION OF NITRATE

> SAR Subsection 2.3.6.4.3.1.1 and similar subsections, which assert that nitrate is an inhibitor of corrosion, fail to take account of the loss of nitrate by electrochemical reaction.

NEV Petition at 571. Nevada asserts that the model of localized corrosion in the DOE license application does not consider that more severe localized corrosion could occur due to the "electrochemical reduction of nitrate as a cathodic reaction during the passive corrosion process," which will lead to depletion of nitrate film deposits. NEV Petition at 571-573.

Staff Response

This contention should be rejected. Nevada has not offered support for its premise that differential patterns of nitrate replenishment would be of sufficient magnitude or scale so as to adversely affect repository performance. Therefore, this contention fails to meet 10C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See USEC*, *Inc.,* CLI-06-10, 63 NRC at 455 (citation omitted).

Nevada alleges the potential for consumption of nitrate, "an inhibitor of passive film breakdown," by electrochemical reaction and that thin liquid films resulting from seepage or salt deliquescence have less nitrate with long reaction times, and change the chloride to nitrate ratio, allowing for more aggressive solutions to persist in which localized corrosion of

C-22 could occur. NEV Petition at 572-73. Nevada, however, provides no facts, analysis or reference on the quantitative change in the ratio of nitrate to chloride due to nitrate reduction reaction or information that shows the water chemistry in the repository would support a nitrate reduction reaction. Thus, the contention fails to show that significant change in nitrate to chloride ratio would occur due to nitrate reduction reaction. Nevada makes a qualitative statement that, in the thin film it expects to develop on the waste package, nitrate concentrations would be affected more than chloride concentrations, thus altering the ratio. *See* NEV Petition at 573. However, Nevada does not support its premise that such a thin film would be extensive enough to affect a sufficient number of waste packages adversely, affecting repository performance.

The contention is not supported by expert opinion. The Affidavits of Drs. Maurice Morgenstein, and Robert Cottis contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 17, Affidavit of Maurice E. Morgenstein; Attachment 18, Affidavit of Robert A. Cottis. Because each affidavit does not contain a reasoned basis for Nevada's position, it is difficult to assess each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada's conclusory assertions regarding waste package performance and corrosion are not supported by these affidavits.

In short, Nevada's contention is not supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Nevada's challenge to DOE's performance assessment with respect to waste package

performance and corrosion raises a dispute with the Applicant, but fails to raise a material issue or law or fact.

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada speculates about conditions and processes that could increase localized corrosion, but does not provide supporting information or expert opinion that specifically addresses and how the alleged degradation in waste package performance would make a difference in the outcome in the proceeding. Nevada asserts that depletion of nitrate in thin film deposits will lead to more conducive conditions for localized corrosion of Alloy 22, but provides no facts, analysis or reference on the quantitative change in the ratio of nitrate to chloride due to nitrate reduction reaction or information that shows the water chemistry in the repository would support a nitrate reduction reaction. Thus, the contention fails to show that

significant change in nitrate to chloride ratio would occur due to nitrate reduction reaction. Nevada has not proffered a reasoned basis that raises a genuine issue as to the significance of the alleged corrosion process or the projected doses to the RMEI. See 10 C.F.R. § 63.114(f). Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

Nevada's boilerplate and conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 574, does not satisfy the showing required to meet the Commission's strict standards for contention admission. The affidavit of Dr. Michael Thorne (NEV Petition, Attachment 3) allegedly supports this assertion, however, it too fails provide a reasoned basis for the statement. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)). Therefore, the contention should be rejected for failing to raise a genuine dispute with the applicant regarding a material issue of law or fact.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 107 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 574. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond

the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 574. Therefore, with respect to this part of the NEV-SAFETY-107, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.6.4.3.1.1 and "similar" subsections. NEV Petition at 571, 573. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other

unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy the criteria in 10 C.F.R. § 2.309(f)(1)(v) and (vi) and should be rejected.

NEV-SAFETY-108 - MOLTEN SALT CORROSION OF THE CANISTER

> SAR Subsection 2.3.6 and similar subsections, which treat the corrosion of the Alloy 22 canister, fail to consider molten salt corrosion.

NEV Petition at 575. Nevada asserts that the DOE license application does not consider the possibility that molten salt corrosion may "significantly degrade" the performance of the Alloy 22 waste package, which is "linked to the predicted dose to the RMEI." NEV Petition at 575, 576-77. Nevada also asserts that the SAR assumes that localized corrosion will not occur at temperatures above 120°, refers to tests in liquid salt solutions up to a 125° maximum temperature, but "ignores evidence that liquid phases (concentrated salts or molten salts)" that can cause corrosion can be formed up to the maximum operating temperatures expected. *Id.* at 575.

Staff Response

For the reasons set forth below, this contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See USEC*, *Inc.,* CLI-06-10, 63 NRC at 455 (citation omitted).

Nevada quotes a statement in a DOE TSPA document that a four-salt mixture "'can transition directly [from an aqueous solution] to anhydrous melts (i.e., they don't exhibit a maximum boiling temperature).'" NEV Petition at 576-77 (citing "Features, Events and

Processes for the Total System Performance Assessment Analyses," ANL-WIS-MD-000027 REV 00 (3/6/08) (LSN# DEN001584824) at 6-706. Nevada contends (1) that it is "well known in the corrosion community that molten salts may be significantly more corrosive than aqueous solutions due to high temperatures" and the "potential for fluxing of oxides that are protective in aqueous solutions" and (2) that concentrated salt solutions or molten salts can be formed from unsaturated zone water, but claims the SAR does not consider the "possibility" of molten salt corrosion. NEV Petition at 577. Nevada, however, provides no facts, reference or analysis that supports its proposition that molten salts will form in sufficient quantities under repository conditions. Nevada also does not address DOE analyses that salt melts occur at approximately 300°C or greater than 400°C, and that the peak waste package surface temperature will not exceed 300°C. *See* analysis of Dust Deliquescence for FEP Screening" (Sept. 5, 2007), ANL-EBS-MD-000074 REV 001 AD 0001 (LSN# DN2002478854) at section 6.1.1[a] at 6.1; SAR Section 2.3.5 at 2.3.5-175 (Table 2.3.5-7, "Peak Drift Wall and Waste Package Temperatures Over All Waste Packages Summarized for Seven Uncertainty Cases"); SAR Figure 2.3.4-98 at 2.3.4-354. Thus, the basis for the contention is speculative and the contention is not supported.

The contention is not supported by expert opinion. The Affidavits of Drs. Maurice Morgenstein and Robert Cottis contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 17, Affidavit of Maurice E. Morgenstein; Attachment 18, Affidavit of Robert A. Cottis. Because each affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized).

Thus, Nevada's conclusory assertions regarding waste package performance and corrosion are not supported by these affidavits.

In short, Nevada's contention is not supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Nevada's challenge to DOE's performance assessment with respect to waste package performance and corrosion raises a dispute with the Applicant, but fails to raise a material issue or law or fact.

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada does not address information in the SAR concerning the projected surface temperatures of waste packages or DOE analyses concerning the over 300°C temperatures

required for formation of molten salts. *See* "Analysis of Dust Deliquescence for FEP Screening" (Sept. 5, 2007), ANL-EBS-MD-000074 REV 01 AD 01 (LSN# DN2002478854) at section 6.1.1[a] at 6.1; SAR Section 2.3.5 at 2.3.5-175 (Table 2.3.5-7, "Peak Drift Wall and Waste Package Temperatures Over All Waste Packages Summarized for Seven Uncertainty Cases"); SAR Figure 2.3.4-98 at 2.3.4-354. Nevada also fails to provide supporting information or expert opinion that specifically support its apparent position that molten salt solutions will form in sufficient quantities under repository conditions such that it would significantly increase to the magnitude and time of radiological exposures to the RMEI, or release of radionuclides to the accessible environment. *See* 10 C.F.R. §§ 63.31(a)(2), 63.114(f). Thus, these claims appear to be speculative and not sufficient to raise a genuine dispute with the Applicant on a material issue. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 578, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-108 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 578. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 578. Therefore, with respect to this part of the NEV-SAFETY-108, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.6 and "similar" subsections. NEV Petition at 575, 577. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

This contention fails to satisfy 10 C.F.R. 2.309(f)(1)(iv) and (vi), and should be rejected.

NEV-SAFETY-109 - MOLTEN SALT CORROSION OF THE DRIP SHIELD

> SAR Subsection 2.3.6.8 and similar subsections, which treat the corrosion of the drip shield, fail to consider molten salt corrosion.

NEV Petition at 579. Nevada asserts that DOE fails to consider the possibility that concentrated salt solutions or molten salt corrosion may "significantly degrade" drip shield performance, which is "linked to the predicted dose to the RMEI." NEV Petition at 579-81.

Staff Response

This contention is not admissible under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See USEC*, *Inc.,* CLI-06-10, 63 NRC at 455 (citation omitted).

Nevada cites a DOE statement (in a TSPA document) that a four salt mixture "'can transition directly to anhydrous melts.'" NEV Petition at 580 (citing "Features, Events and Processes for the Total System Performance Assessment Analyses," ANL-WIS-MD-000027 REV 00 (3/6/08) (LSN# DEN001584824) at 6-706). Nevada, states that it is "well known in the corrosion community that molten salts may be significantly more corrosive than aqueous solutions" due to higher temperatures and the "potential for fluxing of oxides that are protective in aqueous solutions." NEV Petition at 580-81. Nevada, however, provides no reference for this proposition or facts that supports its contention that molten salts will form

under repository conditions or that drip shield performance will be significantly degraded. *See id.* Nevada also does not address DOE's analyses that (1) salt melts occur at approximately 300°C or greater than 400°C, and (2) the drip shield surface temperature will not exceed 300°C since peak waste package surface temperature, which bounds the peak drip shield temperature, will not exceed 300°C in the repository environment. *See A*nalysis of Dust Deliquescence for FEP Screening" (Sept. 5, 2007), ANL-EBS-MD-000074 REV 001 AD 0001 (LSN# DN2002478854) at section 6.1.1[a] at 6.1; SAR Section 2.3.5 at 2.3.5-175 (Table 2.3.5-7, "Peak Drift Wall and Waste Package Temperatures Over All Waste Packages Summarized for Seven Uncertainty Cases"); SAR Figure 2.3.4-98 at 2.3.4-354. Thus, the proposition in its contention is not supported.

The contention is not supported by expert opinion. The Affidavits of Drs. Maurice Morgenstein (Attachment 17), and Robert Cottis (Attachment 18), contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). Because each affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess each expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada's conclusory assertions about corrosion and drip shield performance are not supported by these affidavits.

In short, Nevada's contention is not supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the

applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada, however, does not provide supporting information or expert opinion that specifically addresses how sufficient quantities of molten salts would form under repository conditions and cause significant corrosion in the drip shield. Nevada does not discuss the applicable temperatures for formation of molten salts on drip shield and does not address DOE's analyses indicating that salt melts occur at approximately 300°C or greater than 400°C, and that the drip shield surface temperature will not exceed 300°C. *See A*nalysis of Dust Deliquescence for FEP Screening" (Sept. 5, 2007), ANL-EBS-MD-000074 REV 001 AD 0001 (LSN# DN2002478854) at section 6.1.1[a] at 6.1; SAR Section 2.3.5 at 2.3.5-175 (Table 2.3.5-7, "Peak Drift Wall and Waste Package Temperatures Over All Waste Packages Summarized for Seven Uncertainty Cases"); SAR Figure 2.3.4-98 at 2.3.4-354. Nevada also fails to provide a reasoned basis or qualitative analysis that supports its assertion that formation of molten salt solutions could "significantly" effect doses to the RMEI. *See* NEV

Petition at 581. Bare assertions and speculation are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)). Thus, the basis for the contention is speculative and does not raise a genuine dispute as to a material issue. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 581-82, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 109 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 581-82. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond

the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 581-82. Therefore, with respect to this part of the NEV-SAFETY-109, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.6.8 and "similar" subsections. NEV Petition at 579, 581. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other

unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention fails to satisfy 10 C.F.R. 2.309(f)(1)(iv) and (vi), and should be rejected.

NEV-SAFETY-110 - ROCK BOLT CORROSION

> SAR Subsection 1.3.4.4.1 and similar subsections, which claim that the corrosion performance of the rock bolts will be satisfactory in the 100-year pre-closure period, fail to consider realistic environments or modern understanding of corrosion processes.

NEV Petition at 583. In the contention, and its basis, Nevada asserts DOE "fail[s] to consider realistic environments" or "corrosion processes" for stainless steel rock bolts in the ground support system in emplacement drifts and "greatly underestimate[d] the potential for failure" during the pre-closure period. *See id.*

Staff Response

The contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted).

Nevada argues that DOE statements that (1) the ground support system is "'designed to last at least 100 years . . . in the severe environmental conditions expected in emplacement drifts;'" (2) "'stainless steel rock bolts and perforated stainless steel sheets are expected to fulfill their functions . . . without excessive corrosion;'" and (3) stress corrosion cracking (SCC) of stainless steel will not occur at temperatures below 100°C, are based on a 2003 DOE analysis and fail to consider that deposits of concentrated salt can form near the drift

end of a rock bolt. *See* NEV Petition at 584-85 (quoting SAR Sections 1.3.4.4 at 1.3.4-8 and 1.3.4.4.1 at 1.3.4-11, and citing "Longevity of Emplacement Drift Ground Support Materials for LA" (9/16/2003) (LSN# DN2001087393) (Longevity Report). Nevada also cites a study for the proposition that SCC of type 316 stainless steel can occur at lower temperatures in the presence of salt deposits containing $MgCl_2$ as support for Nevada's assertion that rock bolt failure "seems likely" "will potentially allow drift collapse before repository closure" and lead to the inability to install drip shields. NEV Petition at 585.

These statements, however, do not provide a reasoned basis for how concentrated salt solutions could form and cause corrosion of rock bolts, the source of stress corrosion, or why such salt solutions and temperatures are relevant to Yucca Mountain during the "100-year" preclosure period. These statements do not support Nevada's assertion that DOE failed to consider "realistic" environments or corrosion processes because Nevada does not address sections in the Longevity Report (a document Nevada cites, NEV Petition at 584) that discuss the chemical environment of emplacement drifts. *See, e.g.*, Longevity Report, Section 6.4.4.3, "Aqueous Corrosion," at 31-32; Section 6.4.4.4, "Pitting and Crevice Corrosion" at 33; Section 6.4.4.5, "Stress Corrosion Cracking" at 34. Thus, the contention is not supported.

The contention is not supported by expert opinion. The affidavits of Drs. Don Shettel, Maurice Morgenstein, and Robert Cottis, contain the statement that the affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 10, Affidavit of Don L. Shettel ¶ 2; Attachment 17, Affidavit of Maurice E. Morgenstein ¶ 2; Attachment 18, Affidavit of Robert A. Cottis ¶ 2. Because each affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess expert's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power

Station), LBP-04-28, 60 NRC 548, 560 n. 16 (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada's conclusory assertions of rock bolt failures and SCC are not supported by these affidavits.

In short, Nevada's contention is not supported by alleged facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171, 33,170 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34, quoting 54 Fed. Reg. at 33,.

Nevada does not provide supporting information or expert opinion that specifically shows DOE failed to consider a realistic environments or corrosion processes in emplacement drifts, much less address statements in the SAR that the ground support system is neither important to safety nor important to waste isolation because DOE does not credit for ground support during the postclosure performance period. *See* SAR Subsection 1.3.4.4, "Ground Support System," at 1.3.4-8. In addition, Nevada's statements that rock bolt failures are

"likely" and will prevent DOE from having the capability to install drip shields are speculative in that Nevada does not acknowledge that DOE will conduct inspection and monitoring activities during the pre-closure period, and evaluate any maintenance needs. *See* SAR Section 1.3.4.8. Thus, Nevada fails to raise a genuine dispute that formation of concentrated salt solutions would cause rock bolt corrosion that would either prevent installation of drip shields or would result in a significantly increase the magnitude and time of radiological exposures to the RMEI or the release of radionuclides to the accessible environment. *See* 10 C.F.R. § 63.114.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 586, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition Attachment 3, Affidavit of Michael C. Thorne ¶ 3. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003), citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists . . . on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion (vi) because it did not reference a specific portion of the application).

NEV-SAFETY- 110 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention . . . ."

NEV Petition at 586. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention), the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists . . . on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 586. Therefore, with respect to this part of NEV-SAFETY-110, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 1.3.4.4.1 and "similar" subsections. NEV Petition at 583, 585. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it

wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-116 – SATURATED ZONE REDOX CONDITIONS

> SAR Subsection 2.4 and similar and related subsections, which state or assume that potential variations in redox conditions (reducing or anoxic conditions) in the saturated zone could enhance radionuclide adsorption, are unrealistic and invalid. Therefore, this aspect of the PMA (LSN# DN20023695678) is invalid and cannot be used in support of post-development validation of the TSPA.

NEV Petition at 616. In this contention Nevada asserts that "DOE's assumption that radionuclide adsorption would be enhanced by potential reducing (anoxic) conditions in the saturated zone is without foundation as no such reducing zones have been delimited beneath the repository footprint." NEV Petition at 616. Therefore, Nevada asserts, this concept should not be used in post-TSPA validation. *See* NEV Petition at 616.

Staff Response

The Staff opposes the admission of NEV-SAFETY-116 because it does not raise a material issue with regard to the proposed action pursuant to 10 C.F.R. § 2.309(f)(1)(iv). For this reason, NEV-SAFETY-116 should be rejected.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada must demonstrate that the *issue raised* is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Oconee*, CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). *See also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993) (information material to a decision whether to grant a radioactive byproduct materials

license). In this proceeding, the finding the Staff must make is of whether "there is reasonable assurance that. . . radioactive materials. . . can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and. . . there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public," as required by 10 C.F.R. § 63.31(a)(2). In particular, with respect to this contention, the relevant issue is whether 10 C.F.R. § 63.31(a)(3)(ii) has been met.

Here, Nevada objects to assumptions about reducing conditions made in developing part of the Performance Margin Analysis (PMA). However, the PMA is not being used by DOE to demonstrate that it meets the requirements of Part 63. SAR Subsection 2.4.2.3.2.3.2.4 at 2.4-245 explicitly states that,

> [a]s described in Section 2.4.2.3.2, the required validation level for the TSPA model requires use of at least two post-development model validation activities. However, the TSPA model validation efforts exceed procedural requirements (SNL 2008a, Section 7) because in addition to the post-development validation activities discussed above, the validation efforts included several additional post-development activities to enhance confidence in the TSPA model. One of these additional post-development validation activities is the corroboration of system model results with the results obtained using the PMA. The PMA provides additional confidence in the TSPA model results by examining the effect of conservatisms on the model results.

Further both DOE and Nevada agree that assumptions made in the SAR are conservative. *See* Nevada petition at 617; SAR Subsection 2.4.2.3.2.3.2.4 at 2.4-245. Therefore, because DOE is not using the PMA to demonstrate compliance with Part 63, it is not material to a finding the Staff must make. Thus, this contention fails to meet the requirements 10 C.F.R. § 2.309(f)(1)(iv) and should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion.

Here, Nevada does not support its allegations of noncompliance with Part 63 by explaining how the use of anoxic groundwater-relevant sorption coefficient distributions within the PMA will lead to any increase in the mean dose to the RMEI. As discussed above, the PMA is an additional validation activity that exceeds the required two post-development model validation activities. *See* SAR Subsection 2.4.2.3.2.3.2.4 at 2.4-245. Thus, Nevada fails to explain how the assumption of redox conditions in the PMA could result in the alleged noncompliance. Accordingly, NEV-SAFETY-116 fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) and should be rejected.

NEVADA-SAFETY-118 – ESTIMATION OF UNCERTAINTIES IN SOIL-TO-PLANT TRANSFER FACTORS

> SAR Subsection 2.3.10.3, and similar subsections, identify the source of soil to plant transfer factors used in the License Application as a number of secondary reviews of relevant literature that are not independent and do not adequately reflect the range of variability in the data reported in the primary literature, such that the performance assessments based on these soil to plant transfers do not fully account for the uncertainties and variabilities in parameter values for 10,000 years after disposal.

NEV Petition at 627. This contention asserts that DOE's soil-to-plant transfer factors "fail to represent the full range of uncertainty and variability recorded in the underlying primary literature," because DOE uses soil-to-plant transfer factors that rely upon "secondary reference sources." NEV Petition at 627.

Staff Response

The Staff oppose NEV-SAFETY-118 because it fails to provide a concise statement of the alleged facts or expert opinions that support the contention and does not provide sufficient information to show that a genuine dispute of fact or law exists with the applicant. *See* 10 C.F.R. § 2.309 (f)(1)(v) and (vi). Accordingly, this contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142,181 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion.

Nevada asserts that some of DOE's soil-to-plant-transfer factors are based on generic values derived from secondary documents. *See* NEV Petition at 629. Nevada then notes the authors of this literature did not generally have the specific semi-arid agricultural conditions of Amargosa Valley in mind when they undertook their reviews, but do not support the criticism that DOE's bias correction was not appropriate. *See* NEV Petition at 630. Instead, Nevada merely asserts, without further explanation or evaluation, that "although the authors made some attempt to correct for [the bias of using experiments performed on soils typical of temperate climates], they did so only on the basis of the secondary reviews, not by reference to the primary literature." NEV Petition at 630. Nevada provides no support for its assertion that DOE must use primary literature for the soil-to-plant transfer factors or that doing so will reduce uncertainty. Basically, Nevada asserts that: "[i]n summary, the approach to analyzing the data on soil to plant transfer factors provides results that do not have a statistically well-defined interpretation" and improperly implies that there exists an underlying lognormal distribution among the results. NEV Petition at 630. But Nevada provides no support for these assertions. Moreover, Nevada fails to explain how the asserted increase in uncertainty will lead to an increase in the mean dose to the RMEI. Indeed, the numerical example cited by Nevada indicates that, although they disagree with the method used to determine the geometric mean and standard deviation of the transfer factors, the geometric mean and geometric standard deviation used by DOE encompasses those that exist in the literature. *See* NEV Petition at 629.

As described above, the assertions made by Nevada throughout this contention are conclusory and unsupported by explanation. Therefore, this contention fails to meet the requirements of § 2.309(f)(1)(v) and should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald

or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). NEV-SAFETY-118 fails in this regard and should be rejected.

As noted above, Nevada offers no support for its claims that DOE's use of secondary literature to derive soil-to-plant transfer factors was improper and results in non-compliance with regulatory requirements. Notably, there is no requirement in § 63.114(b), or any other NRC regulation applicable to DOE, that requires the use of primary data sources. Thus, Nevada does not provide sufficient information to demonstrate a genuine dispute of fact or law with the applicant.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 631, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 118 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 631. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 631. Therefore, with respect to this part of the NEV-SAFETY- 118, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.10.3 and "similar" subsections. NEV Petition at 627. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,*CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-119 – ESTIMATION OF UNCERTAINTIES IN ANIMAL PRODUCT TRANSFER COEFFICIENTS

> SAR Subsection 2.3.10.3, and similar subsections, identify the source of animal product transfer coefficients used in the License Application as a number of secondary reviews of relevant literature that are not independent and do not adequately reflect the range of variability in the data reported in the primary literature, such that the performance assessments based on these animal product transfer factors do not fully account for the uncertainties and variabilities in parameter values for 10,000 years after disposal.

NEV Petition at 633. This contention asserts that DOE's animal-product transfer coefficients "fail to represent the full range of uncertainty and variability recorded in the underlying primary literature," because DOE uses animal-product transfer coefficients that rely upon "secondary reference sources." NEV Petition at 633.

Staff Response

The Staff oppose NEV-SAFETY-119 because it fails to provide a concise statement of the alleged facts or expert opinions that support the contention and does not provide sufficient information to show that a genuine dispute of fact or law exists with the applicant. *See* 10 C.F.R. § 2.309 (f)(1)(v) and (vi). Accordingly, this contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion.

Nevada asserts that some of DOE's animal-product transfer coefficients are based on generic values derived from secondary documents. *See* NEV Petition at 635. Nevada then notes the authors of this literature did not generally have the specific semi-arid agricultural conditions of Amargosa Valley in mind when they undertook their reviews. *See* NEV Petition at 635. However, Nevada provides no claim or evidence that DOE must use primary literature for the animal-product transfer coefficients or that not doing so will increase uncertainty. The sum of Nevada's argument is captured in a concluding statement: "[i]n summary, the approach to analyzing the data on TCs provides results that do not have a statistically well-defined interpretation, do not reflect the underlying primary literature and do not fully take account of factors controlling the values observed." NEV Petition at 636-37. But no support for these statements is provided throughout the contention. For instance, the article cited to dispute DOE's values for chlorine-to-milk transfer coefficients does not demonstrate that DOE's values are incorrect, but rather that DOE's values are more conservative because they encompass a wider range of possible values than those cited by Nevada. Furthermore, Nevada does not support that the different approach leads to an increase in the mean dose to the RMEI. In fact, Nevada does not discuss how the narrow range of transfer coefficients would affect the mean dose to the RMEI at all.

The assertions made by Nevada throughout this contention are unsupported by explanation. Therefore, this contention fails to meet the requirements of § 2.309(f)(1)(v) and should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). NEV-SAFETY-

119 fails in this regard and should be rejected.

As noted above, Nevada offers no support for its claims that DOE's use of secondary literature to derive animal-product transfer coefficients was improper and results non-compliance with regulatory requirements. Notably, there is no requirement in § 63.114(b), or any other NRC regulation applicable to DOE, that requires the use of primary data sources. Thus, Nevada does not provide sufficient information to demonstrate a genuine dispute of fact or law with the applicant.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 637, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 119 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 637-38. To the extent that the reference is interpreted to state objections to

aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 637-38. Therefore, with respect to this part of the NEV-SAFETY- 119, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.10.3 and "similar" subsections. NEV Petition at 633. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" sections of the SAR it

wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194. (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-120 – RMEI DIET

> SAR Subsection 2.3.10.2.5 and similar subsections identify the animal products included in the biosphere assessment model as meat, poultry, eggs and milk, but fail to consider other animal products such as liver that are likely to be consumed by people who reside in the Town of Amargosa Valley and that are very effective in accumulating radionuclides notably actinides.

NEV Petition at 639. In support of this contention, Nevada argues that DOE's failure to include certain animal products, such as liver, in the dietary survey administered to residents in the Town of Amargosa Valley, Nevada renders the estimates of the radiological impact to the RMEI due to the consumption of local animal products inadequate. NEV Petition at 639-40. Nevada asserts that liver and other offal are potentially significant dietary components of the RMEI based on comparative information from the U.K. and that these foods were improperly excluded from the administered food survey. NEV Petition at 642-43. Further, it is argued that certain radionuclides more readily concentrate in the liver than in animal muscle tissue. NEV Petition at 643. Thus, Nevada alleges non-compliance with a number of Part 63 requirements, in particular 10 C.F.R. § 63.312 by failing to properly describe the diet and living style characteristics of the RMEI, and, thus, §§ 63.113, 63.311, and 63.321 which require assessments based on factors derived from surveys conducted pursuant to § 63.312(b). NEV Petition at 639-40.

Staff Response

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of expert fact or opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent

Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion.

Nevada argues that the SAR fails to include animal products such as liver that are *likely* to be consumed by residents of the Town of Amargosa Valley. *See* NEV Petition at 639 (emphasis added). In support this alleged likelihood, Nevada cites to an article indicating that in the United Kingdom, "offal consumption can be comparable with meat consumption in high-rate consumers." NEV Petition at 642. This study does not support Nevada's claim that DOE failed to appropriately characterize the diet of the RMEI, who by regulation has a diet and living style *representative of the people who now reside in the town of Amargosa Valley*. 10 C.F.R. § 63.312(b) (emphasis added). There is no support provided for the suggestion that a dietary survey of British citizens, much less British citizens who are also "high-rate consumers" of liver, is more representative of the Amargosa Valley RMEI's diet than the local surveys conducted by DOE. *See* NEV Petition at 642. Furthermore, it is the locally produced foods in the RMEI diet that are important to determining potential radionuclide impacts from diet. The study cited provides no indication that the results capture the consumption of locally produced liver. Thus, the facts and opinion provided by Nevada in no way supports this contention because they are inapposite. For this reasons, this contention does not meet the requirements of § 2.309(f)(1)(v) and should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). NEV-SAFETY-120 fails in this regard and should be rejected.

Although Nevada claims throughout this contention that liver was not considered in the dietary survey of local residents, the state neglects to recognize that DOE does include references to liver in survey questions in "The 1997 'Biosphere' Food Consumption Survey Summary Findings and Technical Documentation," [1997 Survey] which Nevada references in its contention. *See* NEV Petition at 640. SAR Subsection 2.3.10.3.1.9 at 2.3.10-47 confirms that "consumption rates of locally produced crops and animal products were based on the 1997 Survey of Amargosa Valley residents." According to the survey report, survey administrators were directed to say: "we are looking for any consumption of locally produced food, even if it is small. . .[t]his includes all individual foods and items listed in the attached food definition list. . ." 1997 Survey at Appendix A at A-6, LSN# DEN000684324. Within the food definition list at 3f in the 1997 survey, "Beef" was stated to include "any edible meat from cattle, foods such as steaks, hamburgers, roast beef, meatloaf, tongue, and *liver*." *Id*. at A-7 (emphasis added). Thus, Nevada's assertion that DOE did not consider liver in its dietary survey, which is the basis for the average consumption rates used in the biosphere model, is incorrect.

The 1997 Survey explicitly controverts the material basis for this contention; thus, Nevada states no genuine dispute of fact or law with the applicant. Further, because Nevada does not recognize the explicit inclusion of liver in the 1997 Survey, Nevada adduces no evidence or claim that the extent to which liver was considered was insufficient in some manner. For this reason, NEV-SAFETY-120 falls short of the requirements of § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 644, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for

the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 120 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 644. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.*

(Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 644. Therefore, with respect to this part of the NEV-SAFETY-120, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.10.2.5 and "similar" subsections. NEV Petition at 639, 643. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this

contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, NEV-SAFETY-120 does not meet the requirements of 10 C.F.R. § 2.309(f)(1) and should be rejected.

NEV-SAFETY-121 – HOST ROCK GEOMECHANICAL PROPERTIES

> SAR Subsection 1.3.4.4 and similar subsections, which discuss the ground support system for the emplacement drifts, reach conclusions about the geomechanical properties of the predominant host rock units used for design based on very limited numbers of physical tests that are insufficient to demonstrate that the rocks hosting the emplacement drifts will contribute to post-closure performance by functioning as a geological barrier.

NEV Petition at 646. In support of NEV-SAFETY-121, Nevada argues that DOE has not performed sufficient testing on the repository host rock in order to assess it as a geologic barrier for repository performance. *Id.* Nevada contends that this violates 10 C.F.R. § 63.114(a), which requires that any performance assessment used to demonstrate compliance with Section 63.113 must include data related to the geology, hydrology, and geochemistry of the Yucca Mountain site, and 10 C.F.R. § 63.115(b), which requires that the application set forth information describing the capacity of barriers, including natural barriers, to isolate waste. *Id.* at 647, 649-650.

Staff Response

The Staff opposes the admission of NEV-SAFETY-121, on the grounds that it does not meet the criteria set forth in 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

Here, NEV-SAFETY-121 asserts that DOE has performed inadequate testing on the host rock for the proposed repository and that the SAR's discussion of the geomechanical

properties of the host rock is called into question by this lack of sufficient testing. NEV Petition at 646-649. For example, NEV-SAFETY-121 states that DOE has not tested a sufficient number of samples of host rock at elevated temperatures. *See* NEV Petition at 649. However, NEV-SAFETY-121 does not explain or demonstrate why Nevada believes that this lack of testing is inadequate, nor does it set forth what it believes would be a more appropriate testing level and a basis for why increased testing would provide additional reliability. Finally, although NEV-SAFETY-121 broadly challenges the SAR's description of the geomechanical properties of the host rock for the proposed repository, *see* NEV Petition at 646, NEV-SAFETY-121 does not provide any explanation or discussion of what SAR data, or conclusions based on that data, Nevada believes to be inadequate due to insufficient testing. NEV-SAFETY-121 is therefore not based on adequate facts or expert opinion and should be rejected, because it has not provided any basis in the form of fact or expert opinion for its assertion that the testing of the host rock is inadequate.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). "[A] contention must show that a "genuine dispute exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-SAFETY-121 argues that DOE has not performed a sufficient amount of testing on the repository host rock in order to assess its geomechanical properties as they relate to repository performance as a geologic barrier. NEV Petition at 646-650. Nevada contends that this violates 10 C.F.R. § 63.114(a), which requires that any performance assessment used to demonstrate compliance with 10 C.F.R. § 63.113 must include data related to the geology, hydrology, and geochemistry of the Yucca Mountain site, and 10 C.F.R. §

63.115(b), which requires that the application set forth information describing the capacity of barriers, including natural barriers, to isolate waste. *Id.* at 647, 649-650.

With regard to 10 C.F.R. § 63.114(a), this section requires that DOE's performance assessment "include data related to the geology, hydrology, and geochemistry…of the Yucca Mountain site." Nevada does not dispute that DOE's performance assessment includes the data required by section 63.114(a). Nor does NEV-SAFETY-121 attempt to challenge the accuracy of any of the SAR's geological or geomechanical data that is based upon the testing Nevada believes to be inadequate. Rather, NEV-SAFETY-121 asserts that, because of what it believes is inadequate testing of the host rock, DOE (and the NRC) cannot be sure that the SAR's description of the host rock's geomechanical properties (specifically, SAR § 1.3.4.4) are accurate. *Id.* at 646. However, NEV-SAFETY-121 does not identify any inaccuracies, or even potential inaccuracies, in the SAR § 1.3.4.4 or any other part of the LA, much less provide any discussion as to how any purported inaccuracy would affect the performance of the natural barrier or the repository as a whole. Nor does NEV-SAFETY-121 demonstrate or explain why Nevada contends that the amount of testing conducted by DOE is insufficient or set forth what it believes would be a sufficient level of testing. This is insufficient to raise a genuine issue of material fact or law concerning the license application.

NEV-SAFETY-121 also asserts that the alleged deficiency violates 10 C.F.R. § 63.115(b), which requires that the LA set forth information describing the capacity of barriers, including natural barriers, to isolate waste. NEV-SAFETY-121 does not dispute that the LA sets forth this information in the SAR. Nor does NEV-SAFETY-121 dispute or challenge the accuracy of any information contained in the SAR. This, too, is insufficient to raise a genuine issue of material fact or law concerning the license application. Therefore, in accordance with 10 C.F.R. § 2.309(f)(1)(vi), NEV-SAFETY-121 should be rejected.

Finally, NEV-SAFETY-121 seeks to raise a dispute with SAR subsection 1.3.4.4 and "similar subsections." To the extent that NEV-SAFETY-121 seeks to raise an issue with a

"similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because NEV-SAFETY-121 does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because NEV-SAFETY-121 has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible and should be rejected.

NEV-SAFETY-122 – SCREENING OF DRIFT DEGRADATION FEPS

> SAR Subsection 2.3.4.1 improperly excludes features, events, and processes relating to seismic-induced rockfall damage, non-seismic rockfall and drift collapse that could occur within the first 10,000 years from consideration in the TSPA on the basis of low consequence or low probability.

NEV Petition at 651. In support of NEV-SAFETY-122, Nevada argues SAR Subsection 2.3.4.1 improperly excludes features, events, and processes relating to seismic-induced rockfall damage, non-seismic rockfall and drift collapse from consideration in the TSPA on the basis of low consequence or low probability. *Id.* Nevada asserts that modeling undertaken by the Center for Nuclear Waste Regulatory Analyses ("CNWRA") considers that such events may be sufficient to collapse drip shields and thus promote seepage onto waste packages and cause corrosion. *Id.* Nevada argues that, in light of the CNWRA's modeling, DOE's screening of seismic-induced rockfall damage, non-seismic rockfall, and drift collapse FEPs is not adequately justified under 10 C.F.R. § 63.342. *Id.* at 655. Alternatively, Nevada argues that the Center's model represents an alternative model that DOE was required to evaluate under 10 C.F.R. § 63.114(c). *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-122, on the grounds that it does not meet the criteria set forth in 10 C.F.R. § 2.309(f)(1)(iv), (v) and (vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

With regard to materiality, an admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. *Id; see PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007); *Southern Nuclear Operating Company* (Early Site

Permit for Vogtle ESP Site), LBP-07-03, 65 NRC 237, 253 (2007). This requires a showing by the petitioner that the resolution of the proffered contention "would make a difference in the outcome of the licensing proceeding." *Duke Energy Corp*. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-334 (1999) (internal citation omitted.).

Here, NEV-SAFETY-122 asserts that SAR Section 2.3.4.1 improperly screens from consideration seismic-induced rockfall damage, non-seismic rockfall, and drift collapse FEPs from consideration in the TSPA. NEV Petition at 651. Nevada argues that modeling by the CNWRA calls into question DOE's decision to screen these FEPs.[57] *Id.* at 655. Nevada acknowledges, however, that it has not evaluated the differences between the DOE and CNWRA models, nor has it evaluated the CNWRA analysis and what impacts that analysis might have with respect to the FEPs it alleges have been improperly screened. *Id.* at 654. It nonetheless argues that CNWRA's model should be "reconciled" with that of DOE and, if necessary, one of the two models should be eliminated. *Id.* at 654-55.

Nevada has not attempted to demonstrate that this "reconciliation" of models would mean that the FEPs that are the subject of NEV-SAFETY-122 would have to be considered in the TSPA or that such consideration would significantly affect the TSPA in any way. Therefore, Nevada can not demonstrate and has not demonstrated that resolution of NEV-SAFETY-122 would "make a difference" in the proceeding, as required by 10 C.F.R. § 2.309(f)(1)(iv).

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[57] The CNWRA model concerns only drift degradation and collapse and does not evaluate rockfall. *See* "Risk Insights Derived from Analyses of Model Updates in the Total-System Performance Assessment Version 5.1 Code", July 31, 2008, LSN #NRC000029711, 4-1 – 4-3. Because the CNWRA model, which is the basis for NEV-SAFETY-122, *see* NEV Petition at 651, does not evaluate rockfall events, NEV-SAFETY-122 does not meet 10 C.F.R. § 2.309(f)(1)(ii) or (v) to the extent that it involves FEPs other than drift collapse, such as rockfall.

Alternatively, Nevada argues that "the CNWRA position represents, at the very least, an alternative conceptual model that . . . should be evaluated in the performance assessment to comply with 10 C.F.R. § 63.114(c)." This argument fails for two reasons. First, Nevada has not demonstrated that use of the CNWRA's model would lead to any different conclusions or results than use of DOE's model. In fact, Nevada freely acknowledges that it has not analyzed the extent to which DOE's and CNWRA's models would lead to differences in the SAR's evaluation of the FEPs that are the subject of NEV-SAFETY-122. NEV Petition at 654. Therefore, it has not demonstrated that consideration of the CNWRA model as an alternative model under 10 C.F.R. § 63.114(c) would "make a difference" in the outcome of the construction authorization proceeding. Second, the requirement to consider alternative models applies only to the first 10,000 years of the postclosure period. Section 63.114(c) as it currently exists requires the consideration of alternative models for performance assessments used to demonstrate compliance with 10 C.F.R. § 63.113, which, as it currently exists, sets forth performance objectives for 10,000 years post-closure. The proposed rule, 10 C.F.R. § 63.114(a)(3), makes clear that the requirement to consider alternative models applies only to the first 10,000 years post-closure. *See* 70 Fed. Reg. 53,313, 53,318 (Sept. 8, 2005). Therefore, NEV-SAFETY-122 is not material to any finding the NRC must make in this proceeding to the extent that it concerns the post-10,000 year post-closure period. Because Nevada has not demonstrated that the issue raised in NEV-SAFETY-122 is material to the outcome of the present proceeding, NEV-SAFETY-122 should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

In NEV-SAFETY-122, Nevada argues that DOE has improperly screened seismic-induced rockfall damage, non-seismic rockfall, and drift collapse FEPS from consideration in the TSPA. Nevada argues that the CNWRA model describes drift degradation and rubble accumulation in an emplacement drift, and its consequences, in a manner different from the DOE model used in the SAR. *Id.* at 653-654.

However, with regard to the likelihood of the FEPs occurring, Nevada offers only that "[i]f the rubble load is found to be sufficient to collapse the drip shields, it is assumed that some fraction of the seepage may pass through the drip shields and contact the waste packages. If water contact with the waste packages occurs early in the thermal period, localized corrosion may occur . . . If the resulting stress is amplified by seismic acceleration, mechanical damage to the waste package may occur." NEV Petition at 654. Nevada offers no basis for concluding that these events will occur or are substantially likely to occur, nor does Nevada point to the CNWRA analysis or any other source to demonstrate that the likelihood of these events exceeds the probability threshold for consideration in the performance assessment.

NEV-SAFETY-122, therefore, is not based on "reasoned basis or explanation" but rather on mere speculation and unsupported assumption that cannot support the admissibility of a contention. *See Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)); *Nuclear Management Company, LLC* (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 749-750 (2005). Accordingly, NEV-SAFETY-122 must be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). "[A] contention must show that a "genuine dispute exists with the applicant on a material issue of law or fact…The intervenor must do

more than submit "bald or conclusory allegation[s]" of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

As stated above, while NEV-SAFETY-122 argues that DOE improperly screened certain FEPs from consideration in the performance assessment based on probability or consequence, it does not provide any support whatsoever for its assertion that the likelihood of these FEPs occurring would exceed the probability threshold for inclusion in the performance assessments. NEV-SAFETY-122 therefore consists of merely a conclusory allegation, without support, that screening based on probability was not justified. This is insufficient to raise a genuine dispute of material fact or law and NEV-SAFETY-122 must, accordingly, be rejected.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 655-56, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the

application).

NEV-SAFETY-122 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 655-56. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 655-56. Therefore, with respect to this part of the NEV-SAFETY-122, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-123 - DURABILITY OF GROUND SUPPORT

> SAR Subsection 1.3.4.4 and similar subsections, which discuss the ground support system in the emplacement drifts, fail to consider that the assumed 100-year life for the Super Swellex™ friction-type rock bolts and the Bernold sheets is speculative because this particular ground support system has been in use for less than 40 years.

NEV Petition at 658. NEV-SAFETY-123 claims that the anticipated 100-year lifespan for components of the ground support system are speculative because the materials to be used have not existed for 100 years, thus it is speculative to assume that such materials will last 100 years. *Id.*

Staff Response

As discussed below, however, Nevada's contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion . . . ." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (internal citation omitted). NEV-SAFETY-123 argues that 100-year expected life of the stainless steel rock bolts and Bernold sheets which make up the ground support system is "unfounded." *See* NEV Petition at 660. Nevada notes that rock bolts such as proposed for use by DOE have only been in use since the 1970's and Bernold sheets were introduced in the 1960's. *Id.* at 658. Further, Nevada states that there is a lack of data regarding stainless steel rock bolts because such bolts are

usually made of carbon steel. *Id.* at 660. Nevada does not provide any independent information that suggests the ground support system will not last 100 years. The basis for this contention appears to be that because the components of the ground support system haven't existed for 100 years that it is inappropriate to assume that they will last that long. Nevada does not provide any independent information that would indicate that a 100-year life span for these components is unrealistic. This is an unfounded assertion that is not supported with any information to indicate that a 100 year life span is unreasonable. Assertions stating that the applicant is "wrong" without any supporting basis is not enough to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v). *See USEC,* CLI-06-10, 63 NRC at 472. As such, the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact . . . . The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. He or she must 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted).

NEV-SAFETY-123 "challenges SAR subsection 1.3.4.4. and similar subsections . . . because they fail to consider that the presumed 100-year life for the Super Swellex™ friction-type rock bolts and the Bernold sheets is unproven as a consequence of this ground support system having been in use for less than 40 years." NEV Petition at 660. As discussed

above, Nevada provides no information to contradict the expected life-span of the ground support system other than to point out that the materials it will use have not been in existence for 100 years. Such an unfounded assertion is not an adequate basis to establish that a genuine dispute exists with respect to this contention. *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-123 is, therefore, inadmissible.

In addition, NEV-SAFETY-123 seeks to raise a dispute with SAR subsection 1.3.4.4 "and similar subsections." NEV Petition at 658, 660. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not

advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

For all the foregoing reasons, this contention is inadmissible.

NEV-SAFETY-124 – WELDING OF ALPHA BETA TITANIUM ALLOY TO UNALLOYED TITANIUM

> SAR Subsection 1.3.4, Tables 1.3.4.3 and 1.3.4.4 and other similar and related subsections, which indicated that an all alpha titanium alloy (Grade 7) has been selected for the water diversion surface (WDS) of the drip shields and an alpha-beta titanium alloy (Grade 29) has been selected for structural components, fails to properly demonstrate, test, and account for the phenomena of delayed cracking due to hydrogen migration and precipitation of embrittling titanium hydrides to low solubility alpha material from higher solubility beta phase material, particularly at welds, and therefore DOE has failed to consider associated drip shield failures.

NEV Petition at 663. Nevada contends that the "apparent failure to adequately consider hydrogen induced delayed cracking" and to demonstrate and test welds with proposed combinations of titanium "leaves open an un-quantified risk of significant structural failure . . . ." NEV Petition at 663. Nevada argues that DOE fails to consider drip shield failures associated with delayed cracking and precipitation of embrittling titanium hydrides. *Id.* Therefore, Nevada concludes that SAR Subsection 1.3.4, Tables 1.3.4-3 and 1.3.4-4 and other similar and related subsections do not comply with Part 63, in particular, 10 C.F.R. § 63.113. *See id.* at 664, 666.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-124.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-Safety-124 fails to provide sufficient information to show that a genuine dispute exists with regard to the applicant or specific portions of the LA "on a material issue of law or fact" as required by 10 C.F.R. § 2.309(f)(1)(vi). The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. *See id. See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4,

65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). An "intervenor must do more than submit 'bald or conclusory allegations[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted).

Here, Nevada asserts that DOE's SAR does not comply with Section 63.113 because DOE has not demonstrated to what extent selected materials will be susceptible to hydrogen effects, and therefore DOE did not "adequately" consider these effects in the TSPA model development and did not address these effects in the FEP statements, which in turn could have an impact on dose to the RMEI. *See* NEV Petition at 666. Contrary to Nevada's assertion, DOE did consider hydrogen effects in the FEP statements. Specifically, DOE considered and excluded from the TSPA on the basis of low probability, hydride cracking of the drip shield. *See* SAR at Section 2.2, Table 2.2-5 at 2.2-233. Nevada does not refer to this FEP nor does it challenge DOE's exclusion of it from further consideration in the TSPA. NEV-SAFETY-124 does not present any information that would demonstrate that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of these FEPs, as required by 10 C.F.R. § 63.114(e). Beyond mere assertion, Nevada has not shown that DOE did not adequately consider hydrogen effects and that hydride cracking may affect performance of the drip shield and dose to the RMEI. *See* NEV Petition at 666. Therefore, the conclusory assertion that DOE failed to consider hydrogen effects which could impact dose to the RMEI fails to raise a genuine dispute because DOE did consider these effects. 10 C.F.R. § 2.309(f)(1)(vi); *see also Millstone,* CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 667, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 124 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 667. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting

forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 667. Therefore, with respect to this part of the NEV-SAFETY-124, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 1.3.4, Tables 1.3.4.3 and 1.3.4.4 and "similar and related" subsections. NEV Petition at 663,665. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a

clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Thus, for the reasons set forth above, NEV-SAFETY-124 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-125 – EFFECTIVENESS OF STRESS RELIEF TO ELIMINATE SCC OR HYDROGEN EFFECTS

> SAR Subsection 2.3.6.8.3, which states that the drip shield will be fully stress-relief annealed before emplacement reducing residual stresses by about 50% or to the point that SCC can be dismissed as an issue, fails to provide adequate information to make this demonstration and DOE did not report tests of actual material combinations proposed for the drip shield; therefore, it must be presumed that unquantified residual stresses could lead to hydride formation in areas of high stress and increased susceptibility to failure under external loads.

NEV Petition at 668. Nevada contends that DOE's proposed stress relieving treatment is not adequately evaluated or demonstrated. *Id.* at 673. Specifically, Nevada argues that DOE failed to provide data to show how effective the proposed stress relief will be on the combination of materials selected by DOE "or that stress relief will not introduce problems such as distortion, unacceptable heavy surface oxide concentrations, or hydrogen pick-up during stress relief." NEV Petition at 668. Thus, Nevada concludes that SAR subsection 2.3.6.8.3 and similar subsections do not comply with Section 63.113 because failure due to residual stresses could lead to impacts on the RMEI. *See id.* at 673.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-125.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). "Bare assertions and speculation" cannot support the admission of a contention. *See Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (internal citation omitted).

To support NEV-SAFETY-125, Nevada provides affidavits of three experts who attest to the information in paragraphs 5 and 6. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 14, Affidavit of James A. McMaster; Attachment 18, Affidavit of Robert A Cottis.

Here, Nevada contends that DOE has not demonstrated "the assumption that reducing residual stresses by 50% or that the proposed stress relief will eliminate the risk of stress corrosion cracking (SCC) of the Grade 29 titanium. . . ." NEV Petition at 670. Nevada suggests that air-cooling from the stress-relieving temperature may result in non-uniform cooling of the respective drip shield alloys, which may, in turn, cause residual stresses and distortion of the drip shield. *See id.* at 671. Nevada states that during cooling, "Grade 29 titanium will pick up substantial strength before the Grade 7 titanium. As the material cools further, the Grade 7 material adjacent to the Grade 29 material will be placed in residual tension, balanced by a compressive residual stress in the Grade 29 material." *Id.* at 669. Nevada has not provided support for the assertion that air-cooling leads to non-uniform cooling of the respective alloys. Nor has Nevada established the presumed connection between the strength of the respective alloys and the residual stress state. As such, Nevada has not provided support to show that air cooling from stress-relief annealing temperature will impart residual stresses on the drip shield or distort the drip shield such that the ability of the drip shield to perform its intended safety function is compromised. Therefore, these assertions cannot support admission of this contention. *See Fansteel*, CLI-03-13, 58 NRC at 203.

Nevada also asserts that stress-relief heat treatment may cause the formation of an oxide layer on the drip shield which DOE has not considered in the performance assessment. *See id.* at 672. Nevada claims that "[t]hermal stress relieving in air . . . will result in a build up of surface oxide of the order of at least 2000-3500 angstroms thickness . . . ." *Id.* at 671. Nevada states that this oxide layer may improve corrosion performance under certain

circumstances" and could "readily produce unexpected results in these specific services," but it has not been studied by DOE and "one cannot really know what performance to expect without testing." See *id*. However, Nevada does not provide technical support for its assertion that an oxide layer 2000-3500 angstroms thick will form nor does it show that if this oxide layer did form, that it would adversely impact repository performance. Rather, Nevada speculates that it may improve corrosion performance under certain circumstances and the results may be unexpected. *See id.* Nevada does not specify what these circumstances are or what the unexpected results may be. The above assertions, even if made by an expert, cannot provide support for this contention absent "a reasoned basis or explanation" for these conclusions. *See USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

Nevada asserts that DOE failed to demonstrate that the proposed stress-relief heat treatment will eliminate the risk of SCC of Grade 29 Titanium or hydride migration and formation in Grade 7 titanium and that failure due to "either mechanism would lead to preferential paths by which water could contact waste packages, resulting in degradation . . ., release of radionuclides and consequent impacts on the RMEI." NEV Petition at 673. DOE

did, however, consider both stress corrosion cracking ("SCC") and hydride formation in its consideration of features, events, and processes ("FEP").

With regard to SCC, DOE considered and excluded FEP 2.1.03.02.0B, which addresses stress corrosion cracking of the drip shield, on the basis of low consequence. SAR Table 2.2-3 at 2.2-200. Nevada does not refer to this FEP nor does Nevada present any information to demonstrate that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of this FEP. *See* 10 C.F.R. § 63.114(e). In addition, beyond mere assertion, Nevada has not established that, even if the risk of SCC is not eliminated by stress-relief heat treatment, the performance of the drip shield will be affected. Therefore, the assertion that DOE failed to consider and demonstrate risks of SCC fails to raise a genuine dispute as required by Section 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358.

Similarly, DOE considered and excluded on the basis of low probability FEP 2.1.03.04.0B, which addresses hydride cracking of the drip shield. SAR Table 2.2-3 at 2.2-199. Again, Nevada does not refer to this FEP nor does Nevada challenge DOE's exclusion of this FEP. In addition, Nevada has not established that, even if hydrogen is picked-up during the stress-relief heat treatment, the performance of the drip shield will be adversely affected. Therefore, the assertion that DOE failed to consider and demonstrate risks of hydride formation fails to raise a genuine dispute as required by 10 C.F.R. § 2.309(f)(1)(vi).

In addition, NEV-SAFETY-125 asserts that DOE has not adequately considered the use of thermocouples to monitor metal temperature. NEV Petition at 672. Nevada does not, however, reference or identify a specific deficiency with DOE's probability analysis for improper heat treatment of the drip shield summarized in SAR Section 2.3.6.8.4.3.2.3, and presented in the referenced "Analysis of Mechanisms for Early Waste Package/Drip Shield Failure" ANL-EBS-MD-000076 REV00 at Section 6.4.2 (LSN No. DN2002451287). DOE's probability analysis includes "incorrect monitoring of the heat treatment process includ[ing] improperly installed thermocouples . . . ." *See id.* at 6-58. Therefore, Nevada's assertion that DOE provided insufficient technical detail about the placement and insulation of thermocouples fails to provide sufficient information to show a genuine dispute exists because Nevada did not specifically refer to DOE's analysis of improper heat treatment of the drip shield and did not explain why DOE did not adequately consider the use of thermocouples. *See* 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 673, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

NEV-SAFETY-125 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 673. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R.

§ 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 673-74. Therefore, with respect to this part of the NEV-SAFETY-125 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.6.8.3 and "similar" subsections. NEV Petition at 672. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” (*Oconee* CLI-99-11, 49 NRC, 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons set forth above, NEV-SAFETY-125 should be rejected.

NEV-SAFETY-126 – PROPERTIES OF DISSIMILAR METAL WELD JOINTS BETWEEN GRADE 29 AND GRADE 7 TITANIUM

> SAR Subsection 1.3.4.7.7 and similar subsections describe the drip shield system and refer to SAR Table 1.3.4-5 where it is stated that, for Titanium Grade 7 to Titanium Grade 29 welds, Titanium Grade 28 filler material (ERTi-28) shall be used. There is no reference to an actual demonstration of welding and testing this combination of metals, there is insufficient information in the LA to demonstrate that these welds will behave mechanically as assumed in the TSPA, and in particular, there is a failure to consider that these unknown weld properties will lead to unanticipated locations of weld failures that could lead to early failure of drip shields due to external loads from rockfall.

NEV Petition at 675. Nevada alleges that because the weld metal composition has not been adequately evaluated, the welds cannot be relied on "to behave as anticipated or required or to function in their required role for post-closure performance purposes." *Id.* at 675. Therefore, Nevada contends that DOE has failed to comply with Part 63, in particular Section 63.114(f).

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-126.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-

01, 55 NRC 1 (2002). *See also See Carolina Power & Light Co.* (Shearon Harris Nuclear Plant, Unit 1), LBP-07-11, 65 NRC 41, 58 (2007) (internal citation omitted) (a petitioner cannot simply allege "that some aspect of a license application is 'inadequate'. . . unless it is supported by facts and a reasoned statement").

Nevada contends that use of Titanium Grade 28 filler material "will result in a weld metal composition with mechanical and corrosion properties that are not properly evaluated," demonstrated, and not "considered in analysis of failure due to external loading." NEV Petition at 679. Nevada contends that the welds cannot be relied on for post-closure purposes and therefore, DOE has failed to comply with Section 63.114(f). *See id.*

Section 63.114(f) requires that a technical basis be provided for including or excluding degradation, deterioration, or alteration processes of engineered barriers in the performance assessment. Processes must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the RMEI or radionuclide releases to the accessible environment would be *significantly changed* by there *omission.* 10 C.F.R. § 63.114(f) (emphasis added). Here, Nevada refers to the language of the regulation, but does not allege that processes of degradation, deterioration, or alteration need to be evaluated in detail because resulting exposure or releases *would be significantly changed by their omission* as required by 10 C.F.R. § 63.114(f). *See* NEV Petition at 680. Therefore, Nevada's assertion that failure of welds may result in degradation, which in turn may cause release of radionuclides and consequent radiological impacts to the RMEI, does not demonstrate a genuine dispute exists on a material issue of law or fact because Nevada has failed to provide sufficient information to support this assertion. *See Millstone,* CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 675, does not satisfy

the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *See Fansteel Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (internal citation omitted).

NEV-SAFETY-126 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 680. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

The Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to

different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 680. Therefore, with respect to this part of the NEV-SAFETY-126 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi)

In addition, this contention seeks to raise a dispute with SAR subsection 1.3.4.7.7 and "similar" subsections. NEV Petition at 675. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-126 should not be admitted for failure to comply with 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-127 – HYDROGEN AND ERTI-28 FILLER METAL FOR WELDED JOINTS BETWEEN GRADE 29 AND GRADE 7 TITANIUM

> SAR Subsection 1.3.4.7.7 and similar subsections, which describe the drip shield system, refer to SAR Table 1.3.4-5 where it is stated that, for Titanium Grade 7 to Titanium Grade 29 welds, Titanium Grade 28 filler material (ERTi-28) shall be used, with the objective of reducing the aluminum gradient across the weld as a means to mitigate hydrogen induced delayed cracking issues in these welds, but DOE's failure to include adequate controls on the use of such techniques or to qualify welding procedures and prepare samples to demonstrate that the aluminum gradient concept is truly valid may result in welds that fail to perform as hoped and that are not adequately evaluated for joining the Grade 29 structural members to the Grade 7 Water Diversion Surface (WDS), so such welds cannot be relied upon to behave as anticipated or required for post-closure performance purposes, and could lead to early failure of drip shields.

NEV Petition at 681. Nevada contends that DOE incorrectly assumes that Grade 28 titanium is the "optimum material for use as a filler metal in welds" because it is an intermediate between titanium Grade 7 and 29. *See id.* at 681. Nevada argues that DOE failed to consider "welding techniques needed to optimize the aluminum gradients" and failed to address whether "inadequately controlled welding technique[s] may adversely affect the integrity" of welds and therefore detrimentally impact post-closure safety. *See id.* Therefore, Nevada argues that DOE has failed to comply with Part 63. *See id.* at 682.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-127.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007)

(Contention found not to meet criterion 6 because it did not reference a specific portion of the application). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

Here, Nevada asserts that selection of Grade 28 titanium as filler "will result in a weld metal composition with mechanical and corrosion properties that are not adequately evaluated, nor considered in analysis of failure modes of drip shields under external loading like rock fall" and therefore, cannot be relied on to behave as required in 10 C.F.R. § 63.113. *See* NEV Petition at 688. Specifically, Nevada raises issues regarding corrosion (*id.* at 683-84), stress relief and hydrogen (*id.* at 685-86) and the validity of aluminum gradient in mitigating hydrogen effects (*id.* at 686-87). As discussed below, NEV-SAFETY-127 does not raise a genuine dispute regarding the application on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Nevada asserts that the SAR incorrectly assumes that Titanium Grade 28 is the "optimum material" for filler metal in welds. *See* NEV Petition at 681. Nevada does not, however, reference any section of the SAR stating that DOE selected titanium Grade 28 for a filler metal because it was the "optimum" choice. To the contrary, SAR Subsection 1.3.4.7.7 states that "[t]here are no codes or standards that govern the selection of materials for use in the drip shield component . . . [and] selection . . . is dependent on the mechanical properties and long-term corrosion performance" and structural strength. SAR at 1.3.4-32. In fact, Nevada states that the American Welding Society ("AWS") does not provide "specific guidance for the selection of filler metals" and that "[t]he user must consider the questions of strength and corrosion properties." NEV Petition at 685. As indicated by the above SAR statement, DOE considered strength and corrosion properties when selecting a filler metal; Nevada does not refer to or dispute this portion of the application nor does it provide any

requirement that would require DOE to select the "optimum material." Moreover, Nevada has not defined what "optimum material" means. Therefore, Nevada has failed to show a genuine dispute exists because Nevada's assertion that DOE failed to select the optimum material does not directly controvert the license application and Nevada does not provide sufficient information to support its position that the optimum filler material must be selected. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Similarly, with respect to corrosion, Nevada asserts, without referring to the SAR, that the filler metal was chosen without "consideration given to optimizing composition for performance and dose . . . ." NEV Petition at 683. Again, Nevada does not provide any technical support or requirements that would require DOE to optimize composition. Moreover, Nevada does not refer to nor does it assert that DOE's consideration and treatment of corrosion properties of drip shield materials in SAR Subsection 2.3.6.8 is inappropriate nor does Nevada refer to or challenge DOE's consideration and treatment of weld corrosion in SAR Reference "General Corrosion and Localized Corrosion of the Drip Shield," ANL-EBS-MD-000004 REV 02 AD 01 (Aug.2007), at 6-36 (LSN No. DN2002467884).

In addition, Nevada asserts that the effects of corrosion of ruthenium-enhanced filler metal to weld a palladium-enhanced base metal "has not been demonstrated in significant industrial service . . . ." and that the assumption that these materials are interchangeable for welding has not been demonstrated in industry or the SAR. *See* NEV Petition at 684. Nevada speculates that "there is a risk that the weld metal will become active galvanically and corrode even more rapidly" and that the results of this reaction are not clear under extended exposure. *See id.* Nevada does not, however, point to any regulation that would require this suggested demonstration. Furthermore, with regard to the assertion that the weld metal will become active galvanically and corrode more rapidly, Nevada does not refer to or dispute DOE's statement that "[t]he likelihood of galvanic coupling is minimized by a

design feature . . . ." SAR Subsection 1.3.4.7.7 at 1.3.4-32. Thus, because Nevada has not provided sufficient information to support the assertion that corrosion properties have not been adequately evaluated and should be demonstrated, it fails to raise a genuine dispute regarding a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi).

With respect to stress relief and hydrogen issues, Nevada asserts that it is not clear that "stress relieving will accomplish the objective of reducing residual stresses adjacent to the weld as much as assumed by DOE" because the yield strengths of Grade 29 and Grade 7 titanium are different. *See* NEV Petition at 685. Nevada claims that embrittling hydrides can form in areas of high residual stress. *See id.* Nevada does not however, acknowledge that DOE did consider both hydride cracking and stress corrosion cracking ("SCC") in its FEPs. DOE considered and excluded on the basis of low probability hydride cracking of the drip shield in FEP 2.1.03.04.0B. SAR at 2.2-233. *See also* FEP AMR, ANL-WIS-MD000027, Rev. 00 p. 6-419 to 6-420 (LSN No. DEN001584824). Similarly, DOE considered and excluded stress corrosion cracking of the drip shield on the basis of low consequence in FEP 2.1.03.02.0B. SAR at 2.2-200. *See also* AMR, ANL-WIS-MD000027, Rev. 00 p. 6-419 to 6-397. Pursuant to Section 63.114(e) DOE may exclude FEPs if the exclusion will not significantly change exposure to the RMEI. 10 C.F.R. § 63.114(e). NEV-SAFETY-127 does not present any information that would demonstrate, nor does it argue, that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of these factors. *See id.* Therefore, Nevada's assertion that stress relief and hydrogen issues have not been demonstrated in the SAR fails to raise a genuine dispute because Nevada does not reference those portions of the SAR that discuss these issues, nor does it challenge DOE's analysis as inadequate. *See* 10 C.F.R. § 2.309(f)(1)(vi).

With respect to challenges to the validity of the aluminum gradient in mitigating hydrogen effects, Nevada argues that DOE failed to verify whether the aluminum gradient could be

"significantly affected by welding technique" by comparing samples of materials prepared differently, e.g., buttering versus using an uncontrolled welding sequence. *See* NEV Petition at 687. Like its assertions regarding selection of the optimum metal, Nevada does not reference any requirement that would require DOE to make such comparisons. Because Nevada does not provide sufficient information to support its position that the suggested comparisons are necessary, Nevada has failed to show a genuine dispute exists. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Nevada also asserts that the filler selected by DOE will result in a weld composition that has not been considered in the analysis of failure modes of drip shields under external loading like rock falls and, and therefore it cannot be expected to perform as required for post-closure performance purposes. NEV Petition at 688. The first time rock falls are mentioned in NEV-SAFETY-127 is in this conclusion statement. Nevada has not provided any information to indicate that welds will not perform adequately under external loads like rock falls such that repository performance and dose to the RMEI may be impacted. In addition, Nevada does not refer to or challenge DOE's treatment of drip shields under external loading like rock falls in FEP 2.1.07.01.0A. SAR Table 2.2-5. Thus, Nevada's conclusory statement that the weld filler material has not been considered in the failure modes of drip shields under external loading like rock falls, and therefore welds cannot be expected to perform as required for post-closure performance purposes fails to show a genuine dispute exists. *Millstone*, CLI-01-24, 54 NRC at 358 (internal citation omitted).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 688, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare

assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

NEV-SAFETY-127 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 688. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 688. Therefore, with respect to this part of the NEV-SAFETY-127 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set for the above, NEV-SAFETY-127 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-128 – NUCLEAR CODE AND FABRICATION QUALITY ASSURANCE STANDARDS

> SAR Subsection 1.3.2.7 and similar subsections, and reference document "Drip Shield and Waste Package Emplacement Pallet Design Report, 000-00C-SSE0-00100-000-00B" (08/09/2007), LSN# DN2002459185, Para 6.2.4 at 20, and SAR Table 1.3.2-5 make reference to sections of the ASME Code, various Nuclear Codes and other standards to guide drip shield fabrication that DOE proposes to use but the cited codes and standards do not provide adequate information to evaluate the conceptual design or to specify subsequent detailed design, fabrication, or quality assurance requirements necessary to build drip shields.

NEV Petition at 689. Nevada contends that specifications listed in the SAR "are not complete or sufficiently applicable to guide and limit the design and fabrication of the titanium drip shields . . . ." *Id.* Nevada argues that DOE fails to provide adequate information to evaluate the design and to guide eventual detailed design, fabrication, or quality assurance. *Id.* Thus, Nevada argues that DOE fails to comply with 10 C.F.R. Part 63. *Id.* at 690.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-128.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A contention should be ruled inadmissible if a petitioner "offer[s] no tangible information, no experts, no substantive affidavits," and only "bare assertions and speculation." *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)). Bare assertions, even by an expert, cannot provide a basis to support admission of a contention. *See USEC Inc.* (American Centrifuge

Plant), CLI-06-10, 63 NRC 451, 472 (2006) (internal citation omitted).

To support this contention, Nevada provides affidavits from three experts who attest to the information in paragraph 5. *See* NEV Petition, Attachment 9, Affidavit of Doug F. Hambley; Attachment 14, Affidavit of James A. McMaster; and Attachment 18, Affidavit of Robert A. Cottis.

Here, Nevada asserts that "DOE refers to non-applicable nuclear specifications . . . ." NEV Petition. at 690. Nevada offers alternative welding techniques but does not explain why DOE's specifications are not applicable. Absent support or a reasoned basis, this assertion cannot support admission of this contention. *See USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-Safety-128 fails to provide sufficient information to show that a genuine dispute exists with regard to the applicant or specific portions of the LA "on a material issue of law or fact" as required by 10 C.F.R. § 2.309(f)(1)(vi). The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. *See id; see also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). An "intervenor must do more than submit 'bald or conclusory allegations[s]' of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted).

Here, Nevada asserts that DOE has provided "inadequate specifications" and therefore does not comply with Part 63, specifically section 63.113. *See* NEV Petition at 692. Section 63.113 requires the repository to have multiple barriers including natural barriers and an engineered barrier system, that are designed to work together so that radiological exposure to the RMEI and accessible environment remain within regulatory limits. *See* 10 C.F.R. § 63.113(a)-(c). Nevada does not provide a reasoned basis or any facts to support the assertion that DOE's engineered barrier system is inadequate such that release of radionuclides will exceed regulatory limits. In fact, Nevada does not mention possible impacts of dose to the RMEI or accessible environment anywhere in NEV-SAFETY-128. Therefore, because Nevada has not provided sufficient information to support this assertion regarding noncompliance with section 63.113, NEV-SAFETY-128 does not raise a genuine dispute with regard to a material issue of law or fact as required by section 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, NEV-SAFETY-128 seeks to raise a dispute with SAR Subsection 1.3.2.7 and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. Because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes

of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons set forth above, NEV-SAFETY-128 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-129 – EARLY FAILURE MECHANISMS ASSOCIATED WITH TITANIUM FABRICATION

> SAR Subsection 2.3.6.8.4 and similar subsections, which describe drip shield early failure due to manufacturing and handling defects, consider only a limited range of possible defects associated with titanium fabrication and welding (*e.g.*, improper heat treatment, base metal selection flaws, and improper weld filler material) and fail to include many additional defects that could result from fabrication and could lead to early failure of drip shields.

NEV Petition at 693. As a basis for this contention, Nevada argues that DOE failed to discuss "in the SAR or adequately consider[ ] in assessing the effects of features, events, and processes (FEP)" eighteen different defects associated with titanium fabrication and welding. *See id.* Nevada argues that DOE's assumption "that there will be minimal defects associated with fabrication of the titanium drip shields is not appropriate because DOE fails to address the effect these defects may have on the effectiveness of the drip shields and dose to the reasonably maximally expose individual ("RMEI"). *See id.* at 699. Therefore, Nevada concludes that SAR subsection 2.4.6.8.4 and similar subsections fail to comply with Part 63, in particular Section 63.113. *See id.*

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-129.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). "Bare assertions and speculation" cannot support the admission of a contention. *See Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (internal citation omitted).

To support NEV-SAFETY-129, Nevada provides affidavits of three experts who attest to the information in paragraphs 5 and 6. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 14, Affidavit of James A. McMaster; and Attachment 18, Affidavit of James A Cottis.

Here, Nevada asserts that DOE failed to consider in the SAR or adequately consider in assessing FEPs, eighteen different defects associated with titanium fabrication and welding which could lead to early drip shield failure. *See* NEV Petition at 693. Nevada does not, however, even discuss a number of these alleged inadequacies, beyond listing them in the basis for this contention. For example, Nevada does not specifically discuss titanium cracking due to forming and bending, missing welds, undersized welds, lack of weld penetration, lack of weld fusion, hydrogen induced porosity, high density and tungsten inclusions, hydrogen contamination from stress relief, inconsistent stress relief over the entire structure, or localized contamination due to flame impingement on the structure during stress relief. *See* NEV Petition at 693. Therefore, these alleged deficiencies cannot provide a basis for NEV-SAFETY-129 because Nevada has failed to provide any factual information or reasoned opinion to show why these bases support its contention. *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), LBP-04-15, 60 NRC 81, 89 (2004), (citing *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991)), *aff'd* CLI-04-36, 60 NRC 631 (2004).

In addition, Nevada does not support the assertion that any of the eighteen listed defects could cause early drip shield failure and impact dose to the RMEI. *See Fansteel*, CLI-03-13, 58 NRC at 204-205 (internal citation omitted). Nor does Nevada explain why DOE's treatment of these defects in the FEPs was inadequate. Nevada's assertions regarding DOE's treatment of these defects in the SAR and FEPs, even if made by an expert, cannot support admission of this contention absent a reasoned basis or explanation for these conclusions. *See USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

Nevada challenges DOE's assumption "that there will be minimal defects associated with fabrication of the titanium drip shields, and as a result the LA fails to address the effect these fabrication issues might have on the effectiveness of the drip shields and the dose to the RMEI." NEV Petition at 699. Nevada argues that DOE did not discuss in the SAR or failed to adequately consider in assessing the effects of FEPs, eighteen different defects that could result from fabrication and lead to early drip shield failure. *See id.* at 693. As discussed above under criterion 5, Nevada does not address all eighteen criteria within its contention beyond inclusion in the basis. As set forth below, Nevada fails to satisfy criterion six with respect to the defects its does address within NEV-SAFETY-129.

Here, Nevada asserts that DOE failed to consider a number of manufacturing and fabrication defects, but Nevada does not reference or identify a specific deficiency with the codes and standards applicable to the design and fabrication of the drip shields. *See* SAR Subsection 1.3.4.7; *see also* 1.3.4.7.8 at 1.3.4-32 (stating that applicable drip shield design and fabrication codes and standards are listed in SAR Section 1.3.2, Table 1.3.2-5). For example, Nevada does not explain why application of the codes and standards governing

drip shield design and fabrication in the manner described by DOE may be inadequate to limit the type and amount of surface contamination, weld contamination, weld root contamination, improper filler metal, or base metal flaws. *See* NEV Petition at 693. Similarly, Nevada does not explain why application of the codes and standards governing nondestructive testing and inspection in the manner described by DOE may be inadequate. *See* SAR Subsection 1.3.4.7; Subsection 1.3.2 at Table 1.3.2-5, & Subsection 1.3.4 at Table 1.3.4-5. Rather, Nevada asserts, without support, that nondestructive testing and inspection errors were not adequately considered and that no standardized or universally accepted test for detecting contaminated titanium welds exists and even "very rigorous controls" may not detect contamination. *See* NEV Petition at 693, 697. Therefore, because Nevada has failed to refer to the section in the SAR that discusses codes and standards applicable to drip shield design and fabrication and has not explained why application of these codes and standards as described by DOE may be inadequate, Nevada has failed to satisfy criterion 6. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Similarly, Nevada's assertion that DOE failed to consider manufacturing and fabrication defects that could lead to early drip shield failure does not satisfy criterion 6 because Nevada does not identify any specific inadequacy with DOE's treatment of such defects in SAR Subsection 2.3.6.8.4. *See* NEV Petition at 693. For example, Nevada asserts that DOE failed to adequately consider undetected base metal flaws, including laps and seams and that "[i]mproper hot working can leave undetected laps or seams in the material." *Id.* at 695. DOE addressed this defect in SAR Subsection 2.3.6.8.4.3.2.1. *See* SAR at 2.3.6-82. Nevada does not refer to or identify any deficiencies in this analysis. Furthermore, Nevada does not provide any technical or reasoned basis for why DOE's hot working may be "improper." *See* NEV Petition at 695. Likewise Nevada's assertion that DOE failed to adequately address improper filler metal selection and that "even after careful manufacture," of the welding filler material may still have minor amounts of drawing compound (*see* NEV

Petition at 695, 697), does not raise a genuine dispute regarding a material issue of law or fact. Nevada does not explain why DOE's treatment of this defect in SAR Subsection 2.3.6.8.4.3.2.2 at 2.3.6-82 is inadequate nor does Nevada provide information to show that improper filler metal selection could lead to early failure of the drip shields.

Nevada's assertion that DOE failed to adequately consider surface contamination, surface iron contamination, weld contamination due to oxygen or nitrogen, and weld contamination due to iron or carbon, also does not satisfy criterion 6. *See* NEV Petition at 693. Nevada generally states that "oxygen, nitrogen, iron, carbon, and hydrogen are important properties of titanium metal and titanium welds" (*id.* at 696) and that for, example, surface oxygen contamination can cause "a low ductility surface layer that could impair forming and other fabrication operations, add to weld metal oxygen, and lead to premature equipment failures in service . . . ." *See id*. at 695. Nevada further asserts that the quality of a titanium weld "is dependent on the welder's understating of the contamination problem and instant recognition." *Id.* at 696; *see also id.* at 697 (detection of problems depends on skills and training of welder). Nevada does not, however, explain why DOE's consideration of the possibility for contamination during all stages of drip shield fabrication and conclusion that contamination is "not significant" for drip shield performance is inadequate. *See* SAR Subsection at 2.3.6.8.4.3.1 at 2.3.6-81.

Also, Nevada argues that "[s]tress relieving is not capable of eliminating flaws" and therefore weld flaws may render welds susceptible to stress corrosion cracking ("SCC"). NEV Petition at 698 (quoting SAR Subsection 2.3.6.8.4.3.1). Nevada does not, however, provide any information to indicate that DOE's screening of SCC based on low consequence from further consideration was improper. *See* SAR Section 2.2 at Table 2.2-3, 2.2-200 (FEP 2.1.03.02.0B). NEV-SAFETY-129 does not present information that would demonstrate, nor does it argue, that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be

significantly changed" by the omission of this FEP. *See* 10 C.F.R. § 63.114. Beyond mere assertion, Nevada has not shown that potential SCC may affect performance of the drip shield.

In addition to failing to identify an inadequacy in DOE's consideration of manufacturing defects in SAR Subsection 2.3.6.8.4 and with the applicable codes and standards as discussed above, Nevada does not explain or show why DOE's treatment of the risks associated with fabrication, installation and performance in the early failure scenario of the TSPA is inadequate. *See* SAR Subsection 2.3.6.8.4; Subsection 2.2, Table 2.2-5, at 2.2-234, FEP 2.1.03.08.0B (Early failure of drip shields). Nor has Nevada identified any defects that DOE failed to consider in the FEPs, but should have based on probability of occurrence. *See* 10 C.F.R. §§ 63.342, 63.114(d). Thus, Nevada has not shown that DOE failed to consider or did not adequately consider any handling defects that would impact drip shield performance such that dose to the RMEI would exceed regulatory limits. *See* NEV Petition at 699. Therefore, Nevada's assertion that DOE failed to consider or did not adequately consider manufacturing and fabrication defects that could lead to early drip shield failure does not show a genuine dispute exists on a material issue of law or fact because Nevada has not provided sufficient information to support this assertion. *See* 10 C.F.R. § 2.309(f)(1)(vi); *Millstone,* CLI-01-24, 54 NRC at 358 (internal citation omitted).

Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 699, also does not satisfy the showing required to meet the requirements of 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203.

NEV-SAFETY-129 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 699. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 699. Therefore, with respect to this part of the NEV-SAFETY-129 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

Finally, this contention seeks to raise a dispute with SAR Subsection 2.3.6.8.4 and "similar" subsections. NEV Petition at 693. To the extent that Nevada seeks to raise an

issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-129 should not be admitted for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-130 – DRIP SHIELD EMPLACEMENT, PLAN, EQUIPMENT, AND SCHEDULE

> SAR Subsection 1.3.4 at 1.3.4-1 identifies two engineered components within the repository drift that are important to waste isolation – the waste package and the drip shield – and the license application relies on installation of drip shields to prevent exceeding the allowable dose to the RMEI. The drip shields are a new technology that has never been designed in detail, prototyped, fabricated, or installed in any actual application in order to develop a basis for predicted performance or to demonstrate that drip shields can be installed and perform as assumed in the TSPA; therefore, the contribution of the drip shields in the predicted performance of the repository should be ignored in the TSPA or, at a minimum, the no drip shield scenario should be considered as an alternative conceptual model and propagated through the assessment.

NEV Petition at 701. Nevada asserts that installation of the drip shields cannot be assumed because DOE "failed to identify the features, events and processes that can prevent drip shield installation" and the relevant design features. *Id.* Therefore, Nevada argues that DOE has failed to comply with Part 63. *Id.* at 702.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-130.

10 C.F.R. § 2.309(f)(1)(iii) – Within the Scope of the Proceeding

Nevada claims drip shield installation cannot be assumed due to a number of factors, including future availability of material resources, competing uses of materials, and available government funding may impact drip shield fabrication do not raise issues within the scope of this proceeding. *See* NEV Petition at 707-708. The Commission stated in the Notice of Hearing that the issues to be considered in this hearing "are whether the application satisfies the applicable safety, security, and technical standards of the AEA and NWPA and the NRC's standards in 10 CFR Part 63 for a construction authorization for a high-level waste geologic repository . . . ." Notice of Hearing and Opportunity to Petition for Leave to

Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain, 73 Fed. Reg. 63,029 (Oct. 22, 2008). Nevada's assertions regarding future budget constraints and material resource availability are outside the scope of this proceeding.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada must demonstrate that the issue raised in its contention is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. *Id.; see PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007); *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-07-03, 65 NRC 237, 253 (2007).

Here, Nevada fails to provide any analysis or reference to support its proposition that the availability of material resources, competing uses of materials and funding for drip shield fabrication are material issues. Nevada simply alleges that DOE has ignored strain on the material supply industry, has not considered competing uses of raw materials, and has not demonstrated how "it will convince Congress to allocate funds" for drips shields. See NEV Petition at 707-708. This future speculation is not material to the findings the NRC must make to support the action involved in this proceeding, i.e. to grant or deny the construction authorization based on the license application submitted by DOE. See 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A contention should be ruled inadmissible if

a petitioner "offer[s] no tangible information, no experts, no substantive affidavits," and only "bare assertions and speculation." *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

To support NEV-SAFETY-130, three experts attest to the information in paragraphs 5 and 6. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 5, Affidavit of Allen Messenger; and Attachment 14, Affidavit of James A. McMaster. As discussed below by subsection, Nevada makes a number of unsupported assertions.

General

First, in the general subsection, Nevada asserts that DOE's assumption "that drip shield emplacement will work as envisioned" is "not credible given the lack of information provided in the LA and the absence of any form of prototype construction, mock-up, or demonstration." NEV Petition at 703. As discussed below, Nevada does not provide sufficient support for this assertion.

Drip Shield Design

In this subsection, Nevada generally asserts that DOE's drip shield design is not clear and that "DOE has not provided adequate specification or drawing to describe what requirements the fabricator of the drip shields will necessarily meet . . . ." *See* NEV Petition at 704. Nevada, however, does not explain why DOE's designs are not adequate. *See Fansteel*, CLI-03-13, 58 NRC at 203. Thus, Nevada and its experts fail to "point to an actual material deficiency in the application" and "provid[e] a reasoned basis or explanation for" the conclusion that the application is insufficient. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

Drip Shield Fabrication

Nevada asserts that DOE has failed to present "a credible plan for how it will organize and manage the resources necessary to fabricate" drip shields and that "key manufacturing processes . . . have not been demonstrated or qualified." NEV Petition at 705. But, Nevada does not cite to any regulatory requirement or factual support to indicate that a plan to organize and manage resources for fabrication is required nor does it explain how today's titanium subcontractor resources may impede future drip shield installation. Nevada's speculation cannot support the admission of this contention. *See Fansteel*, CLI-03-13, 58 NRC at 203.

In addition, Nevada asserts that "key manufacturing processes" have not been demonstrated or qualified. Nevada provides only one example of a "key manufacturing process" – welding Grade 28 and Grade 27. NEV Petition at 705. With respect to welding, Nevada states that "[t]itanium welding is widely understood to require special procedures, training, and process controls . . . ." *Id.* Nevada does not discuss these special procedures nor does it provide examples of any other "key manufacturing processes." Bare assertions regarding "key manufacturing procedures" cannot provide support for Nevada's contention asserting that drip shields should be ignored in the TSPA and that the no drip shield scenario should be considered (*see* NEV Petition at 701). *See Fansteel*, CLI-03-13, 58 NRC at 203.

Gantry Design

Here, Nevada alleges that "DOE has not designed the drip shield placement system (gantry, sensors, etc.) and has not shown that it can be operated in the repository under normal and off-normal conditions, nor has DOE provided operational procedures for the placement system. NEV Petition at 705. Nevada asserts that "DOE has not provided the minimum level of design detail necessary to demonstrate" that the system will perform as assumed in the TSPA. *See id.* Nevada further states that if the gantry system fails to perform as assumed, then the individual and groundwater protection standards may be

exceeded. *Id.*

Nevada does not provide factual support for these assertions. Furthermore, Nevada's experts do not explain how or why the TSPA is unreliable due to the lack of gantry design information or how the individual and groundwater standards may be exceeded. Nevada cannot rely on assertions alleging non-compliance with dose standards and invalidity of the TSPA, without providing supporting information. *See Fansteel*, CLI-03-13, 58 NRC at 203. Even statements by an expert must be supported by a reasoned basis or explanation. *See USEC,* CLI-06-10, 63 NRC at 472.

Emplacement Procedures

Here, Nevada asserts that DOE has failed to consider FEPs that may occur. *See* NEV Petition at 707. Nevada does not, however, explain what "other FEPs" may occur that have not been assessed by DOE. *See* NEV Petition at 707. Nor does Nevada provide any factual information to indicate that consideration of these unspecified FEPs is required based on probability of occurrence. *See* 10 C.F.R. §§ 63.342, 63.114(d). Absent factual support or a reasoned expert opinion, this assertion cannot provide support for this contention. *See USEC,* CLI-06-10, 63 NRC at 472.

Material Resources

Nevada's discussion regarding material resources is composed of two sentences, stating that "DOE has ignored the strain on the material supply industry" and that "[a]ll these irreplaceable materials are placed out of man's use for the foreseeable future." NEV Petition at 707. Nevada fails to provide any factual information to support these assertions and it has not explained how this assertion supports its contention that the drip shields should be ignored in the TSPA. *See Fansteel*, CLI-03-13, 58 NRC at 203.

Drift Deterioration/Collapse

Nevada asserts that DOE has assumed that no anticipated or unanticipated events will occur that may hinder or prevent placement of drip shields or that there may be operator

errors during emplacement. NEV Petition at 708. Furthermore, Nevada states that DOE has not provided an "alternative plan for conditions where deterioration has progressed to the point that . . . the original drip shield emplacement plan is unworkable." *Id.* at 709. To support assertions regarding drift deterioration and collapse, Nevada refers to NEV-SAFETY-123, -136 and -173. Nevada does not, however, discuss these contentions nor does it offer any support or a reasoned opinion to explain why DOE's plan to install drip shields after a several decades, is problematic. Nevada's speculation regarding events that may happen do not provide the support required by Section 2.309(f)(1)(v). Moreover, as discussed in the Staff's responses to NEV-SAFETY-123, -136, and -173, Nevada has not provided sufficient support for these contentions and/or has not raised a genuine dispute regarding a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). As discussed below, NEV-SAFETY-130 fails to provide sufficient information to show that a genuine dispute exists with regard to the application.

Here, Nevada asserts that DOE should demonstrate, with prototypes or a mock-up, how the drip shield placement system (gantry, sensors, etc.) will operate and that emplacement

should be practiced and begin shortly after placement of the waste. *See* NEV Petition at 704, 705, 706. Nevada argues that DOE must make these demonstrations because drip shield emplacement is critical and has not been built or evaluated before. NEV Petition at 705. Nevada has failed to demonstrate a genuine dispute because Nevada has not pointed to any regulatory requirement that would require these demonstrations. *See Millstone*, CLI-01-24, 54 NRC at 358.

Nevada also alleges that "DOE has not conducted a credible analysis or identified the feature[s], events or processes that can or will hinder or prevent placement of drip shields . . . ." NEV Petition at 706. As an example, Nevada states DOE concluded that errors that prevent drip shield installation "will not exist at the time of closure because such errors are excluded by regulation (FEP: 1.1.03.01.0A)." *Id.* Nevada does not, however, challenge exclusion of this FEP nor does it present any information that would demonstrate that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of this FEP. *See* 10 C.F.R. § 63.114(e). Nevada further asserts that DOE failed to identify "the types of Category 1 accidents that could impact waste package placement." NEV Petition at 706. Category 1 sequences are, however, part of the pre-closure performance objectives not post-closure analyses. *Compare* 10 C.F.R. § 63.111(b)(1) *with* 10 C.F.R. § 63.114(e). In addition, Nevada states that DOE failed to consider other FEPs. *See* NEV Petition at 707. As discussed above under criterion 5, Nevada does not identify any specific FEPs that should have been considered based on probability of occurrence, but were not. *See* 10 C.F.R. §§ 63.342, 63.114(d). Therefore, Nevada has failed to show a genuine dispute of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Furthermore, as discussed above, Nevada has not provided sufficient information to show why DOE's discussion of drip shield design, drip shield fabrication, and gantry design in SAR Subsection 1.3.4.7.2 is inadequate. Nevada cannot simply submit conclusory

assertions of inadequacies to satisfy criterion 6, Nevada must refer to specific portions of the application and explain its opposing position. *See* 10 C.F.R. § 2.309(f)(1)(vi). *See also Millstone*, CLI-01-24, 54 NRC at 358. Moreover, because Nevada has not provided any information to show why DOE's designs are inadequate or that DOE improperly considered drip shield performance in the TSPA, Nevada has not supported its assertion that DOE has failed to comply with Section 63.113 (*see* NEV Petition at 709). *See Millstone*, CLI-01-24, 54 NRC at 358.

In addition, Nevada's conclusion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 709, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel*, CLI-03-13, 58 NRC at 203.

NEV-SAFETY-130 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 709. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need “many thousands of possible changes.” Section 2.309(f)(1)(vi) requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999). Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 709-710. Therefore, with respect to this part of the NEV-SAFETY-130 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

Finally, NEV-SAFETY-130 seeks to raise a dispute with SAR subsections 1.3.4.7.2 and 1.3.6.1, and “similar subsections” and “other places in the LA.” NEV Petition at 703, 709. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section or “other places” of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and

applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-130 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(iii), (iv), (v), and (iv).

NEV-SAFETY-131 - ROCK DEBRIS REMOVAL

> SAR Subsection 1.3.4.4 and similar subsections, which discuss the design and performance of the waste emplacement areas of the repository, fail to include sufficient detail to demonstrate that consideration has been given to the potential need to remove rock debris from around the waste packages prior to removal of the waste packages, if necessary, and/or installation of the drip shields, and as a result, the TSPA-LA assumptions relating to drip shield emplacement and effectiveness of the EBS are unfounded.

NEV Petition at 712. In this contention, Nevada asserts that DOE did not adequately describe how rock debris that may accumulate around waste packages would be removed to permit waste package recovery if needed for drift repair or drip shield installation. *Id.*

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309 (f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co. et al.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references " shall "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Nevada asserts that DOE has failed "to include sufficient detail to demonstrate that consideration has been given to the potential need to remove rock debris" and therefore "the TSPA-LA assumptions relating to drip shield emplacement and effectiveness of the EBS are unfounded." *See* NEV Petition at 713-14. However, Nevada has not offered any documents, facts, or bases for its experts' opinions to support its claim. Nevada has proffered the support of three experts who adopt portions of the contention, but neither the affidavits not the adopted paragraphs offer any basis for their opinions. *See* NEV Petition, Attachment 3, Affidavit of Michael Thorne ¶ 2; Attachment 5, Affidavit of Allen Messenger ¶ 2; and Attachment 14, Affidavit of James McMaster ¶ 2. NEV-SAFETY-131 fails to present any supporting evidence that DOE's lack of "sufficient detail" about rock debris removal from around the waste packages makes the TSPA-LA assumptions relating to drip shield emplacement and effectiveness of the EBS unfounded. *See id.* at 712. Nevada first assumes that "[p]resumably, the need to repair or replace a component of the ground support system would be triggered by a significant roof fall, which suggests that, at a minimum, the waste package located immediately below . . .would be covered in debris." *Id.* at 713. Nevada does not provide any basis for whether a significant roof fall is an event sequence that DOE must consider. Further, Nevada does not discuss or refute the off-normal conditions that DOE does consider in its LA, such as those related to waste package recovery, SAR Section 1.3.4.8.2.2 at 1.3.4-36 or final inspection of waste packages before closure including damaged waste packages, SAR Section 1.3.6.1.1 at 1.3.6-3. Second, Nevada presumes that DOE's statement at SAR Section 1.3.4.4.2 at 1.3.4-15 that " '[b]enefits of repairs and replacements would be weighed against potential radiological exposures and other operational concerns specific to the situation'," "implies that some failures of components of the ground support system may not be addressed, which further suggests that minor rockfalls will be left in place." NEV Petition at 714. Nevada offers no basis to link these presumptions to its conclusion that DOE would not repair damage due to

rockfalls, or how explain these “minor rockfalls” would impede installation of the drip shields. Therefore, NEV-SAFETY-131 has failed to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-131 fails to raise a genuine dispute with SAR subsections 1.3.4.4 and “similar subsections” and therefore fails to meet 10 C.F.R. § 2.309(f)(1)(vi). Section 2.309(f)(1)(vi) requires that a contention provide “sufficient information to show that a genuine dispute exists on a material issue of law or fact.” This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Nevada alleges that DOE “fail[s] to include sufficient detail” on rock debris removal related to the design and performance of the waste emplacement areas of the repository, but, Nevada does not explain how an allegedly insufficient description of rock debris removal fails to meet the regulatory requirements related to drip shields and the engineered barrier system. *See* NEV Petition at 712-13. Even though Nevada asserts that DOE’s level of detail is insufficient to demonstrate that consideration has been given to rock debris removal and fails to meet 10 C.F.R. §§ 63.21(c)(9); 63.113; and 63.114, these cited regulations do not require a specific level of detail. Nor has Nevada shown that those descriptions that DOE does give in the LA fail to meet the terms of the regulations. Therefore, Nevada fails to provide “sufficient information to show a genuine dispute exists on a material issue of law or fact,” and fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, NEV-SAFETY-131 is inadmissible.

For all of the foregoing reasons, NEV-SAFETY-131 should be rejected.

NEV-SAFETY-132 - TEV DESCRIPTION

> SAR Subsection 1.3.3.5.1.1 and similar subsections, which identify the Transport and Emplacement Vehicle (TEV) as the crane-rail-based transport assembly that moves waste packages on emplacement pallets from surface facilities to the emplacement drifts, fail to include sufficient detail to determine whether the TEV will fulfill the requirements that the TSPA-LA places on it, and as a result, the TSPA-LA assumptions relating to waste package emplacement and effectiveness of the engineered barrier system are unfounded.

NEV Petition at 716. In this contention, Nevada asserts that DOE did not adequately describe the design details of the TEV and that this lack of design detail has an impact on the evaluation of post-closure safety. *Id.* at 716, 718.

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309 (f)(1)(iv), (v), and (vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada has failed to demonstrate that the issue raised is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 &3), CLI-99-11, 49 NRC 325 at 333-34 (quoting Final Rule, Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). *See also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); See *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993). In this proceeding, the finding the Staff must make is whether "there is reasonable assurance

that . . . radioactive materials . . . can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and . . . there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, the NRC must determine whether 10 C.F.R. §§ 63.31(a)(3)(i) and 63.31(a)(3)(ii) have been met. Here, Nevada fails to provide any analysis or references that demonstrate that DOE's allegedly insufficient TEV description would make a difference with regard to whether 10 C.F.R. §§ 63.31(a)(3)(i) and 63.31(a)(3)(ii) have been met. Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(iv).

Here, Nevada alleges that DOE's insufficient description of the TEV would lead to a violation of various postclosure requirements: 10 CFR §§ 63.21(c)(9); 63.113; and 63.114. *See* NEV Petition at 716-17. Although the issue raised in NEV-SAFETY-132 is related to preclosure (i.e., the Transport and Emplacement Vehicle and its relation to waste package emplacement and effectiveness of the EBS) the regulatory requirements upon which Nevada cites to raise a material issue are all postclosure requirements. Even though Nevada asserts that insufficient level of detail of the TEV fails to meet the cited regulations, none of those regulations require any specific level of detail. As discussed below, Nevada fails to show that the information DOE does provide is inadequate and does not meet the regulatory requirements. Therefore, this contention fails to identify any regulations that would make this contention a material issue. Accordingly, NEV-SAFETY-132 is not admissible pursuant to 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to

support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co. et al.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" shall "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Nevada has not offered sufficient documents, facts, or bases for its experts' opinions to support its claim. *See* NEV Petition at 717-18. Nevada has proffered the support of two experts who adopt portions of the contention, but neither the affidavits not the adopted paragraphs offer any basis for their opinions. *See id.*, Attachment 9, Affidavit of Doug Hambley ¶ 2; Attachment 20, Affidavit of Steven A. Frishman ¶ 2. Nevada fails to present any supporting evidence that DOE's TEV description "lacks sufficient detail" to determine whether it will meet the TSPA-LA requirements. *See id.* at 717. Nevada assumes that based on DOE's statement that " '[c]odes and standards have been evaluated and design requirements and testing specifications are being developed,' " *Id.* citing SAR Section 1.3.3 at 30, that there is "no engineering design for the TEV." *See id.* at 717. Nevada makes this assumption without a discussion of what designs are offered in the LA. Further, nothing is offered to support Nevada's speculations about the alleged "critical impacts" of the "lack of design information." *See id.* at 718. For instance, Nevada assumes that the lack of a TEV design means that DOE cannot meet the "precise emplacement geometry" requirement. Nevada asserts that "precise geometry" of waste package emplacement is required for the evaluation of postclosure safety, but does not offer an explanation or supporting evidence of what "precise emplacement" entails. Nevada has essentially provided only a notice-pleading, devoid of any supporting information beyond the general claim of an "inaccurate

assessment," which is insufficient for admission. *See Fansteel, Inc.*, CLI-03-13, 58 NRC at 203. Therefore, Nevada has failed to meet 10 C.F.R. § 2.309(v) and the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-132 fails to raise a genuine dispute with SAR subsections 1.3.3.5.1.1 and "similar subsections" and therefore fails to meet 10 C.F.R. § 2.309(f)(1)(vi). Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007). Further, in a contention alleging an omission, if the contention does not "identify specific additional information that the petitioner alleges was improperly omitted," it "must be dismissed." *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), *review declined*, CLI-94-2, 39 NRC 91 (1994).

Here, Nevada alleges that DOE "fail[s] to include sufficient detail to determine whether the TEV will fulfill the requirements that the TSPA-LA places on it," NEV Petition at 716, but Nevada does not discuss or refute the several pages of TEV design information DOE offers at SAR 1.3.3.5.1.1. *Id.* at 717. Similarly, Nevada does not identify specific additional information about the TEV design were improperly omitted. Moreover, Nevada does not explain why DOE's description, however complete or incomplete, does not meet the regulatory requirements of Part 63. *See id.* Nevada has therefore not meet its burden under 10 C.F.R. § 2.309(vi) and the contention is not admissible.

For all of the foregoing reasons, NEV-SAFETY-132 should not be admitted.

NEV-SAFETY-133 - DRIP SHIELD GANTRY DESCRIPTION

> SAR Subsection 1.3.4.7 and similar subsections, which identify the Drip Shield Gantry as the crane-rail-based transport assembly that moves the drip shields from surface facilities to the emplacement drifts and into position covering the waste packages, fail to include sufficient detail to determine whether the Drip Shield Gantry will fulfill the requirements that the TSPA-LA places on it, and as a result, the TSPA-LA assumptions relating to drip shield emplacement and effectiveness of the engineered barrier system are unfounded.

NEV Petition at 720. In this contention, Nevada asserts that DOE did not provide "sufficient detail to determine whether the Drip Shield Gantry will fulfill the requirements that the TSPA-LA places on it, and as a result, the TSPA-LA assumptions relating to drip shield emplacement and effectiveness of the engineered barrier system are unfounded." *Id.*

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309 (f)(1)(iv), (v), and (vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada has failed to demonstrate that the issue raised is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp*. (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 325 at 333-34 (quoting Final Rule, Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). *See also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); See *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993). In

this proceeding, the finding the Staff must make is whether "there is reasonable assurance that . . . radioactive materials . . . can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and . . . there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, the NRC must determine whether 10 C.F.R. §§ 63.31(a)(3)(i) and 63.31(a)(3)(ii) have been met. Here, Nevada fails to provide any analysis or references that shows that DOE's allegedly insufficient Drip Shield Gantry description would make a difference with regard to whether 10 C.F.R. §§ 63.31(a)(3)(i) and 63.31(a)(3)(ii) have been met. Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(iv).

Nevada alleges that DOE's insufficient description of the Drip Shield Gantry would lead to the violation of various regulatory requirements: 10 CFR §§ 63.21(c)(9); 63.113; and 63.114. *See* NEV Petition at 720-21. Although the issue raised in NEV-SAFETY-133 is related to preclosure (i.e., Drip Shield Gantry description) the regulatory requirements upon which Nevada cites to raise a material issue are all postclosure requirements. Further, none of those regulations require any specific level of detail, and as discussed below, Nevada fails to show that the information DOE does provide is inadequate. Therefore, this contention fails to identify any regulations that would make this contention a material issue. Accordingly, NEV-SAFETY-133 is not admissible pursuant to 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention

adequately. *See Arizona Public Service Co. et al.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" shall "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (internal citation omitted). Finally, a contention supported by "bare assertions and speculation" is inadmissible. *See id.*

Nevada has not offered sufficient documents, facts, or bases for its experts' opinions to support its claim. *See* NEV Petition at 721-22. Nevada proffers the support of two experts who adopt portions of the contention, but neither the affidavits nor the adopted paragraphs offer any basis for their opinions. *See* NEV Petition, Attachment 9, Affidavit of Doug Hambley ¶ 2; Attachment 20, Affidavit of Steven A. Frishman ¶ 2. Nevada asserts that the Drip Shield Gantry design lacks information and this lack of information will make it "not possible to have any confidence that the precise emplacement geometry required for the drip shields can be achieved." NEV Petition at 721-22. However, Nevada bases this assertion on the assumption that since "the Drip Shield component of the EBS is described", as a "'unique component' for which 'there are no established industry practices for its design' the Drip Shield Gantry used to transport the drip shields must necessarily also be unique. " NEV Petition at 721, citing SAR Subsection 1.3.4.7 at 1.3.4-31. Nevada does not suggest what level of design detail for the Drip Shield Gantry would be "sufficient", or explain how the design detail DOE provided does not meet the regulatory requirements. Therefore, Nevada's allegations of the impacts on post-closure safety due to a "lack of design information" amount to "bare assertions and speculation." *See Fansteel*, CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-133 fails to raise a genuine dispute with SAR subsections 1.3.4.7 "and similar subsections" and therefore fails to meet 10 C.F.R. § 2.309(f)(1)(vi). Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007).

Nevada alleges that SAR subsections 1.3.4.7 "and similar subsections" "fail to include sufficient detail" of the Drip Shield Gantry. NEV Petition at 722. Nevada does not, however, explain how DOE's Drip Shield Gantry designs do not meet the regulatory requirements of Part 63. Nevada does not address at any length the design detail DOE provided in the LA, but merely quotes the LA as stating that the Drip Shield is a "unique component" of the EBS. Accordingly, Nevada fails to raise a genuine dispute with the applicant on a material issue of law or fact. Therefore, NEV-SAFETY-133 fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and must not be admitted. *See id*.

For all of the foregoing reasons, NEV-SAFETY-133 is inadmissible.

NEV-SAFETY-134 - RETRIEVAL OR ALTERNATE STORAGE DESCRIPTION

> SAR Subsection 1.11.1 and similar subsections, which discuss the approach to retrieval of waste packages from the repository, fail to consider that rockfall debris, breached waste packages and other "off-normal" conditions can be reasonably expected to be encountered in the emplacement drifts, such that retrieval is not simply a reversal of the emplacement process and may require development of specialized equipment.

NEV Petition at 723. In this contention, Nevada asserts that DOE does not adequately consider certain "off-normal conditions" and therefore the LA "does not contain a sufficient description of plans for retrieval and alternate storage." NEV Petition at 724-25.

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. § 2.309 (f)(1)(iv)-(vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada has failed to demonstrate that the *issue raised* is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp. (*Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)); *See also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993). In this proceeding, the finding the Staff must make is whether "there is reasonable assurance that . . . radioactive materials . . . can be received and possessed in a geologic repository

operations area of the design proposed without unreasonable risk to the health and safety of the public; and . . . there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, the NRC must determine whether 10 C.F.R. § 63.31(a)(3)(i) and (ii) have been met. Here, Nevada fails to provide any analysis or reference that supports its proposition that DOE's consideration of certain "off-normal conditions" would make a difference with regard to a finding that 10 C.F.R. § 63.31(a)(3)(i) and (ii) have been met. Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(iv).

Nevada claims that DOE has given "little consideration" to "certain 'off-normal conditions'", thereby rendering DOE's description of its waste retrieval plans inadequate, in violation of 10 C.F.R. §§ 63.21(c)(7) and 63.111(e)(1). NEV Petition at 723. Nevada claims that DOE has not given enough consideration to these enumerated conditions. However, 10 C.F.R. § 63.21(c)(7) only requires that DOE provide a description of plans for retrieval and 10 C.F.R. § 63.111(e)(1), requires only that the repository is to designed to preserve the option of waste retrieval on a "reasonable schedule." In publishing the final rule for 10 C.F.R. Part 63, the Commission addressed the intent and details expected in the retrieval plans under 10 C.F.R. § 63.111(e): "The feasibility and reasonableness of DOE's retrieval plans will be reviewed by the NRC staff at the time of the license application submittal. However, the Commission does not envision that DOE will need to build full-scale prototypes of its retrieval systems to demonstrate that its retrieval plans are practicable at the time of construction authorization. Rather, DOE needs to design (and build) the repository in such a way that the retrieval option is not rendered impractical or impossible." Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,743 (Nov. 2, 2001). Nevada fails to show how the deficiencies it claims are in DOE's description of a retrieval plan would render it inadequate under these regulations.

Nevada has not established that this contention "embodies the notion that an alleged error or deficiency regarding a proposed licensing action" that is material to the findings the NRC must make. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179-80 (1998). Consequently, this contention fails to raise a material issue and is therefore not admissible pursuant to 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450,455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Finally, a contention supported by "bare assertions and speculation" is inadmissible. *See id.* (internal citation omitted).

Here, Nevada has not offered any documents, facts, or bases for its experts' opinions to support its claim. *See* NEV Petition at 724-25. Nevada has proffered the support of two experts who adopt portions of the contention, but neither the affidavits nor the adopted paragraphs offer any basis for their opinions. *See* NEV Petition, Attachment 9, Affidavit of Doug Hambley ¶ 2; Attachment 20, Affidavit of Steven A. Frishman ¶ 2. Nevada argues that because DOE does not consider adequately certain conditions under which retrieval might occur, DOE's description of its waste retrieval plan is insufficient. NEV Petition at 723.

Nevada has not supported its assertion that DOE's description of the retrieval plan is inadequate because DOE has given only "little consideration" to these "off-normal conditions." NEV Petition at 724. Nevada cites the SAR at 1.11-7 where DOE recognized that

> derailment of the TEV; waste package drop; damage to the TEV and by impacts; and impact between the TEV and facility structures, equipment, or objects could occur, and that [t]hese same or derivative events might be encountered during normal emplacement operations, so lessons learned during emplacement operations will be documented in retrieval plans and applied in implementing recovery actions during retrieval.

NEV Petition at 724. From the cited SAR section above, it is noted that DOE does in fact give consideration to several hazardous events and other "derivative events." Nevada makes no attempt to show that even if DOE did not consider the "off-normal conditions" resulting from hazardous events Nevada enumerated (i.e., "rockfall debris, misaligned waste packages, or weakened or breached waste packages"), NEV Petition at 724, that these conditions would be any more severe or hazardous, or have a materially different effect on the analysis, than those DOE did consider. Similarly, Nevada provided no supported, reasoned basis to conclude that the level or type of consideration given to hazardous events renders DOE's retrieval plans insufficient. The Board and other parties should not be forced to search through Nevada's pleadings and other materials to find information to support Nevada's bare assertions. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 457 (2006). Therefore, NEV-SAFETY-134 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not

reference a specific portion of the application). The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. *See id.* An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

As noted above, Nevada argued that DOE's retrieval plan lacks the requisite details. However, Nevada does not explain why, given the requirements of 10 C.F.R. §§ 63.111(e)(1) or 63.21(c)(7) , such detail are necessary. Nevada simply states a concern that DOE may or may not have considered certain "off-normal conditions" to the same degree that it did other hazards in designing a waste retrieval plan. These conclusory assertions do not meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and therefore NEV-SAFETY-134 should be rejected.

Furthermore, NEV-SAFETY-134 seeks to raise a dispute with SAR subsections 1.11.1 and "similar subsections." To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and

intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.,*(Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For all of the foregoing reasons, NEV-SAFETY-134 is inadmissible.

NEV-SAFETY-135 - THE VENTILATION DOORS AT THE ENTRY TO THE EMPLACEMENT DRIFTS

> SAR Subsection 1.3.5.1.3.3 and similar subsections, which describe the ventilation doors and associated airflow regulators intended to isolated the emplacement drifts from the access drifts and minimize leakage of radiation into the latter drifts during the waste emplacement process, fail to provide sufficient detail to determine whether the doors will fulfill the requirements that the LA places on them and as a result, the LA assumptions relating to the isolation of the emplacement drifts are unfounded.

NEV Petition at 726. In this contention, Nevada asserts that the LA lacks sufficient detail regarding the ventilation door and associated airflow regulator design to ensure that the doors will provide an airtight seal to minimize the leakage of radiation from the emplacement drifts. *Id.*

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. § 2.309 (f)(1)(iv)-(vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada has failed to demonstrate that the *issue raised* is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp. (*Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)); s*ee also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993). In this

proceeding, the finding the Staff must make is whether "there is reasonable assurance that . . . radioactive materials . . . can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and . . . there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, the NRC must determine whether 10 C.F.R. § 63.31(a)(3)(i) and (ii) have been met. Here, Nevada fails to provide any analysis or references that prove that DOE's allegedly insufficient description of the ventilation doors and associated airflow regulators would make a difference with regard to whether 10 C.F.R. § 63.31(a)(3)(i) and (ii) have been met. Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(iv).

Nevada alleges that DOE's insufficient description of the ventilation doors and associated airflow regulators lead to a violation of various regulatory requirements: 10 CFR §§ 63.21(c)(9); 63.113; and 63.114(a). *See* NEV Petition at 726-27. Although the issue raised in NEV-SAFETY-135 is related to preclosure (i.e., operation of the ventilation doors and associated airflow regulators "during the waste emplacement process", NEV Petition at 726), the regulatory requirements upon which Nevada relies to raise a material issue are all postclosure requirements. Nevada does not explain how its alleged concerns about the ventilation doors will lead to a violation of any of these postclosure requirements. Therefore, this contention fails to identify regulations any regulations that would make this contention a material issue. Accordingly, NEV-SAFETY-135 is not admissible pursuant to 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to

support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450,455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Finally, a contention supported by "bare assertions and speculation" is inadmissible. *See id.* (internal citation omitted).

Here, Nevada has not offered any documents, facts, or bases for its experts' opinions to support its claim. *See* NEV Petition at 727-28. Nevada claims that not enough detail is provided in the LA regarding the ventilation doors but Nevada, however, fails to support its assertion that the ventilation doors, as described in the LA, will not be able to perform their intended function. *See id.* Nevada has proffered the support of two experts who adopt portions of the contention, but neither the affidavits nor the adopted paragraphs offer any basis for their opinions. *See* NEV Petition, Attachment 9, Affidavit of Doug Hambley ¶ 2; Attachment 20, Affidavit of Steven A. Frishman ¶ 2. Nevada asserts that the LA lacks sufficient detail regarding the ventilation door and associated airflow regulator design to ensure that the doors will provide an airtight seal to minimize the leakage of radiation from the emplacement drifts. NEV Petition at 726. Nevada identifies several "problems" with DOE's description of the ventilation doors and associated airflow regulators, but provides no support for these identified "problems." For instance, Nevada claims that "[t]here is no assurance that the material for these seals is stable at predicted temperatures during waste emplacement (50 °C to 70 °C)". NEV Petition at 728. However the SAR indicates that the air temperature is approximately 23°C at the location where the gasket material is used, SAR

Table 1.3.5-2 (p. 1.3.5.-29). Next, Nevada has not demonstrated that its concern about "shock losses," from the expansion and contraction of air flow through regulators, has an impact on the overall performance of the ventilation system in providing the required 15 m^3/sec air flow for the emplacement drifts. *See* NEV Petition at 728. Further, Nevada asserts that the "outside dimensions of the TEV are not provided," and thus Nevada alleges a "concern" about whether the TEV "will fit through the ventilation doors." *See* NEV Petition at 728. However, the TEV dimensions are provided in SAR Table 1.10-44 (p. 1.10-88), and the emplacement access door relative dimensions are available at SAR Figure 1.3.5-10 (p. 1.3.5-51). Therefore, Nevada has not provided sufficient information to support its bare assertions. Accordingly, NEV-SAFETY-135 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi); s*ee also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. *See id.* An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

As noted above, Nevada alleges that the LA does not meet the requirements of 10 CFR §§ 63.21(c)(9); 63.113; and 63.114(a), which are postclosure requirements, not controlling on the preclosure issue raised in this contention regarding waste emplacement. Nevada does not allege that the LA fails to meet any specific preclosure requirements. Nor does Nevada

demonstrate how lack of “sufficient detail” fails to meet the cited postclosure requirements. Consequently, this contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and must be dismissed.

Furthermore, NEV-SAFETY-135 seeks to raise a dispute with SAR subsections 1.3.5.1.3.3 and “similar subsections.” To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. Nevada does not specify which other “related” section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.,*(Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For all of the foregoing reasons, NEV-SAFETY-135 should be rejected.

NEV-SAFETY-136 - PHASED GROUND SUPPORT INSTALLATION

> SAR Subsection 1.3.4.4 and similar subsections, which discuss the ground support system in the emplacement drifts, fail to include sufficient detail to determine whether the rock support system will fulfill the requirements that the LA places on it, and as a result, the LA assumptions relating to effectiveness of the geologic and engineered barrier system are unfounded.

NEV Petition at 730. In this contention, Nevada asserts that DOE has failed to provide sufficient information to determine whether the rock support system will fulfill the requirements in the LA regarding the shape of the drifts and will impact the assumptions relating to effectiveness of the geologic and engineered barrier system for demonstrating postclosure performance. *Id.*

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309 (f)(1)(v)-(vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co. et al.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 . A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)

(internal citation omitted). Finally, a contention supported by "bare assertions and speculation" is inadmissible. *See id.*

Nevada alleges that DOE's insufficient description of the rock support system would lead to a violation of various postclosure requirements: 10 CFR §§ 63.21(c)(9); 63.113; and 63.114. *See* NEV Petition at 730-31. However, Nevada has not offered any documents, facts, or bases for its expert's opinions to support its claim. *See* NEV Petition at 727-28. Nevada has proffered the support of an expert who adopts portions of the contention, but neither the affidavit nor the adopted paragraphs offer any basis for his opinions. *See* NEV Petition, Attachment 9, Affidavit of Doug Hambley ¶ 2. Nevada makes several assertions regarding DOE's planned approach to the ground support system. For instance, Nevada asserts that "[b]ased on the characterization of the rock mass" in the LA, "one can expect that upon removal of the initial rock support system there will be significant roof falls." "[I]t is highly unlikely that the perimeter of the emplacement drifts will be as smooth as the LA assumes." NEV Petition at 731-32. First, Nevada does not define "initial rock support." SAR Section 1.3.4.4.1 states: "[t]he initial ground support is installed in the drift crown only, immediately following excavation. The wire mesh is removed prior to installation of the final ground support, while the initial rock bolts remain in place." Thus removing only the wire mesh prior to final installation of rock support does not mean "removal of the initial rock support system" as claimed by Nevada. Nevada goes on to assume that removal of the initial rock support system will in turn "impact the assumptions concerning the heat transfer into the rock mass surrounding the drifts, the effectiveness of the ventilation system (as the frictional losses will be higher than anticipated), and the effectiveness of the capillary barrier to seepage postulated for the post-closure period." NEV Petition at 732. However, Nevada never explains how the alleged problems with the emplacement drifts will cause the cause the concerns it alleges. Further none of these assertions have any bearing on the focus of the contention, which is the lack of detail regarding the support system. See NEV Petition at

730. A contention supported by "bare assertions and speculation" fails to meet the requirements of § 2.309(f)(1)(v) and is therefore inadmissible. *See Fansteel*, CLI-03-1 3, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. *See id.* An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

As noted above, Nevada alleges that DOE's insufficient description of the rock support system would lead to a violation of various postclosure requirements, 10 CFR §§ 63.21(c)(9); 63.113; and 63.114(a). Although Nevada argues that DOE fails to include sufficient detail regarding the ground support system in the emplacement drifts, Nevada does not suggest what details are missing or how these omissions are relevant matters as required by regulation. *See* NEV Petition at 731-32. Consequently, this contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and should not be admitted.

For all of the foregoing reasons, NEV-SAFETY-136 is inadmissible.

NEV-SAFETY-137 - CONSTRUCTION OF THE EMPLACEMENT DRIFTS

> SAR Subsection 1.3.4.3 and similar subsections, which discuss excavation of the emplacement drifts, fail to include sufficient detail to determine whether the tunnel boring machine (TBM) will fulfill the requirements that the LA places on it, and as a result the LA assumptions concerning the excavation of the emplacement drifts are unfounded.

NEV Petition at 733. In this contention, Nevada asserts that DOE does not include sufficient design information on the tunnel boring machine ("TBM") and it therefore cannot be determined whether the emplacement drifts constructed using a TBM meet specified tolerances and conform to engineering specifications. *Id.*

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. § 2.309 (f)(1)(iv)-(vi).

10 C.F.R. § 2.309(f)(1)(vi): Materiality

Nevada has failed to demonstrate that the *issue raised* is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp. (*Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)); s*ee also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993). In this proceeding, the finding the Staff must make is whether "there is reasonable assurance that . . . radioactive materials . . . can be received and possessed in a geologic repository

operations area of the design proposed without unreasonable risk to the health and safety of the public; and . . . there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, the NRC must determine whether 10 C.F.R. § 63.31(a)(3)(i) and (ii) have been met. Here, Nevada fails to provide any analysis or references that shows that its allegations regarding DOE's description of the TBM would make a difference with regard to whether 10 C.F.R. § 63.31(a)(3)(i) and (ii) have been met. Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(iv).

Nevada alleges that DOE does not include sufficient design information on the tunnel boring machine ("TBM") and it therefore cannot be determined whether the emplacement drifts constructed using a TBM meet specified tolerances and conform to engineering specifications. *See* NEV Petition at 733-34. Nevada alleges non-compliance with 10 CFR §§ 63.21(c)(9); 63.113; and 63.114. None of those regulations require any specific level of detail and, as discussed below, Nevada fails to show that the information DOE does provide is inadequate. Accordingly, NEV-SAFETY-137 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting

references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Finally, a contention supported by "bare assertions and speculation" is inadmissible. *See id.* (internal citation omitted).

Here, Nevada has not offered any documents, facts, or bases for its experts' opinions to support its claim. *See* NEV Petition at 734-35. Nevada has proffered the support of three experts who adopt portions of the contention, but neither the affidavits nor the adopted paragraphs offer any basis for their opinions. *See* NEV Petition, Attachment 5, Affidavit of Allen Messenger ¶ 2; Attachment 9, Affidavit of Doug Hambley ¶ 2; Attachment 20, Affidavit of Steven A. Frishman ¶ 2. In an effort to explain why more design information is necessary, Nevada makes several assumptions about the TBM performance. Nevada, however, does not provide any information demonstrating that these assumptions about TBM performance would affect the evacuation of the emplacement drifts. For instance, Nevada states that "[i]t is not uncommon for roof falls to occur on and around TBMs." NEV Petition at 734. Nevada, however, does not provide any example or references to where such events occurred and under what conditions. Further, Nevada asserts "it can be expected that the TBMS will encounter difficulties with roof falls. If problems in particular areas of the repository become severe, the decision might be taken to abandon these areas." *Id.* Nevada offers no support for its assertion of what "might" happen. Nevada also asserts that the lack of design information on the TBM means that there is no assurance that the requirements of the emplacement drifts can be achieved in Topopah Spring tuff. *See id.* However, no references are cited to indicate unsuccessful use of TBMS in Topopah Spring tuff-like rocks. Nevada does not discuss or refute DOE's discussion of the use of a TBM to excavate tunnels in Topopah Spring tuff-like rock formations at Yucca Mountain during construction of the Exploratory Studies Facility Tunnel and the Enhanced Characterization of the Repository Block Cross-Drift, DOE SAR Section 1.3.4. at 1.3.4.-8. Nevada's claims amount to "bare assertions and speculation" and therefore fail to meet the requirements of § 2.309(f)(1)(v).

See Fansteel, CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) further requires that the information include references to specific portions of the application that the petitioner disputes. *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. *See id.* An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

As noted above, Nevada alleges that the LA does not meet the requirements of 10 CFR §§ 63.21(c)(9); 63.113; and 63.114, which are postclosure requirements, while the subject of this contention is preclosure. Nevada does not allege that the LA fails to meet any specific preclosure requirements. "Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed." See *PPL Susquehanna LLC*, (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007). Although Nevada argues that DOE fails to include sufficient design detail on the TBM, Nevada does not suggest what details are missing or how these omissions are relevant matters or required by regulation. *See* NEV Petition at 734-35. A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994). Consequently, this contention fails to meet the requirements of 10 C.F.R. §

2.309(f)(1)(vi) and should not be admitted.

For all of the foregoing reasons, NEV-SAFETY-137 is inadmissible.

NEV-SAFETY-138 - DESCRIPTION OF THE VENTILLATION SYSTEM FOR THE REPOSITORY OPTIONS MADE IN THE TSPA-LA REGARDING WASTE ISOLATION

> SAR Subsection 1.3.5.1.3.1 and similar subsections, which describe the intake and exhaust fans for the facility, fail to provide sufficient detail to determine whether the ventilation fans will fulfill the requirements that the LA places on them and as a result, the LA assumptions relating to the isolation of the emplacement drifts during the pre-closure period are unfounded.

NEV Petition at 736. In this contention, Nevada asserts that DOE has failed to provide sufficient detail on the fans for subsurface ventilation to demonstrate the required functions for these subsurface ventilation fans can be achieved. *Id.*

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. § 2.309 (f)(1)(iv)-(vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada has failed to demonstrate that the *issue raised* is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 333-34 (1999) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)); s*ee also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993). In this proceeding, the finding the Staff must make is whether "there is reasonable assurance that . . . radioactive materials . . . can be received and possessed in a geologic repository

operations area of the design proposed without unreasonable risk to the health and safety of the public; and . . . there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, the NRC must determine whether 10 C.F.R. § 63.31(a)(3)(i) and (ii) have been met. Here, Nevada fails to provide any analysis or references that prove that DOE's allegedly insufficient description of the ventilation fans system would make a difference with regard to whether 10 C.F.R. § 63.31(a)(3)(i) and (ii) have been met. Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(iv).

Nevada suggests a certain airflow rate to be required for the exhaust shafts; questions whether fans the size of the LA's specifications are commercially available; and speculates based on "historical data" about ventilation fan blade failures. *See* NEV Petition at 737-38. Nevada alleges that due to these purported deficiencies, DOE's description of the ventilation system fails to meet the requirements of 10 C.F.R. §§ 63.21(c)(6) and 63.112(e), without discussing in any detail how the alleged deficiencies fail to meet the terms of the requirements. None of those regulations require any specific level of detail and, as discussed below, Nevada fails to show that the information DOE does provide is inadequate. Accordingly, NEV-SAFETY-138 has failed to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) and should not be admitted.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-

12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Finally, a contention supported by "bare assertions and speculation" is inadmissible. *See id.* (internal citation omitted).

Here, Nevada has not offered any documents, facts, or bases for its expert's opinions to support its claim. *See* NEV Petition at 737-38. Nevada has proffered the support of three experts who adopt portions of the contention, but neither the affidavits nor the adopted paragraphs offer any basis for their opinions. *See* NEV Petition, Attachment 5, Affidavit of Allen Messenger ¶ 2; Attachment 9, Affidavit of Doug Hambley ¶ 2; Attachment 20, Affidavit of Steven A. Frishman ¶ 2. Nevada makes several assumptions to conclude that DOE's description of the ventilation system is insufficient. First, Nevada states that because DOE "does not indicate the total air quantity to be handled by each of the four intake and six exhaust shafts," Nevada suggests a certain airflow rate to be required for the exhaust shafts ("each fan must be capable of handling 1.2 million cfm"). NEV Petition at 737. Not only does Nevada not provide any factual or expert support for this conclusion, but in the disputed SAR subsection (1.3.5.1.3.1), DOE does discuss ventilation fan power. Nevada does not address or refute that information in its calculation of airflow rate. Next, Nevada states that "[i]n the past 15 years, few, if any, fans of [the size of DOE's specifications] have been built and installed." NEV Petition at 737. Nevada then concludes, with no factual support that "[c]onsequently, the 12 fans of this size that will be needed likely do not currently exist." *Id.* Next, Nevada alleges that because "[h]istorical data" indicates a particular frequency of blade failure for the specified fans, DOE's description of the ventilation system is inadequate. *Id.* at 738. Nevada gives no indication of the source of this "historical data" or provides any

explanation of how it developed the blade failure rate. Nevada's conclusions about DOE's ventilation system are unsupported by expert opinion or any other document. A contention supported by "bare assertions and speculation" fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) and is therefore inadmissible. *See Fansteel*, CLI-03-13, 58 NRC at 203.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi); s*ee also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. *See id.* An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

As noted above, Nevada asserts that DOE's description of the ventilation system fails to meet the requirements of 10 C.F.R. §§ 63.21(c)(6) and 63.112(e). Further, as discussed above, Nevada does not explain the basis for its assertions. Nevada suggests a certain airflow rate be required for the exhaust shafts without discussing the information DOE includes on ventilation fan power at SAR Section 1.3.5.3.1. *See* NEV Petition at 737. Nevada also concludes that DOE has not given "adequate consideration" of ventilation fan failure, and makes assumptions regarding delivery and installation of replacement blades. However, Nevada fails to discuss or refute the information that DOE does include specifically on this topic at SAR Section 1.3.5-3. A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges

was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994). Consequently, this contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and should not be admitted.

For all of the foregoing reasons, NEV-SAFETY-138 is inadmissible.

NEV-SAFETY-139 - DESCRIPTION OF REASONABLE EMERGENCIES

> SAR Subsection 5.7 and similar subsections, which discuss plans for dealing with radiological emergencies prior to permanent closure, fail to include sufficient detail to determine whether these plans will fulfill all of the requirements that the LA places on them, and as a result, the LA assumptions related to the effectiveness of the engineered barrier system are unfounded.

NEV Petition at 739. In this contention, Nevada asserts that DOE's proposed plans for dealing with radiological emergencies lack sufficient detail. *Id.*

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309 (f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" should "be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Finally, a contention supported by "bare assertions and speculation" is inadmissible. *See id.* (internal citation omitted).

Here, Nevada has not offered any documents, facts, or bases for its experts' opinions to support its claim that the details given for the Emergency Plan are insufficient. *See* NEV Petition at 740. Nevada claims that DOE's proposed plans for dealing with radiological emergencies lack sufficient detail. *Id* at 739. Nevada has proffered the support of two experts who adopt portions of the contention, but neither the affidavits nor the adopted paragraphs offer any basis for their opinions. *See* NEV Petition, Attachment 9, Affidavit of Doug F. Hambley ¶ 2; Attachment 20, Affidavit of Steven A. Frishman ¶ 2. Nevada offers no technical support for its allegations of what the Emergency Plan lacks and how these purported deficiencies are non-compliant with regulatory requirements. Moreover, Nevada does not acknowledge or discuss at any length what is included in DOE's Emergency Plan. Nevada also appears to try to link the purported lack of sufficient detail in the Emergency Plan to a failure of the EBS by asserting that if there were a radiological emergency, then this event would "by definition imply a failure of one or more components of the engineered barrier system." *Id.* Thus, Nevada argues, assumptions related to the engineered barrier system are unfounded. *Id.* Nevada, however, offers no further discussion on how the level of detail in the Emergency Plan would relate to a failure of the EBS. Nevada's allegations therefore amount to "bare assertions and speculation" and therefore fail to meet the requirements of § 2.309(f)(1)(v). *See Fansteel*, CLI-03-13, 58 NRC at 203. Accordingly, NEV-SAFETY-139 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-139 fails to show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact." 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "' bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*,

CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

As discussed above, Nevada claims that DOE's proposed plans for dealing with radiological emergencies lack sufficient detail, NEV Petition at 739, yet Nevada does not address or refute the relevant information in the LA that DOE does provide. Further, Nevada fails to demonstrate a genuine dispute on a material issue of law or fact because the regulations do not require what Nevada asserts that they do. For instance, Nevada argues that "the more specific criteria given in 10 C.F.R. § 72.32(b) are not met" by DOE's purported lack of detail in the Emergency Plan. *Id.* at 740. However, § 72.32(b) is the requirement for what a complete Emergency Plan must contain, not what the description of the plan must contain (§ 63.21(c)(21)), which is the requirement that DOE must meet to receive a construction authorization. Nevada does not argue that DOE has not met § 63.21(c)(21). In fact, Nevada states "[t]he general requirements in 10 C.F.R. § 63.21(c)(21) do appear to be met by discussion presented in SAR Subsection 5.7." Therefore, Nevada fails to demonstrate a genuine dispute on a material issue of law or fact. Accordingly, NEV-SAFETY-139 does not comply with 10 C.F.R. § 2.309(f)(1)(vi) and should not be admitted.

For all of the foregoing reasons, NEV-SAFETY-139 is inadmissible.

NEV-SAFETY-140 - ENGINEERED BARRIER SYSTEM DESIGN BASIS

> SAR Subsection 1.3.4 and similar subsections, which describe the design of ground control system, ventilation system and components of the engineered barrier system, fail either to include sufficient detail to determine whether the component discussed will fulfill the requirements placed on it by the LA or to provide sufficient reference to supporting documents that provide the required detail.

NEV Petition at 741. In this contention, Nevada asserts that DOE has failed to provide sufficient design information in three aspects of its LA: the ground control system; ventilation system; and components of the engineered barrier system. *Id.* Nevada asserts that these purported deficiencies impact the preclosure safety analysis. *Id* at 742.

Staff Response

Nevada previously made nearly all the assertions in this contention in its other contentions (*See* NEV-SAFETY-132 (TEV description, component of the engineered barrier system); NEV-SAFETY-133 (Drip Shield Gantry Description, component of the engineered barrier system); and NEV-SAFETY-138 (ventilation system)), and the NRC staff opposes the admissibility of those contentions in its response. For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309 (f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co. et al.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the

"references" "must be as specific as reasonably possible." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). A "mere 'notice pleading' is insufficient." *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Finally, a contention supported by "bare assertions and speculation" is inadmissible. *See id.* (internal citation omitted).

Here, Nevada alleges that deficiencies in design detail of the ground control system; the ventilation system; and components of the engineered barrier system fail to meet 10 C.F.R. § 63.112(e). Nevada has not offered sufficient documents, facts, or bases for its expert's opinions to support its claim. *See* NEV Petition at 742-44. Nevada has proffered the support of two experts who adopt portions of the contention, but neither the affidavits nor the adopted paragraphs offer any basis for his opinions. *See* NEV Petition, Attachment 9, Affidavit of Doug F. Hambley ¶ 2; Attachment 20, Affidavit of Steven A. Frishman ¶ 2. In NEV-SAFETY-140, Nevada discusses the individual aspects of the repository, in an attempt to support Nevada's position that the descriptions of the ground control system; ventilation system; and components of the engineered barrier system are insufficient to meet the preclosure requirements of 10 C.F.R. § 63.112(e).

In discussing the ventilation system, Nevada claims that DOE did not specify certain operating parameters in the LA. These claims are substantially similar to those alleged in NEV-SAFETY-138, which the NRC staff opposes because Nevada does not demonstrate how its assertions show that DOE has failed to meet a regulatory requirement. The NRC staff opposes this contention for the same reason. In NEV-SAFETY-140, Nevada asserts that DOE does not provide the "total airflow and pressure capacity" for the ventilation exhaust fans in either the LA or supporting references, NEV Petition at 742. However, Nevada does not set forth the significance of this data. Nor does Nevada demonstrate how this allegedly missing data fails to meet 10 C.F.R. § 63.112(e).

Next, Nevada makes unsupported claims about the TEV design, which are identical to

the claims asserted in NEV-SAFETY-132. The NRC staff opposes NEV-SAFETY-132 because Nevada fails to show support for its conclusions, and the NRC staff opposes this contention for the same reasons. Regarding the lack of sufficient detail on the TEV design, Nevada fails to present any supporting evidence that DOE's TEV description lacks sufficient detail to determine whether it will meet the cited requirements. *See id.* at 743-44. Nevada assumes that based on DOE's statement that " '[c]odes and standards have been evaluated and design requirements and testing specifications are being developed,' " *Id.* citing SAR Section 1.3.3 at 30, that there is "no engineering design for the TEV." *See id.* at 743. Nevada makes this assumption without a discussion of what designs are offered in the LA. Further, nothing is offered to support Nevada's speculations about the alleged "critical impacts" of the "lack of design information." *See id*. For instance, Nevada assumes that the lack of a TEV design means that DOE cannot meet the "precise emplacement" requirement. *See id.* Nevada asserts that "precise emplacement" of waste package emplacement is required for the evaluation of postclosure safety, but does not offer an explanation or supporting evidence of what "precise emplacement" entails. *See id.*

Next, Nevada makes unsupported claims about the Drip Shield Gantry design, which are identical to the claims asserted in NEV-SAFETY-133. The NRC staff opposes NEV-SAFETY-133 because Nevada fails to show support for its conclusions, and the NRC staff opposes this contention for the same reason. Nevada asserts that the Drip Shield Gantry design lacks information and this lack of information "has a critical impact on the evaluation of post-closure safety." NEV Petition at 744. However, Nevada bases this assertion on the assumption that since "the Drip Shield component of the EBS is described", as a "'unique component' for which 'there are no established industry practices for its design' the Drip Shield Gantry used to transport the drip shields must necessarily also be unique." *Id.*, citing SAR Subsection 1.3.4.7 at 1.3.4-31. Nevada does not suggest what level of design detail for the Drip Shield Gantry would be "sufficient", or explain how the design detail DOE provided

does not meet the regulatory requirements.

Finally, Nevada offers no support or discussion of any length for its position that the description ground control system is one of the aspects of DOE's LA that fails to meet preclosure safety requirements. Therefore, Nevada has failed to meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Palo Verde,* CLI-91-12, 34 NRC at 155. Accordingly, NEV-NEPA-140 should not be admitted.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007). An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). Further, in a contention alleging an omission, if the contention does not identify specific additional information that the petitioner alleges was improperly omitted, it must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), *review declined*, CLI-94-2, 39 NRC 91 (1994).

In asserting that the alleged deficiencies of the design details of the ventilation system fail to meet 10 C.F.R. § 63.112(e), Nevada fails to raise a genuine dispute on a material issue of law or fact. Here, Nevada does not analyze or even discuss the design details of the ventilation system, but merely asserts that DOE does not provide the "total airflow and pressure capacity" of the exhaust fans in the LA. NEV Petition at 742. Nevada also fails to

demonstrate the significance of acquiring the allegedly missing information about the exhaust fans. Nor does Nevada show that this missing information is a violation of 10 C.F.R. § 63.112(e).

In asserting that the alleged deficiencies of the design details of the TEV fail to meet 10 C.F.R. § 63.112(e), Nevada fails to raise a genuine dispute on a material issue of law or fact. Nevada does not discuss or refute the several pages of TEV design information DOE does offer at SAR 1.3.3.5.1.1. *See* NEV Petition at. at 744. Similarly, Nevada does not identify specific additional information about the TEV design that it alleges was improperly omitted. Moreover, Nevada does not explain why DOE's description, however complete or incomplete, does not meet the regulatory requirements of Part 63. *See* NEV Petition at 744.

Finally, in asserting that the alleged deficiencies in the design details of the Drip Shield Gantry fail to meet 10 C.F.R. § 63.112(e), Nevada also fails to raise a genuine dispute on a material issue of law of fact here. Nevada does not, however, explain how DOE's Drip Shield Gantry designs do not meet the regulatory requirements of Part 63. Nevada does not address at any length the design detail DOE provided in the LA, but merely quotes the LA as stating that the Drip Shield is a "unique component" of the EBS. NEV Petition at 744. Accordingly, Nevada fails to raise a genuine dispute with the applicant on a material issue of law or fact. Therefore, NEV-SAFETY-140 fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and should not be admitted.

For all of the foregoing reasons, NEV-SAFETY-140 is inadmissible.

NEV-SAFETY-141 – GROUND SUPPORT DESCRIPTIONS

> Subsection 1.3.4.4, and similar and related sections of the SAR, lacks detailed descriptions of ground support items, such as "super Swellex-type rock bolts" and "Bernold-type perforated liners" and treats them as generic, which is inappropriate for a final repository design.

NEV Petition at 746. Nevada contends DOE's descriptions of ground support systems in the SAR are generic and insufficient. Nevada argues that this lack of information makes it impossible to evaluate impacts of ground support systems of the near field of the repository. *See id.* at 748. Therefore, Nevada asserts that SAR subsection 1.3.4.4 and similar and related subsections fail to comply with Part 63. *Id.* at 748.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-141.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007). "The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Here, Nevada argues that the SAR fails to comply with Part 63 because it does not include sufficiently detailed descriptions of ground support items, "which is insufficient for a final design document that the SAR purports to be." *See* NEV Petition at 748. Nevada has failed to show a genuine dispute exists on a material issue of law because Nevada has not pointed to any regulation that would require a more detailed description of ground support

systems nor has it pointed to any regulatory requirement that requires the repository design to be "final". Furthermore, Nevada has not provided sufficient information to show that lack of ground support information renders the SAR inadequate in a material respect such that DOE has not complied with Sections 63.21(c)(14), 63.102(h), 63.113, and 63.115. *See* NEV Petition at 748. Nevada does not provide any support to indicate that ground support items are a design feature important to waste isolation (§ 63.21(c)(14)), will impact the performance assessment (§ 63.102(h)), will impact radiological exposure (§ 63.113), or will impact repository barrier design and performance (§ 63.115). Finally, Nevada does not explain if or how the ground support system may impact repository performance. Nevada does not refer to or dispute the fact that the TSPA "does not take credit for ground support during the post-closure performance period." *See* SAR Chapter 1, Section 1.3.4.4 at 1.3.4-8. Nevada simply makes the assertion that the design information lacks detail such that it is impossible to evaluate impacts of ground support items on the near field repository, and therefore the SAR fails to comply with Part 63. *See Millstone*, CLI-01-24, 54 NRC at 358. Because Nevada has failed to provide sufficient information to show a genuine dispute exists regarding a material issue of law or fact, Nevada has not satisfied 10 C.F.R. § 2.309(f)(1)(vi).

In addition, NEV-SAFETY-141 seeks to raise a dispute with Subsection 1.3.4.4, and "similar and related" sections. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and

coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the foregoing reasons, NEV-SAFETY-141 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-142 – STANDARD TITANIUM GRADES CONSIDERED

> In SAR Subsection 2.1.1.2 and similar subsections, DOE considered only standard ASTM specification titanium for the drip shields, which is an inadequate basis for design and results in significant differences in corrosion performance of the drip shield surface, structural members and welds, for which the LA provides inadequate information to demonstrate the performance DOE assumes for the titanium alloys selected for fabrication of the drip shields.

NEV Petition at 750. Nevada contends that the drip shields cannot be assumed to perform as represented in the SAR because DOE has proposed to use several different grades of titanium with different strengths and corrosion resistance properties. *Id.* Thus, Nevada argues that DOE has failed to comply with Part 63. *See id.* at 750-751.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-142.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A contention should be ruled inadmissible if a petitioner "offer[s] no tangible information, no experts, no substantive affidavits," and only "bare assertions and speculation." *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

To support this contention, Nevada refers to one of its LSN documents and provides two experts who attest to the information in paragraph 5. *See* NEV Petition, Attachment 14, Affidavit of James A. McMaster; Attachment 18, Affidavit of Robert A. Cottis.

Here, Nevada asserts that DOE "failed to consider composition options other than

existing ASTM 'standard' grades and has left no option to take advantage of development of new and better materials." NEV Petition at 752. Nevada goes on to speculate as to why DOE selected Grade 29 Titanium, *e.g.*, economics, susceptibility to stress corrosion cracking ("SCC"), the ASTM specifications, and on DOE's failure to consider a number of alternative materials. *See* NEV Petition at 752-54. Nevada does not point to any references to support its speculation regarding DOE's material selection nor does Nevada show that DOE did not consider other materials before making its selection. Furthermore, Nevada has not pointed to any regulatory requirement that would require DOE to consider the suggested alternatives nor has Nevada shown that DOE's material selection is inadequate such that it will detrimentally impact repository performance and dose to the RMEI. Finally, Nevada has not shown how or if one of its suggested alternative materials would impact repository performance. Nevada simply asserts, without support, that alternatives may reduce the concerns such as corrosion, fabrication errors, weld filler metal selection, and SCC. *See* NEV Petition at 7543-54. Absent such support, Nevada's contention is inadmissible. *See Fansteel*, CLI-03-13, 58 NRC at 203 (internal citation omitted).

In addition, Nevada claims that drip shields may fail in the near term after closure due to corrosion mechanisms exacerbated by hot wall conditions and the insulating effect of the repository. *See* NEV Petition at 755. Nevada argues that DOE failed to test for corrosion under these conditions. *See id.* Nevada refers to a test where such conditions caused corrosion in Alloy 22. *See id.* (citing "C22 Corrosion in Dripped Pore Water" (Apr. 23, 2008) (LSN No. NEV000005216) at 1-17). Nevada however, does not explain why or how this test showing corrosion of Alloy 22 supports its proposition that DOE's titanium drip shields may fail under similar corrosion mechanisms. *See id.* Nevada does not provide supporting information or a reasoned expert opinion to show that corrosion properties of titanium and Alloy 22 would be similar under the specified conditions. *See Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted). Thus, Nevada has not satisfied its obligation to "provide

analysis and supporting evidence as to why particular sections of th[e]se documents . . . provide a basis for the contention." *Id.* at 204.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). "The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Here, Nevada argues that because DOE "assumed that drip shields will function for hundreds of thousands of years based on corrosion testing" described in SAR Subsection 2.3.6 and did not consider "custom compositions to make corrosion performance of welds and structural components more uniform," DOE failed to comply with 10 C.F.R. § 63.114(f). NEV Petition at 755-56. Section 63.114(f) requires that degradation, deterioration, or alternation processes of engineered barriers be evaluated in detail if "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by its omission. 10 C.F.R. § 63.114(f). NEV-SAFETY-142 does not present any information that would demonstrate, nor does it argue, that "the magnitude and time of the resulting radiological exposures to the [RMEI], or radionuclide releases to the accessible environment, would be significantly changed" by the omission of custom composition considerations that may make corrosion performance more uniform. *See* 10 C.F.R. § 63.114(f). In addition, Nevada has not shown

that because DOE did not consider the suggested alternatives, that performance of the drip shields will be impacted such that dose to the RMEI will exceed regulatory limits.

Nevada also argues that DOE failed to consider alternatives that may have reduced the risk of stress corrosion cracking ("SCC"). *See* NEV Petition at 754-55. While NEV-SAFETY-142 refers generally to SAR Subsection 2.3.6 which addresses waste package and drip shield corrosion, Nevada does not specifically reference or discuss SAR Subsection 2.3.6.8 which addresses drip shield degradation including general corrosion, localized corrosion, stress corrosion cracking ("SCC"), early failure, and thermal aging phase stability. *See* SAR Subsection 2.3.6.8 at 2.3.6-70 to 2.3.6-71. Nevada does not explain why DOE's consideration of drip shield corrosion in this subsection is inadequate nor does Nevada refer to or dispute DOE's screening of localized corrosion of the drip shield from further consideration in FEP 2.1.03.03.0B. *See* SAR Subsection 2.3.8.6 at 2.3.6-71 (citing SAR Section 2.2, Table 2.2-5). Similarly, Nevada does not refer to or challenge DOE's decision to exclude SCC of the drip shield from further consideration. *See* SAR Subsection 2.3.6.8 at 2.3.6-71 (citing SAR Section 2.2, Table 2.2-5 FEP 2.1.03.02.0B). The assertion that the SAR fails to comply with Section 63.114(f) therefore, does not raise a dispute regarding a material issue of law fact or law with respect to the license application as required by 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358.

Finally, NEV-SAFETY-142 seeks to raise a dispute with SAR Subsection 2.1.1.2 and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift

through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-142 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (iv).

NEV-SAFETY-143 – AVAILABLE DRIP SHIELD DESIGN INFORMATION

> In the "Yucca Mountain Project Engineering Specification for Prototype Drip Shield & Drip Shield Fabrication Specification; 000-3SS-SSE0-00100-000-00Bb" (12/06/2006), LSN# DN2002362768, in SAR Figures 1.2.3-14 and 15, and 2.3.4-56, and throughout SAR Subsection 1.3.4.7 and similar subsections, DOE fails to provide necessary information to adequately understand and evaluate the drip shield design, fabrication, or installation.

NEV Petition at 757. Nevada contends that DOE has not provided necessary information to allow for complete assessment of drip shield design and that risks associated with fabrication, installation, and performance have not been adequately considered in the TSPA. *See id.* Nevada argues that SAR Subsection 1.3.4.7 and similar subsections do not comply with Part 63, in particular Section 63.113. *See id.* at 757-58, 761.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-143.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A contention should be ruled inadmissible if a petitioner "offer[s] no tangible information, no experts, no substantive affidavits," and only "bare assertions and speculation." *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

To support this contention, Nevada refers to three references in the application and provides affidavits from two experts. *See* NEV Petition at 759; NEV Petition, Attachment 9, Affidavit of Doug. F. Hambley; Attachment 14, Affidavit of James A. McMaster.

NEV-SAFETY-143 states that DOE has provided inadequate conceptual details of drip shield design "to allow complete assessment of the drip shield design concept, and risk issues associated with fabrication, installation, and performance have not been considered adequately in the TSPA." NEV Petition at 757. Nevada does not refer to or challenge as inadequate DOE's consideration of drip shield design and risks associated with fabrication, installation and performance in the SAR or the early failure scenario of the TSPA. *See* SAR Subsection 2.3.6.8.4 (Drip Shield Early Failure); SAR Subsection 2.3.6.2.3 at 2.3.6-17 (Early Failure Due to Manufacturing Defects); SAR Subsection 2.3.6.1.1 at 2.3.6-7 (stating human errors in fabrication and installation "are included in abstraction models (Section 2.3.6.8.4) used in the early failure scenario class of the TSPA as presented in Section 2.4."); and Section 2.2 Table 2.2-1, FEP 2.1.03.08.0B (Early failure of drip shields). Instead, NEV-SAFETY-143 focuses on the level of design detail, consideration of alternative materials, and interlocking connector issues. *See* NEV Petition at 758-62. Because Nevada has not explained or shown that DOE's treatment of the risks associated with fabrication, installation, and performance have not been considered in the TSPA, it has not provided support for its contention. Therefore, Nevada has failed to satisfy its "obligation to provide the analysis and expert opinion showing why its bases support its contention[] . . . ." *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), LBP-04-15, 60 NRC 81, 89 (2004), *aff'd* CLI-04-36, 60 NRC 63 (2004) (citing *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991)).

Nevada also speculates that it "does not seem that" DOE accounted for deformation absorption capabilities in the post-closure safety assessment report, because DOE's proposed fabrication plan "would sacrifice significant deformation absorption capability, with little benefit in simplification or cost reduction of fabrication." NEV Petition at 758-59. Nevada does not, however, explain why or how the proposed fabrication plan would impact deformation capability nor does it explain what constitutes "significant." Such speculation

cannot support admission of this contention. *See Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-143 fails to provide sufficient information to show that a genuine dispute exists with regard to the applicant or specific portions of the LA "on a material issue of law or fact" as required by 10 C.F.R. § 2.309(f)(1)(vi). The Commission's regulations require that admissible contentions identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. *Id. See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, Nevada argues that the SAR fails to provide adequately detailed conceptual design details of the drip shield in order to "understand and evaluate the drip shield design, fabrication and installation" and suggests that DOE failed to consider alternatives to Grade 29 titanium and should demonstrate the connection feature and function of the drip shield. *See* NEV Petition at 757, 759, 760.

With respect to Grade 29 Titanium, Nevada asserts that "DOE failed to consider alternatives to using high strength Grade 29 for the structural support with all the issues related to hydrogen, stress corrosion cracking (SCC) filler metal selection and use, etc. that Grade 29 introduces." *Id.* at 759. Nevada does not, however, argue that DOE's selection of Grade 29 is inadequate. In addition, Nevada does not refer to or challenge DOE's consideration and treatment of issues related to hydrogen, stress corrosion cracking ("SCC"), and filler metal selection in the SAR. For example, DOE considered and screened from further consideration SCC of the drip shield on the basis of low consequence. *See* SAR Section 2.2, Table 2.2-5 at 2.2-232 (FEP 2.1.03.02.0B). Similarly, DOE considered and excluded from further consideration on the basis of low probability hydrogen induced

cracking of the drip shield. *See id.* at 2.2-233 (FEP 2.1.03.04.0B). DOE also considered improper weld filler metal selection in SAR Subsection 2.3.6.8.4.3.2.2 at 2.3.6-82. Because Nevada has not challenged these analyses as inadequate, Nevada has not established that these risks may impact drip shield performance and dose to the RMEI such that Grade 29 titanium is not an appropriate selection. In addition, Nevada has not pointed to any regulatory requirement that would require DOE to consider alternative materials. Therefore, Nevada has failed to provide sufficient information to show a genuine dispute exists regarding a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Additionally, the basis for NEV-SAFETY-143 states that "risk and issues associated with fabrication, installation, and performance have not been considered adequately in the TSPA." NEV Petition at 757. However, as stated above, Nevada does not refer to, discuss, or challenge DOE's treatment of such risks and issues in the SAR or the TSPA. Because Nevada has not pointed to a particular part of DOE's analysis and explained its opposing position, Nevada has failed to provide sufficient information to show a genuine dispute exists. *See* 10 C.F.R. § 2.309(f)(1)(vi). Thus, Nevada's assertion regarding treatment of risks and issues in the TSPA does not satisfy criterion 6. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) ("The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant.").

Finally, NEV-SAFETY-143 seeks to raise a dispute with SAR Subsection 1.3.4.7 and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC

185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFEY-143 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-144 –DRIP SHIELD FAILURE MECHANISMS

> SAR Subsection 2.3.4.5.3.1 and similar subsections do not consider all of the applicable failure mechanisms for the drip shields or provide sufficient design information in order to evaluate all possible failure mechanisms.

NEV Petition at 762. Nevada contends that DOE did not consider all potential drip shield failure mechanisms, and that SAR Subsection 2.3.4.5.3.1 does not provide sufficient design information to evaluate these failure mechanisms. *See id.* Nevada argues that DOE has therefore failed to comply with 10 C.F.R. § 63.113. *Id.* at 764.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-144.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-144 fails to provide supporting facts or expert opinions as required by 10 C.F.R. § 2.309(f)(1)(v). To support this contention, Nevada provides the affidavits of three experts. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne; Attachment 9, Affidavit of Doug F. Hambley; and Attachment 14, Affidavit of James A. McMaster.

Here, Nevada asserts that the SAR does not consider all applicable failure mechanisms and that all possible failure mechanisms cannot be evaluated because sufficient design information is not provided. *See* NEV Petition at 762. Nevada states that SAR Subsection 2.3.4.5.3.1 only considers failure due to 1) collapse of the supporting leg structure, and 2) a general failure of the water diversion surface (WDS). *See id.* at 763. The only alleged failure mechanism that DOE did not consider discussed in NEV-SAFETY-144 is the possibility that large deformations may cause failure because titanium has low ductility and cannot withstand such deformations without breaking. *See id.* Nevada asserts that these failures are expected in welding joints and at top corner welds of the water diversion surface ("WDS"). *Id.* Nevada does not, however, provide support for the assertion that large

deformations are expected to occur nor does Nevada explain why failure is expected in weld joints and top corner welds of the WDS. *See Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (internal citation omitted). In addition, Nevada provides no facts or reasoned expert opinion to support the assertion that the ductility of titanium is "limited" or what range of values it considers "limited" for ductility. *See* NEV Petition at 763. Similarly Nevada's use of "large" with respect to deformation is undefined, particularly in the context of overall repository performance. *See id.*

In addition, Nevada asserts that failures due to large deformations "could have a considerable impact on the assumed performance of the engineered barrier system." *See* NEV Petition at 763. Again, Nevada does not provide any support to show that there will be large deformations, that the deformations will cause failure, or that this could have a "considerable impact" on either structural/mechanical or hydrologic performance. *See Fansteel*, CLI-03-13, 58 NRC at 203. Bare and speculative assertions, even if made by an expert, cannot support admission of this contention. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Thus, Nevada has failed to satisfy 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). An "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-

01, 55 NRC 1 (2002).

Here, Nevada asserts that DOE has not complied with 10 C.F.R. § 63.113 because it "failed to consider all of the drip shield mechanisms that could affect performance of the engineered barrier system and the timing and dose to the RMEI." NEV Petition at 764. But, the only example Nevada provides is that DOE failed to consider the impact large deformations may have on weld joint performance. *See id.* at 763. Nevada did not provide any indication for what it meant by "all of the drip shield failure mechanisms that could affect performance" includes. *See id.* at 764. In addition, as discussed above under criterion 5, Nevada does not support the assertion that there will be deformations which are large enough to cause failure. *See id.* at 763. Furthermore, Nevada has not provided any facts or expert opinions to support the assertion that the alleged drip shield failure mechanisms may affect performance and the timing and dose to the RMEI. *See id.* Nevada "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant." *See Millstone,* CLI-01-24, 54 NRC at 358. Because Nevada has not provided sufficient information to indicate that there will be defamations large enough to impact weld joint performance or that unspecified drip shield failure mechanisms will affect repository performance and radiological exposures, it has failed to show a genuine dispute exists on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 764, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel,* CLI-03-13, 58 NRC at 203 (internal citation omitted).

NEV-SAFETY-144 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 764. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 764. Therefore, with respect to this part of the NEV-SAFETY-144 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.4.5.3.1 and "similar" subsections. NEV Petition at 762. To the extent that Nevada seeks to raise an

issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons set forth above, NEV-SAFETY-144 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-145 –DRIP SHIELD SPECIFICATIONS

> SAR Subsections 1.3.4.7.8 and 1.3.2, and Table 1.3.2-5, and similar subsections, list design codes and standards presumed applicable to the design and fabrication of the drip shield, but include specifications that are not appropriate or relevant and omit specifications necessary to the unique requirements to fabrication of drip shields from titanium such that they will meet the assumptions used in the TSPA for this "important to waste isolation" component of the engineered barrier system.

NEV Petition at 765. Nevada asserts that SAR Subsection 1.3.4.7.8 and related subsections fail to provide sufficient and relevant "specifications on design and fabrication of drip shields" and therefore predictions regarding performance and failure mechanisms as represented in the TSPA are unreliable. *See id.* at 769. Nevada contends that because DOE has not provided "adequate specifications and quality control procedures required to assure that fabrication to such standards is achieved," that it has failed to comply with Part 63, in particular, 10 C.F.R. § 63.113. *See id.* at 765-766, 769.

Staff Response

For the reasons set forth below, the Staff opposes admission of NEV-SAFETY-145.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A contention should be ruled inadmissible if a petitioner "offer[s] no tangible information, no experts, no substantive affidavits," and only "bare assertions and speculation." *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

To support NEV-SAFETY-145, Nevada provides affidavits from two experts who attest to

the information in paragraph 5. *See* NEV Petition, Attachment 9, Affidavit of Doug F. Hambley; Attachment 14, Affidavit of James A. McMaster. Nevada contends that DOE failed to provide sufficient information regarding specifications on design and fabrication of drip shields and therefore, predictions in the TSPA regarding performance and failure mechanism are unreliable. NEV Petition at 769. Nevada does not, however, provide adequate support for this assertion.

Nevada does not provide any facts or reasoned expert opinion in support of the claim that the TSPA is unreliable. NEV Petition at 769. Specifically, neither of its experts attests to the assertion that specifications on design and fabrication in the SAR make predicting "performance/failure mechanisms of the drip shield as represented in the TSPA unreliable" in paragraph 6 of NEV-SAFETY-145. *See id*; *see also* Attachments 9 & 14. Nevada's experts only purport to attest to the information in paragraph 5. *See* NEV Petition, Attachment 9, Affidavit of Doug F. Hambley; Attachment 14, Affidavit of James A. McMaster. Nevada does not explain, as discussed more fully below, why any of the improper or irrelevant specifications will impact the reliability of the TSPA results. Because Nevada has only provided a bare assertion speculating about the reliability of the TSPA results, Nevada has failed to provide the requisite support for this contention. *See Fansteel*, CLI-03-13, 58 NRC at 203 (internal citation omitted).

With respect to the specifications for controlling drip shield design and fabrication, Nevada asserts that they "are inadequate and unclear" because DOE references non-applicable nuclear codes and provides inadequate process or quality guidelines. *See* NEV Petition at 766. Nevada reasons that the cited ASME Code has "little to do with" drip shields and that DOE is using the ASME Code as a "smokescreen." NEV Petition at 768. Nevada states that the ASME Code "is designed primarily for pressure-retaining vessels and includes little" that is applicable to drip shield design and fabrication. *See id.* Nevada does not, however, identify what specifications it believes are not applicable; Nevada simply refers to

the SAR Table 1.3.2-5 at 1.3.2-42 and 1.3.2-43 and other places in the SAR. *See id.* at 765. Similarly, Nevada does not explain, other than generally stating what the ASTM standards are primarily designed for, why the specifications in SAR Table 1.3.2-5 and other places in the SAR are not applicable. In addition, Nevada does not provide any support to show that the "inadequate and unclear" specifications impact performance and the TPSA results. Bare assertions, even if made by an expert, cannot support admission of this contention. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 457 (2006) (internal citation omitted).

Additionally, Nevada asserts that required loads are not defined and "are clearly beyond the scope of ASME and the usual scope and capacity of the fabricator." *See* NEV Petition at 768. Again, Nevada does not specify what required loads it is referencing nor does Nevada explain why these loads are "clearly beyond the scope of ASME" and the capacity of the fabricator. Furthermore, Nevada does not acknowledge that load calculations are included in SAR Section 2.3.4.5, "Structural Response of EBS Features to Mechanical Degradation". These statements of alleged inadequacies, even if made by an expert, cannot provide support for this contention because they lack "a reasoned basis or explanation for that conclusion" and "deprive the Board of the ability to make the necessary, reflective assessment of the opinion. . . . ." *USEC, Inc.* CLI-06-10, 63 NRC 451, 457 (2006) (internal citation omitted).

Finally, Nevada also states that "more rigorous requirements will need to be imposed" to qualify welding procedures and welders, other than what is in the ASME Code. *See* NEV Petition at 767. Nevada reasons that more rigorous requirements such as additional testing are needed due to the "high quality levels DOE says will exist." NEV Petition at 767. Nevada does not attribute this statement to any particular DOE document nor does it provide any factual support or reasoned expert opinion for why ASME code procedures are not adequate or why more rigorous requirements are necessary. Nor does Nevada show that if

more rigorous requirements are not included, this could impact repository performance. Similarly, Nevada asserts, without support, that DOE should have included a specific plan for weld quality controls for each weld system. *See* NEV Petition at 767. Nevada suggests a number of verification steps for welds, but again does not explain why these steps are necessary or what impact they may have on repository performance. These statements, even if made by "[a]n expert, which "merely state[] a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion [are] inadequate" and are not sufficient to support admission of this contention. *See USEC, Inc.* CLI-06-10, 63 NRC at 472 (internal citations omitted).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, Nevada asserts that DOE failed to provide sufficient information regarding specifications on design and fabrication of drip shields and therefore, predictions in the TSPA regarding performance/failure mechanism are unreliable. NEV SAFETY at 769. As discussed above under criterion 5, Nevada has not provided sufficient support to show that the SAR includes inappropriate specifications and omits necessary specifications such that the TSPA results regarding drip shield performance and failure are unreliable. Nevada has not argued that the additional demonstrations, procedures, and information that it suggests DOE provide will impact reliability of the TSPA results or repository performance if implemented. Thus, Nevada has failed to provide sufficient information to show a genuine

dispute exists on a material issue of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi).

Furthermore, NEV-SAFETY-145 seeks to raise a dispute with SAR Subsections 1.3.4.7.8 and 1.3.2, and Table 1.3.2-5, and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-146 - RELIANCE ON PRELIMINARY OR CONCEPTUAL DESIGN INFORMATION

> Legal Issue: The LA [License Application] cannot be granted because it relies on preliminary or conceptual design information for both pre-closure and post-closure aspects.

NEV Petition at 770. Nevada alleges that 10 C.F.R. Part 63 "considered with its history and contemporaneous NRC and DOE interpretations, require an essentially one-step licensing process in which the final design must be submitted and approved before a construction authorization may be issued." *Id.* Nevada states that "[p]reliminary and conceptual design information of the type found in the LA is not final design information" and is deficient. *Id.* at 770, 771-772.

Staff Response

The Staff opposes admission of NEV-SAFETY-146 because it (1) fails to assert an issue of law or fact that is material to the findings the NRC must make; (2) fails to provide alleged facts or expert opinions to support its contention; and (3) fails to provide sufficient information to show that a genuine dispute exists with the applicant or specific portions of the LA. *See* 10 C.F.R. § 2.309(f)(1)(iv)-(vi).

Although the Commission stated that matters raised in the "State of Nevada's Petition to Reject DOE's Yucca Mountain License Application as Unauthorized and Substantially Incomplete" (June 4, 2008) and the July 21, 2008 supplement, which include challenges to the design detail in DOE's LA, would be appropriately raised for consideration as proposed contentions in response to the Notice of Hearing (*U.S. Dep't. of Energy* (High Level Waste Repository), CLI-08-20, 68 NRC __ (Aug. 22, 2008) (slip op. at 2, 4), nothing in the Commission's decision indicates that such challenges do not have to satisfy the contention pleading requirements. *See* CLI-08-20 at 2 n.7 (citing 10 C.F.R. § 2.309(f)). Thus, Nevada's challenge to the level of design detail must satisfy the 10 C.F.R. § 2.309(f)(1) requirements to

be an admissible contention.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-146 is inadmissible because it fails to assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). The APAPO specified that the 10 C.F.R. § 2.309(f)(1)(iv) materiality requirement requires "citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *See U.S. Dep't. of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

Here, Nevada generally asserts that NEV-SAFETY-146 "challenges compliance with applicable NRC regulations" and essentially argues that Part 63 requires final design information. *See* NEV Petition at 771. Nevada has not, however, pointed to any part of the Commission's regulations defining or distinguishing between preliminary, conceptual or final designs, which have not been satisfied. *See* NEV Petition at 770-771. The NRC's determination whether to authorize construction will be based on review and consideration of DOE's LA. 10 C.F.R. § 63.31. The Commission may authorize construction of a geologic repository operations area if it determines, among other things, that based on review and consideration of the submitted information, there is reasonable assurance that receipt, possession, and disposal of radioactive materials at the proposed repository can be achieved without unreasonable risk to the health and safety of the public. 10 C.F.R. § 63.31(a). Nothing in Part 63 indicates that DOE's design information must be "final." Rather, DOE must provide enough information so that the Staff can make its safety determination. See Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, 66 Fed. Reg. 55,732, 55,739 (Nov. 2, 2001). Thus, Nevada has not shown that the regulations have not been satisfied explicitly or implicitly. *See High-Level Waste Repository*, LBP-08-10, 67 NRC at 450, 455.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-146 is inadmissible because it fails to provide supporting alleged facts or expert opinions as required by 10 C.F.R. § 2.309(f)(1)(v). Nevada states that its "contention raises a purely legal question, and supporting facts and opinions are not necessary beyond those discussed below." NEV Petition at 771. The information Nevada sets forth does not, however, provide the requisite facts or expert opinions to support Nevada's assertion that Part 63 requires final design information to be submitted and approved before issuance of a construction authorization.

Nevada refers to a number of SAR subsections, the lack of a final TAD design, and cites to its July 21, 2008 pleading for specific examples of deficiencies. *See id.* at 771. Nevada also references its June 4, 2008 petition to demonstrate that this contention is within the scope of the proceeding. *Id.* at 770. Nevada does not, however, provide any regulatory authority nor does it specifically refer to the legal discussions in its earlier pleadings to support the allegation that Part 63 requires final design information. *See id.* at 770-771. Other than simply asserting DOE's design information is deficient because it is not final, Nevada offers no explanation or support as to why the descriptions provided in the SAR are insufficient. *See id.* Bare assertions cannot support the admission of this contention. *See Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc*. (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

With respect to Nevada's references to its earlier filings, the Board should not have to search through Nevada's pleadings and other materials in search of support for the assertion that the regulations require final design information. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 457 (2006). However, a review of the June and July 2008 pleadings indicates that they also fail to show that Part 63 requires that "final designs" be submitted and approved before the Commission can issue a construction authorization. *See*

66 Fed. Reg. at 55,739.

Nevada also refers to a DOE document stating that "engineering drawings prepared for the LA will be preliminary design drawings" to support this contention. *See* NEV Petition at 771 (citing "Desk Top Instructions for Preparing Preliminary Design Drawings for License Application" at Sect. 3.1 at 3 (Jan. 14, 2004) (LSN No. DN2001625181)). However, DOE's Desk Top Instructions also state that "[p]reliminary design drawings should provide sufficient information such that a person technically qualified in the subject can understand the design and verify the adequacy of the drawing to support the design to meet the requirements of for which the design is being prepared (i.e., LA)." LSN No. DN2001625181 at Sect. 2.3 at 3. Furthermore, the sentence which immediately precedes Nevada's citation states that "[t]he level of detail needed in design drawings should be commensurate with the purpose for which the design is being prepared (LA, procurement, construction, and operations) and increases as the design develops." *Id.* at Sect. 3.1 at 3. The Desk Top Manual does not support Nevada's position that the descriptions of its pre- and post-closure designs are legally insufficient because they are preliminary and conceptual. *See* NEV Petition at 771-772.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-146 fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Here, Nevada argues that Part 63, considered with its history and interpretations, requires that "final design be submitted and approved before a construction authorization may be issued." *See* NEV Petition at 771. Nevada has failed to show a genuine dispute exists on a material issue of law because, as discussed above, the Commission's regulations do not require final design information be submitted and approved before issuance of a construction authorization. Furthermore, Nevada has not provided supporting facts, regulatory authority, or a reasoned explanation as to why the application is unacceptable in a material respect; Nevada simply makes the bare

and conclusory assertion that the design information is deficient because it is not final (*see* NEV Petition at 771-772). *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) ("The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant."). Therefore, NEV-SAFETY-146 fails to satisfy 10 C.F.R. § 2.309(f)(vi).

For the reasons set forth above, NEV-SAFETY-146 is inadmissible because it fails to meet 10 C.F.R. § 2.309(f)(1)(iv), (v), and (vi).

NEV-SAFETY-147 - EVALUATION OF DATA USED IN DRIP SHIELD FAILURE PROBABILITY

> SAR Subsection 2.3.6.8.4.3.2.4 and similar subsections, which give an estimate for the occurrence that a drip shield is improperly installed in the repository, fail to provide an appropriate technical basis for parameter ranges and probability distributions used in the performance assessment due to the use of inappropriate data.

NEV Petition at 774. NEV-SAFETY-147 claims that DOE's estimate for the probability that a drip shield will be installed improperly is based on data developed for nuclear power plants, and is therefore not applicable to the conditions present at Yucca Mountain. *Id.* Consequently, any reliance on this data could introduce errors into the calculated drip shield failure probability. *Id.* at 776.

Staff Response

As discussed below, however, Nevada's contention is not supported by expert fact or opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Here, although Nevada provides a reference to expert opinion, those experts fail to explain the basis for their opinion. Nevada's experts simply assert, without explanation that the human factors reliability analyses used by DOE ("Handbook of Human Reliability Analysis with Emphasis on Nuclear Power Plant

Applications Final Report," NUREG/CR-1278 (1983), LSN# DN2002064865 and "Savannah River Site Human Error Data Base Development for Nonreactor Nuclear Facilities (U)" (02/28/1994) LSN# DEN001584210) are irrelevant to the high level waste repository. Nevada asserts that using human reliability studies applicable to the nuclear industry is inappropriate: "[I]t would be more appropriate to state that because the procedures and equipment that will be put into service [at Yucca Mountain] have not been specified, no reliance can be placed on generic factors for other purposes that have not been demonstrated to be relevant to the proposed application." NEV Petition at 776. Nevada's experts go on to note that when the generic human factors, *i.e.,* those applicable to the nuclear industry, are used multiplicatively, errors will be compounded and "could" be several orders of magnitude. *Id.* As a consequence, Nevada asserts, the drip shield failure probability "could" be in error. These are simply conclusory, speculative statements that are not supported with any further explanation or discussion of the underlying basis for Nevada's belief that it is inappropriate to use human reliability studies from the nuclear industry. Nevada does not state that DOE has inappropriately applied the methodology of calculating human error rates; rather, Nevada's experts simply conclude that it would be more appropriate not to rely on the "generic factors." Nevada does not offer any bases for why those factors are inappropriate, other than the specific conditions at Yucca Mountain are different from those studied. *Id.* at 775. This ignores the fact that NUREG/CR-1278 was developed for human performance in nuclear power operation, but its model was developed based on human performance in various industries including nuclear, chemistry, and the military. With appropriate consideration of the similarities of contextual situations (*e.g.,* whether the crew is under stress) and the types of human activities (*e.g.,* skill-, rule-, or knowledge- based activities), application of theses studies is appropriate. *See* NUREG/CR-1278 and "Evaluation of Human Reliability Analysis Methods Against Good Practices" NUREG-1842, (September 2006) at 3-10. Furthermore, Nevada does not address how

human error probabilities should be determined if the nuclear industry studies are not used. Such assertions that DOE is "wrong" without any supporting bases do not satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v). *See USEC*, CLI-06-10, 63 NRC at 472. Consequently, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact . . . The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Nevada, in challenging DOE's application, simply refers to SAR Subsection 2.3.6.8.4.3.2.4 "and similar subsections" in asserting that the DOE's reliance on NUREG/CR-1278 and the Savannah River study is not appropriate because it is "based on generic data derived for purposes remote from those of relevance to the procedures and equipment that will [be] put into service in the sub-surface at Yucca Mountain." NEV Petition at 776. However, as noted above, Nevada does no more than make conclusory statements regarding the alleged inappropriate reliance by DOE on these studies. As a result Nevada merely concludes that DOE's human factors reliability computations with respect to improper installation of drip shields "could" be erroneous by several orders of magnitude. *Id.* Nevada asserts that DOE has failed to comply with 10 C.F.R. § 63.114(b) "because [the overall error

in the assessed frequency of improper drip shield installation] does not provide an appropriate technical basis for parameter ranges and probability distributions used in the performance assessment." *Id.* at 777. However, Nevada provides no technical support for this conclusion and consequently does not establish that there is a genuine dispute with respect to DOE's compliance with the regulation. Such assertions are not sufficient to support admission of the contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone Nuclear Power Station*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-147 should, therefore, be dismissed.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 777, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 147 asserts that possibly thousands of changes would need to be made

to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 777. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 777. Therefore, with respect to this part of the NEV-SAFETY-147, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.6.8.4.3.2.4 and “similar” subsections. NEV Petition at 774,776. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For all the foregoing reasons, this contention is inadmissible.

NEV-SAFETY-148 - EVALUATION OF COMPUTATIONAL PROCEDURE USED IN DRIP SHIELD FAILURE PROBABILITY

> SAR Subsection 2.3.6.8.4.3.2.4 and similar subsections, which give an estimate for the occurrence that a drip shield is improperly installed in the repository, fail to provide an appropriate technical basis for parameter ranges and probability distributions used in the performance assessment due to manipulation of the underlying human reliability data by use of an inappropriate computational procedure.

NEV Petition at 778. NEV-SAFETY-148 claims that the estimates provided regarding the probability that a drip shield will be improperly installed "fail to provide an appropriate technical basis for parameter ranges and probability distributions used in the performance assessment due to manipulation of the underlying human reliability data by use of an inappropriate computational procedure." *Id.* at 778.

Staff Response

As discussed below, however, Nevada's contention is not supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, the contention should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. "[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion . . . ." *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (internal citation omitted). Here, although Nevada provides two experts who attest to the information in paragraph 5, they fails\ to explain the basis for their opinions. *See* NEV Petition, Attachment 3, Affidavit of

Michael C. Thorne; Attachment 9, Affidavit of Doug F. Hambley. Nevada's experts simply assert, without explanation, that "[c]ommon sense would question whether a process that relies entirely upon human skill and judgment . . . can achieve a failure rate of below one in one hundred million." NEV Petition at 780. Nevada's experts go on to discuss some factors that "are likely" to make the DOE approach erroneous, which include a "tendency to switch off or ignore" quality control measures or to continue operations when a system is out of operation and operators ignoring warning annunciators. *Id.* at 780. These are simply conclusory, speculative statements that are not supported with any further explanation as to why these factors are of particular concern or how consideration of these factors would impact the drip shield failure probability. Nevada's experts conclude, that "because the procedures and equipment that will be put into service to ensure accurate drip shield emplacement have not been specified, and because various key factors are neglected in the analysis, no reliance can be placed on the overall frequency derived by DOE for the occurrence that a drip shield is improperly installed." *Id.* at 781. Although Nevada's experts attest to these assertions, they fail to explain why such methods employed by DOE are insufficient. Rather, Nevada's experts simply make conclusory statements that what DOE did was insufficient apparently based on "common sense." *See USEC*, CLI-06-10, 63 NRC at 472. As such, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) and this contention should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

This contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna

Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application). "The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant . . . . He or she must 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted).

Nevada, in challenging DOE's TSPA, simply refers to SAR Subsection 2.3.6.8.4.3.2.4 "and similar subsections" in asserting that the TSPA underestimates the frequency of drip shield installation failures because DOE has failed to properly consider human reliability factors. NEV Petition at 781. However, as noted above, Nevada does no more than make conclusory statements regarding the alleged inadequacy of DOE's analysis and underlying assumptions regarding human reliability in the installation of the drip shields. As a result Nevada merely concludes that DOE's computational procedure with respect to drip shield failure probability is inadequate, which is not sufficient to support admission of this contention under 10 C.F.R. § 2.309(f)(1)(vi). *See Millstone*, CLI-01-24, 54 NRC at 358. For the foregoing reasons, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-148 should, therefore, be dismissed.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 782, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* Thorne Affidavit. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)

(citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

NEV-SAFETY-148 also asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention.. . . . ." NEV Petition at 782. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 782. Therefore, with respect to this part of the NEV-SAFETY-148, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

Finally, this contention also seeks to raise a dispute with SAR subsection 2.3.6.8.4.3.2.4 and “similar” subsections. NEV Petition at 778. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For all the foregoing reasons, this contention is inadmissible.

NEV-SAFETY-149 - DEVIATION IN DESIGN AND WASTE EMPLACEMENT

> Legal issue: In SAR Subsection 2.2.1.2 at 2.2-17, DOE excludes deviations from repository design or errors in HLW emplacement from events considered in the TSPA (FEP 1.1.03.01.0A) on purely legal grounds that are unexplained and erroneous.

NEV Petition at 783. In this contention, Nevada asserts that DOE has improperly excluded from its TSPA deviations from repository design or errors in HLW emplacement. *Id*. Nevada has characterized this issue as "purely legal" and alleges that DOE's exclusion of FEP 1.1.03.01.0A (deviations from repository design or errors in HLW emplacement) on purely legal grounds is unexplained. *Id.*

Staff Response

The NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant… He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the

application or that mistakenly asserts the application does not address a relevant issue can be dismissed.")

In this contention, Nevada states that in SAR Subsection 2.2.1.2 at 2.2-17 DOE "excludes deviations from repository design or errors in HLW emplacement from events considered in the TSPA (FEP 1.1.03.01.0A) on purely legal grounds that are unexplained and erroneous." NEV Petition at 783. Nevada alleges that DOE excludes deviations in design or errors in waste emplacement "on the basis of regulation," but that DOE has failed to cite the regulation relied upon and "it appears from the discussion that this FEP is excluded because DOE believes it must be assumed that the repository will be constructed and operated exactly as proposed…" NEV Petition at 784. As outlined below, DOE's basis for exclusion of the FEP requires cross-referencing documents (which are noted in the contention); however, the DOE does provide a basis for exclusion of the FEP.

FEP 1.1.03.01.0A is not explicitly, or implicitly, addressed in SAR Subsection 2.2.1.2 at 2.2-17. However, FEP 1.1.03.01.0A is listed in Table 2.2-5 of the SAR as meeting the "Low Consequence Criteria." SAR at 2.2-212. The basis for listing a FEP as "Low Consequence" is discussed in SAR Subsection 2.2.1.2 at 2.2-17. DOE provides the basis for its determination that FEP 1.1.03.10.0A should be excluded in "Features, Events and Processes for the Total System Performance Assessment: Analyses" (03/06/2008), LSN# DEN001584824 at 6-39 and 6-40 (cited by Nevada in paragraph 5 of its contention). In its discussion of FEP 1.1.03.01.0A in this document, DOE states that the analysis for waste emplacement is tied to quality control, which is discussed in detail with respect to another excluded FEP (FEP 1.1.08.00.0A). *See* "Features, Events and Processes for the Total System Performance Assessment: Analyses" at 6-39, 6-52-6-61. In that analysis, DOE explains its basis for why FEP 1.1.03.01.0A can be excluded based on low consequence, relying in part on the Quality Assurance/Quality Control requirements.

DOE also discusses in the SAR its basis for determining that FEPs meeting the low-consequence criteria can be excluded by regulation. SAR Subsection 2.2.1.2 discusses the regulatory framework for excluding FEPs and makes numerous citations to the NRC's proposed regulations in 10 C.F.R. Part 63 (70 Fed. Reg. 53,313 (Sept. 8, 2005)). These rules are not yet final, but do not differ materially from the current regulations for purposes of excluding FEP 1.1.03.01.0A or evaluating this contention. Under current regulations, very unlikely FEPs (i.e., those that are estimated to have less than one chance in 10,000 of occurring within 10,000 years of disposal) shall not be considered in DOE's performance assessments. *See* 10 C.F.R. § 63.342. In justifying why FEPs that meet the "Low Consequence Criteria" can be excluded, DOE cites to the proposed 10 C.F.R. § 63.342(a), which states, in part, "DOE's performance assessments need not evaluate the impacts resulting from any features, events, and processes or sequences of events and processes with a higher chance of occurrence if the results of the performance assessments would not be changed significantly…" SAR Subsection 2.2.1.2 at 2.2-17. This language also appears in the current rule at 10 C.F.R. § 63.342.

Thus, contrary to Nevada's assertions, DOE has addressed the regulatory and technical bases for exclusion of deviations in design and waste emplacement in the documents referenced by Nevada in this contention. Consequently, Nevada has not demonstrated that there is a genuine dispute on a material issue of law with respect to DOE's determination to exclude deviations in design and waste emplacement from consideration of the TSPA. Nevada has not cited to a law or regulation that specifically requires consideration of deviations in waste emplacement or repository design in the TSPA, nor has Nevada provided any information to show that DOE's reliance on the proposed (or current) rule to exclude very unlikely events, or low consequence events, including this FEP, was not legally permissible. Moreover, Nevada fails to provide any information to dispute DOE's technical assertion that this FEP meets the low consequence criteria. Any contention that fails directly to controvert

the application or that mistakenly asserts the application does not address a relevant issue can be dismissed. *See PPL Susquehanna LLC,* 66 NRC at 24. As DOE has addressed the technical and regulatory basis for exclusion of repository design and errors in waste emplacement, this contention is not admissible because it fails to raise a material issue of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi).

For all the foregoing reasons, this contention is inadmissible.

NEV-SAFETY-150 - BASALTIC MAGMA MELTING DEPTH

> SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, which indicate that the probability of igneous activity disrupting a repository drift is 1.7 x 10^{-8} events/year, underestimates that probability, likely by two or more orders of magnitude, because it is assumed incorrectly that melting to produce basaltic magma will be in the shallow lithospheric mantle and not in the deeper asthenosphere.

NEV Petition at 786. In the contention (which is virtually identical to NEV-Safety-156), Nevada asserts that DOE's assessment of the probability of igneous activity disrupting a repository drift assumes shallow melting produces basaltic magma and thus underestimates the probably of igneous activity, "likely by two or more orders of magnitude." NEV Petition at 786.

Staff Response

This contention should be rejected because it fails to meet requirements for admission under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations*." See id.* at 455 (citation omitted). The contention is not minimally supported.

Nevada, citing the SAR and other documents, asserts that DOE's "assumption" that basaltic magma is generated in the shallow lithosphere "infers a dwindling supply of new basalt and little chance of future events," and does not account for published data and

interpretations that melting is in the deeper asthenosphere, indicating more active future igneous activity and a higher probability of disruption of repository drifts. NEV Petition at 786. Nevada claims that deep melting more accurately explains volcanism that occurred during the last 10 million years. NEV Petition at 789-90. Nevada, however, fails to provide a reasoned basis that addresses or explains why the alleged existence of deeper melting magma would indicate a greater frequency in future igneous activity or shows that DOE has underestimated that frequency by "two or more orders of magnitude." *See* NEV Petition at 786, 792. Thus, the contention is not supported.

The affidavit of Dr. Eugene Smith contains the statement that he adopts as his "own opinion" statements made in paragraph five of the Petition (for contentions listed in Appendix B of his affidavit). NEV Petition, Attachment 11, Affidavit of Dr. Eugene I. Smith ¶ 2. Because the affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess the basis for his opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 (n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the

Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada's claims about basaltic magma fall short of providing a reasoned basis that addresses or explains why the alleged existence of deeper melting magma would indicate a greater frequency in future igneous activity. Nevada does not provide an analysis or reference that supports its conclusion that the probability of future igneous activity would be significantly changed such that it would make a difference with respect to a finding of "reasonable expectation" finding necessary to support the action under 63.31(a)(2). None of the work cited in support of the contention provides an estimate of future igneous activity. *See* NEV Petition at 788-91. Thus, Nevada's speculation that consideration of deeper melting magma will likely change the probability of igneous activity by "two or three orders of magnitude" does not raise a genuine dispute regarding a material issue of law or fact. *See* NEV Petition at 792.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 792 does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare

assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-150 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 792. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 792. Therefore, with respect to this part of the NEV-SAFETY-150 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.2.2.2.3.1, 2.3.11.2.2 and "related" sections. NEV Petition at 786, 792. To the extent that Nevada seeks to raise an issue with a "related" SAR section, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309(f)(1)(v) and (vi) and should be rejected.

NEV-SAFETY-151 - TIME SPAN OF BASALTIC VOLCANISM

> SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, which indicate that the probability of igneous activity disrupting a repository drift is 1.7 x 10^{-8} events/year, underestimates that probability, likely by two or more orders of magnitude, because DOE ignored the entire 11 million year span of basaltic volcanism near Yucca Mountain.

NEV Petition at 794. In the contention (which is virtually identical to CLK -Safety-4), Nevada asserts that DOE's assessment of the probability of igneous activity disrupting a repository drift assumes shallow melting and thus underestimates the probably of igneous activity, "likely by two or more orders of magnitude" because it only uses a five million year record of basaltic volcanism. *Id*.

Staff Response

This contention should be rejected because it fails to meet requirements for admission under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations*."* *See id.* at 455 (citation omitted). The contention is not minimally supported.

Nevada, citing the SAR and a 2007 paper, asserts that during the past 11 million years, two "super episodes"" of volcanism occurred, and that the eruption at Lathrop Wells 78,000 years ago "may" represent the beginning of a "new eruptive episode." NEV Petition at 795-

97. Nevada notes that the SAR states that volcanism "has waned," based in part on recurrence intervals of volcanism during the last five million years, and asserts, without any reference to a calculation or qualitative analysis, that DOE "likely" underestimates the probably of igneous activity disrupting a drift "by two or more orders of magnitude." *Id*. In addition, there appears to be statements in the SAR that contradict the contention's statement that DOE has "ignored" the entire 11 million span" of volcanism, and indicate that DOE considered the 11 million year record. *See, e.g.,* SAR at 2.3.11-16 ("small volume basaltic volcanism has continued into the Quaternary as part of the general decline in eruption volume over the past 11 million years in the region"). Thus, the contention is not supported.

The affidavit of Dr. Eugene Smith contains the statement that he adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 11, Affidavit of Eugene I Smith ¶ 2. Because the affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess (or identify) his opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3),

CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp*. (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada's claims about basaltic magma generation over time fall short of providing a reasoned basis that addresses or explains why consideration of the time span of volcanism would indicate a greater frequency in future igneous activity. Statements in the SAR contradict the contention's statement that DOE has "ignored" the entire 11 million span" of volcanism, and indicate that DOE considered the 11 million year record. *See, e.g.,* SAR at 2.3.11-16 ("small volume basaltic volcanism has continued into the Quaternary as part of the general decline in eruption volume over the past 11 million years in the region"). Nevada does not provide an analysis or reference that supports its conclusion that the probability of future igneous activity would be significantly changed such that the it would make a difference with respect to a finding of "reasonable expectation" finding necessary to support the action under 10 C.F.R. § 63.31(a)(2). None of the work cited in support of the contention provides an estimate of future igneous activity or supports Nevada's statement that DOE underestimated the probability of igneous activity "likely by two or more orders magnitude." *See* NEV Petition at 795-97. Thus, the contention does not raise a genuine dispute regarding a material issue of law or fact.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 798 does not satisfy the showing required to meet the requirements of 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 151 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 798. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting

forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 798. Therefore, with respect to this part of the NEV-SAFETY-151 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.2.2.2.3.1, 2.3.11.2.2 and "related" and "similar" sections. NEV Petition at 794, 797. To the extent that Nevada seeks to raise an issue with a "related" or "similar" SAR section, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" or "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" or "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has

also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309(f)(1)(v) and (vi) and should not be admitted.

NEV-SAFETY-152 - FOCUS ON UPPER CRUSTAL EXTENSION PATTERNS

> SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, which indicate that the probability of igneous activity disrupting a repository drift is 1.7×10^{-8} events/year, underestimate that probability, likely by two or more orders of magnitude, because DOE focuses improperly on upper crustal extension patterns to explain volcano location and the timing of volcanic events.

NEV Petition at 799. In its contention (which is virtually identical to CLK-SAFETY-005), Nevada asserts that DOE used crustal structure and extension rates to explain the location and timing of volcanic activity near Yucca Mountain. *Id.* Nevada claims that DOE ignored the role of the asthenospheric mantle and lateral viscosity variations in both the lithospheric and asthenopheric layers, which can produce upwelling flow. NEV Petition at 800-803. Nevada also asserts that basaltic volcanism is determined by thermal anomalies, topography at the base of the lithosphere, and patterns of the mantle flow control the location and timing of volcanism. NEV Petition at 799, 801.

Staff Response

This contention is similar to NEV-SAFETY -150 and is not admissible under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations*." See id.* at 455 (citation omitted). The contention is not minimally supported.

Nevada, citing the SAR and other document, asserts DOE does not understand the

processes that control volcanism. *See* NEV Petition at 799, 800-805. Nevada proffers information that explains its views about the role of the mantle in the location and timing and basaltic magmas. *See* NEV Petition at 799-805. However, Nevada does not proffer a minimally sufficient factual or technical basis to support its claim that DOE has underestimated the probability of igneous activity disrupting a repository drift "likely by two or more orders of magnitude." *See id*. at 799. Nevada does not relate its discussion of upwelling to rates to DOE's probability calculations. *See* Petition at 800-805. The conclusory assertion is that deeper melt generation will yield more frequent igneous activity, is not supported by a rationale (or calculation) that demonstrates the impact on probability estimates (other than the bare assertion that additional runs of the TSPA would yield different results). *See* NEV Petition at 806-808.

The Affidavit of Dr. Eugene Smith (Attachment 11) contains the statement that he adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of his affidavit). Because the affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess (or identify) his opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute on a Material Issue

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3),

CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Although Nevada claims DOE does not understand (or does not have the proper focus on processes that cause basaltic melting), and as a result, underestimated the probability of igneous activity, see NEV Petition at 800-806, its statements fall short of providing a reasoned basis that addresses or explains why the alleged existence of deeper melting magma would indicate a greater frequency in future igneous activity or raising a genuine dispute with the Applicant. DOE indicated that interpretations of how and where magmas form, and what processes control the timing and location of magma ascent through the crust, underpin its model of volcanism. See SAR Section 2.2 at 2.2-96. DOE noted, "Some PVHA experts distinguished between deep (mantle source) and shallow (upper crustal structure and stress field) processes when considering different scales (regional and local) of spatial control on volcanism." SAR Section 2.2 at 2.2-97. Thus, it does not appear that DOE limits its focus to upper crustal extension patterns. Nevada does not provide an analysis or reference that supports its conclusion that the probability of future igneous activity would be significantly changed such that the it would make a difference with respect to a finding of "reasonable expectation" finding necessary to support the action under 63.31(a)(2). None of

the work cited in support of the contention provides an estimate of future igneous activity. See NEV Petition at 801-05. Thus, contention does not raise a genuine dispute regarding a material issue of law or fact.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, see NEV Petition at 806, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. See NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc*. (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). See also *PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-152 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 806-07. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA

Nevada believes would need “many thousands of possible changes.” Section 2.309(f)(1)(vi) requires “sufficient information to show that a genuine dispute exists on a material issue of law or fact” and references “to specific portions of the application.” “The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner” and boards are not expected to address “arguments not advanced by litigants themselves.” Zion, CLI-99-4, 49 NRC at 194. Nevada needs to identify “specific grievances” and provide other parties “a good idea” of “claims they will be either supporting or opposing.” See Oconee, CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that “there are many thousands of possible changes that would need to be made to DOE’s TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada’s other contentions relating to different aspects of the TSPA,” Nevada offers no explanation of why this is the case. See NEV Petition at 807. Therefore, with respect to this part of the NEV-SAFETY-152 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.2.2.2.3.1, 2.3.11.2.2 and “related” sections. NEV Petition at 799, 805. To the extent that Nevada seeks to raise an issue with a “related” SAR section, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related” or “similar” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards,

unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309(f)(1)(iv) through (vi) and is inadmissible.

NEV-SAFETY-153 - EXCLUSION OF DEATH VALLEY FROM VOLCANISM CALCULATIONS

> SAR Subsections 2.2.2.2.3.1, 2.3.11.2.2 and related sections, which indicate that the probability of igneous activity disrupting a repository drift is 1.7 x 10-8 events/year, underestimate that probability, likely by two or more orders of magnitude, because DOE does not include the Death Valley volcanic field in the Greenwater Range as part of the area to be considered for hazard calculations.

NEV Petition at 808. In this contention (which is virtually identical to CLK-SAFETY-006), Nevada claims that DOE underestimates that probability of igneous activity (likely by two or three orders of magnitude) because DOE did not include the volcanoes in the Greenwater Range near Death Valley as part of the volcanic field around Yucca Mountain and the size of the field used for the calculation of igneous activity should be expanded to include the volcanic field. *Id.* at 811.

Staff Response

This contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted). The contention is not minimally supported.

Nevada asserts that the Greenwater Range is in close proximity to Crater Flat, has volcanic activity similar in age to Yucca Mountain, has similar mineralogy and chemistry to

basalt from Crater Flat, and "clearly represent the southern extension of the field of volcanism." NEV Petition at 808-11. Nevada also asserts that the larger volcanic field should be considered in "any calculation at repository disruption by volcanic activity." *Id.* at 808, 812. Nevada, however, has not proffered a minimally sufficient factual or technical basis to support its claim that calculations of repository disruption without consideration of the Greenwater volcanoes underestimate the probability of igneous activity disrupting a repository drift "likely by two or more orders of magnitude." *See id.* at 808. The conclusory assertion that consideration of these additional volcanoes would significantly increase the probability is not supported (other than the bare assertion that additional runs of the TSPA would yield different results). *See* NEV Petition at 812. Nevada cites no data or analysis to support its position regarding inclusion of the information. Such unsupported statements are not sufficient for admission. *See USEC*, CLI-06-10, 63 NRC at 472.

The affidavits of Drs. Eugene Smith and Michael Thorne contain the statement that each adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 11, Affidavit of Eugene I. Smith ¶ 2; Attachment 3, Affidavit of Michael C. Thorne ¶ 2. Because the affidavits do not set forth a reasoned basis for Nevada's position, it is difficult to assess the expert opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada provides no rationale or analysis to support its claim that DOE underestimated (by two or more orders of magnitude) the probability of an igneous event. *See* NEV Petition at 811. Thus, it does not appear that the contention is supported by expert opinion. Therefore, this contention does not meet 10 C.F.R. § 2.309(f)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada's contention fails to show a genuine dispute with DOE on a material issue because Nevada ignores information that suggests DOE did consider the volcanic field in the Greenwater Range. DOE's estimate of the mean annual frequency of a volcanic event disrupting the repository was determined by a Probabilistic Volcanic Hazards Assessment using an expert elicitation process. *See* SAR Section at 2.3.11-9, 2.3.11-14 (citing CRWMS M&O 1996, Probabilistic Volcanic Hazards Analysis for Yucca Mountain Nevada, BA0000000-01717-2200-00082 Rev. 0 (LSN#DEN000861156) (PVHA Report). For example, a figure in DOE's PVHA Report includes a region designated as Amargosa Valley Isotopic Province that extends beyond the 20 km range cited by Nevada as the distance to the Greenwater Range. See PVHA Report, Fig. 3-23 ("Alternative regions of interest used as

background source zones in Bruce Crowe's PVHA model") at 3-75. Thus, it appears that Nevada is incorrect when it contends that DOE "did not include the Death Valley volcanic field in the Greenwater range as part of the area to be considered for hazard calculations." *See* NEV Petition at 808.

Further, Nevada's assertion that the Greenwater Range volcanic field must be included (due to its proximity and similarity to volcanoes at Crater Flat) does not show that consideration of the volcanic field would indicate a greater frequency in future igneous activity. Nevada does not provide an analysis or reference that supports its conclusion that the probability of future igneous activity would be significantly changed or make a difference with respect to a of "reasonable expectation" necessary to support the action under section 63.31(a)(2). None of the work cited in support of the contention provides an estimate of future igneous activity. *See* NEV Petition at 788-91. Thus, the contention does not raise a genuine dispute regarding a material issue of law or fact.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 812, does not satisfy the showing required to meet requirements of 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.*

(Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 153 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 812. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 812. Therefore, with respect to this part of the NEV-SAFETY-153, Nevada

fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In sum, the contention fails to satisfy 10 C.F.R. §2.309(f)(1)(v) and (vi) and should be rejected.

NEV-SAFETY-154 - IGNEOUS EVENT PROBABILITY FOR 10,000 YEARS AND 1,000,000 YEARS

> DOE wrongly assumes in SAR Subsections 2.3.11 and 2.3.11.1 and related subsections that its approach to estimating the probability of igneous events for the first 10,000 years is applicable to the probability estimate for the period from 10,000 to 1,000,000 years as well, because its approach fails to consider deep melting models or the entire period of volcanism from 11 million years to the present.

NEV Petition at 813. In this contention (which is virtually identical to CLK-SAFETY-007), Nevada claims that the DOE SAR only briefly mentions periods greater than 10,000 years and that bases it estimated annual frequency of intersection by volcanism on the "overall stability of the region over the last 2 million years," but fails to "consider deep melting models" or the "11 million year[ ]" period of volcanism. NEV Petition at 813.

Staff Response

This contention is inadmissible under 10 C.F.R. § 2.309(f)(1). Nevada asserts, without reference to a regulation, that DOE "essentially ignores" the "requirement" to consider "compliance periods as long as 1,000,000 years," and that DOE claims that calculations for the 10,000 year period also apply to longer compliance periods. *See* NEV Petition at 814. Thus, it appears that this contention relates to the one million year compliance period in 40 C.F.R. § 197.13(a), the standard recently issued by the Environmental Protection Agency (EPA). *See* Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada, 73 Fed. Reg. 61,256 (Oct. 15, 2008). The NRC has not yet published a final rule implementing the EPA dose standard. *See* Implementation of a Dose Standard After 10,000 Years [Proposed Rule], 70 Fed. Reg. 53,313 (Sept. 8, 2005).

To the extent this contention challenges or seeks to raise an issue that is the subject of an ongoing rulemaking, it must be rejected. "[N]o challenge of any kind is permitted. . . as to a regulation that is the subject of ongoing rulemaking." *Wisconsin Electric Power Co.* (Point

Beach Nuclear Plant, Unit 2), ALAB-78, 5 AEC 319 (1972). Further, licensing boards "should not accept in individual license proceedings contentions which . . . are about to become . . . the subject of general rulemaking." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345 (1999). To consider in adjudicatory proceedings "issues presently to be taken up by the Commission in rulemaking would be, to say the least, a wasteful duplication of effort." *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 & 2), ALAB-218, 8 AEC 79, 85 (1974). Thus, to the extent that the contention challenges the longer period of geological stability (i.e., one million years), it is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations*." See id.* at 455 (citation omitted). The contention is not minimally supported.

Nevada, citing the SAR and other documents, asserts that, as explained in NEV-SAFETY-150 and NEV-SAFETY-151, DOE's "shallow melting model infers that volcanic activity will be less vigorous in the future and that the number of events will be small and infrequent." NEV Petition at 814-15. Nevada claims (1) deep melting models are important for the one-million year compliance period because of "peaks of activity" in the Yucca Mountain area every one to two million years and because the models "predict a more active volcanic future with a higher probably that volcanism will become more vigorous," and (2) the implication of deep melting models and the "entire volcanic record" is that a "third super

episode" may occur. *See* NEV Petition at 815-16. Nevada, however, has not proffered a minimally sufficient factual or technical basis to support its claims that the probability of igneous events are underestimated "likely by two or more orders of magnitude." *See* NEV Petition at 816.

The affidavits of Drs. Eugene Smith and Michael Thorne contain the statement that each adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 11, Affidavit of Eugene I. Smith ¶ 2; Attachment 3, Affidavit of Michael C. Thorne ¶ 2. Because the affidavits do not set forth a reasoned basis for Nevada's position, it is difficult to assess the expert opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Nevada provides no analysis to show that inclusion of the expanded date range or deep melting model would increase (by two or more orders of magnitude) the probability of an igneous event. *See* NEV Petition at 814-817. Thus, it is does not appear that the contention is supported by expert opinion. Therefore, the contention does not meet the requirements of 10 C.F.R. § 2.309(f)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the

Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada fails to raise a genuine dispute on a material issue because it appears that the application considers both deep melting models and the 11-million year period of volcanism.

DOE discusses igneous activity occurring in the region as long as 14 million years ago. SAR Chapter 2 at 2.3-15 ("the earliest volcanism in the Yucca Mountain region was dominated by a major episode of . . . volcanism that occurred between 15 and 11 million years ago . . . ."). DOE also states that "(t)hree other basalt units encountered by drilling ranged in age from approximately 9.5. million years to 11.2 million years." SAR Chapter 2 at 2.3.11-17. Thus, it appears that Nevada is mistaken in its belief that the SAR does not consider the longer period of volcanism.

In addition, DOE's estimate of the mean annual frequency of a volcanic event disrupting the repository was determined by a Probabilistic Volcanic Hazards Assessment using an expert elicitation process. *See* SAR Chapter 2 at 2.3.11-9 (citing CRWMS M&O 1996, Probabilistic Volcanic Hazards Analysis for Yucca Mountain Nevada, BA0000000-01717-2200-00082 Rev. 0 (LSN#DEN000861156) (PVHA Report). The PVHA Report contains discussions regarding magma, including generation depth. *E.g.,* PVHA Report, Appendix E, "Elicitation Interview Summaries," at RC-2 of 22 (discussing maximum depth of magma generation of around 100-150 km for post-5-million year basalt).

Moreover, Nevada does not provide an analysis or reference that supports its conclusion that the probability of future igneous activity would be significantly changed or make a difference with respect to a finding of "reasonable expectation" necessary to support the action under section 63.31(a)(2). None of the work cited in support of the contention provides an estimate of future igneous activity. *See* NEV Petition at 814-17. Thus, Nevada fails to raise a material issue with respect to DOE's statements (in SAR Chapter 2 at 2.3.11-1 and 2.3.11.1. at 2.3.11-9) that its calculations for the 10,000-year period apply to longer periods and does not satisfy 10 C.F.R. § 2.309(f)(1)(iv).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 817, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 154 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..."

NEV Petition at 817. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 812. Therefore, with respect to this part of the NEV-SAFETY-154, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.11 and 2.3.11.1 and "related" subsections. NEV Petition at 813, 816. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention should be rejected as inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-155 - 11-MILLION YEAR VS. 5-MILLION YEAR VOLCANISM DATA

> DOE's approach to determining the frequency of future igneous events wrongly ignores the data set obtained from core, which along with surface data provides a record of volcanism back to 11 million years that requires consideration, and wrongly relies instead on the chemistry of surface basalt erupted over the past 5 million years. This approach obscures long-term trends and provides an inaccurate prediction of future events.

NEV Petition at 818. In this contention (which is virtually identical to CLK-SAFETY-008), Nevada claims that DOE ignores data from Crater Flat core borings and surface data that indicate an 11-million year geologic history characterized by two super-episodes of volcanism, obscuring long term trends and inaccurately predicting future events. NEV Petition at 818.

Staff Response

This contention is inadmissible under 10 C.F.R. § 2.309(f)(v) and (vi) and should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted). The contention is not minimally supported.

Nevada, citing the SAR and other documents, argues that DOE's claim that "data from buried basalt bodies . . . are consistent with geochemical analyses of basalt sample from surface exposures near Yucca Mountain," is not supported by Clark County-sponsored

research indicating that basalt collected from borings in Crater Flat and the Armagosa Valley is "quite different in chemistry when compared to basalt in the 1.0 million year old cinder cones in Crater Flat." NEV Petition at 819-20 (quoting SAR Section 2.3.11.2.1.1 at 2.3.11-17 and "Report of Research Activities in 2007 Prepared to Satisfy the Requirements of a Clark County Contract for Volcanic Hazard Assessment of the Proposed Nuclear Waste Repository at Yucca Mountain, Nevada" (07/08/2008) (LSN# CLK000000071) at 9-10). Nevada asserts that the core provides a record of a 11 million-year history of volcanism at Yucca Mountain and indicates two episodes of volcanic activity separated by one to 2.5 million-year period of little or no activity. There is a "strong possibility that the Lathrop Wells cone [ca.78,000 years old] may herald the beginning of a new eruptive episode, and thus an underestimate of the probability of igneous activity "likely by two or more orders of magnitude." NEV Petition at 820-821.

Nevada does not explain why consideration of the 11 million year history would change the probability estimate to the extent alleged. Nevada also fails to explain why the Lathrop Wells cone event signals the beginning of a "new eruptive episode," despite its recognition that there has been a one to 2.5 million year period of little or no activity between eruptions in the region. *See* NEV Petition at 820-21. Thus, the contention is not supported.

The affidavits of Drs. Eugene Smith and Michael Thorne contain the statement that each adopts as his "own opinion" certain statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition, Attachment 11, Affidavit of Eugene I. Smith; Attachment 3, Affidavit of Michael C. Thorne. Because the affidavits do not set forth a reasoned basis for Nevada's position, it is difficult to assess the expert opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading

criticized). Nevada provides no rationale or analysis to show that inclusion of the expanded date range would increase (by two or three orders of magnitude) the probability of an igneous event. *See* NEV Petition at 818-22. Thus, it is does not appear that the contention is supported by expert opinion. Therefore, its contention does not meet the requirements of 10 C.F.R. § 2.309(f)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada fails to raise a genuine dispute on a material issue because it appears that the application considers both deep melting models and the 11-million year period of volcanism. DOE discusses igneous activity occurring in the region as long as 14 million years ago. (SAR Section 2.3.11.2.1.1 at 2.3.11-15 ("the earliest volcanism in the Yucca Mountain region was

dominated by a major episode of . . . volcanism that occurred between 15 and 11 million years ago . . . .”). DOE also states that “[t]here other basalt units encountered by drilling ranged in age from approximately 9.5. million years to 11.2 million years.” SAR at 2.3.11-18. Figure 3-62 of the PVHA Report also indicates that volcanism over the past 11 million years was considered in the PVHA, but generally little weight was accorded to events older than 5 million years in model development. *See, e.g.*, Fig. 3.3. These examples indicate that the older period and core data were not ignored and that more that just surface chemistry was considered. Thus, it appears that Nevada is mistaken in its belief that the SAR does not consider the longer period of volcanism or information other than surface chemistry in deriving an estimate of volcanic hazards. As a result, there is no genuine dispute as to a material issue.

Nevada also does not provide an analysis or reference that supports its conclusion that the probability of future igneous activity would be significantly changed or make a difference with respect to a finding of “reasonable expectation” necessary to support the action under section 63.31(a)(2). None of the work cited in support of the contention provides an estimate of future igneous activity. *See* NEV Petition at 814-17. Bare assertions and speculation are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)). Thus, Nevada fails to raise a genuine dispute concerning DOE’s approach for determining the frequency of events. Therefore, the contention should be rejected under 10 C.F.R. § 2.309(f)(1)(vi).

Nevada's reference to "related" SAR subsections, *see* NEV Petition at 821, also fails to meet the § 2.309(f)(1)(vi) requirement that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section requires that information proffered must include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (contention failed to reference a specific portion of the application).

Because Nevada does not specify the other "related" sections of the SAR it wishes to dispute, the contention fails to raise a dispute regarding those unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Board, Staff and Applicant should not have to guess which sections are the "related" sections. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). A purpose of the contention rule is to put other parties the on notice as to a petitioner's specific grievances and claims they will be either support or oppose. *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Given Nevada's failure to identify additional SAR sections which it disputes, this contention, if otherwise found to be admissible, should be limited to raising a dispute only as to the specific SAR subsections identified.

In sum, the contention should be rejected as inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-156 - ALTERNATIVE IGNEOUS EVENT CONCEPTUAL MODELS

> DOE's assessment of the frequency of igneous events does not consider appropriate alternative conceptual models that are consistent with available data and current scientific understanding, with the result that uncertainty is underestimated and not properly characterized.

NEV Petition at 823. In the contention (which is virtually identical to CLK-SAFETY-009), Nevada asserts that DOE's assessment of igneous events (which assumes that shallow melting produces basaltic magma) fails to consider "appropriate conceptual models that are consistent with available data and current scientific interpretation," and thus underestimates and improperly characterizes uncertainty. *Id*.

Staff Response

This contention should be rejected because it fails to meet requirements for admission under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations*."* *See id.* at 455 (citation omitted). The contention is not minimally supported.

Nevada, citing the SAR and other documents, claims that DOE's probability estimate for igneous activity that would disrupt the repository is based on assumptions regarding the depth of basaltic magma and is not consistent with published research, papers and calculations which indicates deep melting models more accurately explain volcanism over

the last 11 million years. NEV Petition at 824-29. Nevada notes that DOE has not updated its 1996 Probabilistic Volcanic Hazards Analysis for Yucca Mountain and that it does not consider this "alternate model" for volcanism. Nevada focuses on the depth of basaltic magma and does not proffer information that shows the failure to consider an alternate model results in an underestimation of uncertainty in DOE's assessment of the probability of future igneous events. Thus, the main concern in the contention is not supported.

The affidavits of Drs. Eugene Smith and Michael Thorne contain the statement that each affiant adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of each affidavit). NEV Petition Attachment 11, Affidavit of Eugene I. Smith ¶ 2; Attachment 3, Affidavit of Michael C. Thorne ¶ 2. However, the affidavits do not set forth a reasoned basis for Nevada's position, making it difficult to assess each affiant's opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL*

Susquehanna LLC (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Although Nevada cites information it believes shows that deep melting of basaltic magma more accurately explains volcanism during the last 10 million years, *see* NEV Petition at 824-29, it does not proffer information that would indicate that its concern would make a difference in the outcome in the proceeding. Nevada has not proffered a reasoned basis that shows the significance of the alleged deficiency with respect to repository performance over the compliance period (i.e., whether it would significantly increase radiological exposures to the RMEI, or radionuclide releases to the accessible environment. Consequently, the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi).

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 830, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The Dr. Thorne's affidavit is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* Thorne Affidavit. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show

that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-156 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 830. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Zion*, CLI-99-4, 49 NRC at 194. Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See

NEV Petition at 830. Therefore, with respect to this part of the NEV-SAFETY-156 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.2.2.3 and "related" subsections. NEV Petition at 823, 829. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention does not satisfy 10 C.F.R. § 2.309(f)(1)(v) and (vi), and should be rejected.

NEV-SAFETY-157 - IGNEOUS EVENT DATA IN THE TSPA

> DOE's assessment of the frequency of igneous events in the LA ignores information and analyses since 1996 which would, if considered, have required a significant change in the total systems performance assessment, and as a result, the LA is not complete and accurate in all material respects.

NEV Petition at 831. In this contention, which is virtually identical to CLK-SAFETY-010, Nevada claims DOE's assessment of the frequency of igneous events ignores information since 1996, which, if considered, would have required a "significant change" in DOE total systems performance assessment, and therefore the LA is not complete and accurate in all material respects. NEV Petition at 831.

Staff Response

The Staff opposes the admission of this contention of omission.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention is not supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted).

Nevada lists 12 documents dated after 1996 that it claims are not considered in the license application. *See* NEV Petition at 832. The only document that it discusses and deems "a major omission" or "critical" is the "Probabilistic Volcanic Hazard Analysis Update (PVHA-U) for Yucca Mountain, Nevada Rev. 01" (09/02/2008) (LSN# DEN001601965). *See id.* Nevada also speculates that the failure to consider this and the other documents results

in an underestimation of the probability of igneous events. See NEV Petition at 833. Nevada concedes the "possibility that changes in hazard assessment models and calculations [would be] modest." *See id*. at 833. Because Nevada offers nothing more than conclusory assertions and does not provide a quantitative or qualitative analysis that shows that the effect of consideration of the PVHA-U or other references, Nevada deprives the Board and parties of the capability to assess their views. *See USEC*, CLI-06-10, 63 NRC at 472. Thus, the contention is not supported.

The affidavit of Eugene Smith contains the statement that he adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of his affidavit). NEV Petition, Attachment 11, Affidavit of Eugene I. Smith. Because the affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess his opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66

NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."). A dispute is material "if its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). Nevada's challenge to DOE's performance assessment with respect to drip shield performance and corrosion raises a dispute with the Applicant, but fails to raise a material issue or law or fact.

The only document Nevada deems a "critical omission" is the PVHA-U. See Petition at 833. Nevada, however, concedes "the possibility that changes in hazards assessments and calculations would be modest" if the results of the PVHA-U were considered. *See id.* Thus, Nevada has not offered a basis to conclude it raises a genuine dispute with the applicant.

In sum, the contention should not be admitted because it fails to satisfy the criteria in 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-158 - GEOPHYSICAL DATA IN DOE'S VOLCANIC MODEL

> High-quality geophysical data is necessary to answer the fundamental question as to whether volcanoes are primarily controlled by upper crustal structure or mantle. DOE's approach to predicting the location and frequency of future eruptions, as reflected in SAR Subsection 2.2.2.2.3.1 and related subsections, relies heavily on upper crustal structures and the local stress field, but does not provide sufficient geophysical data to support this model. This is inadequate because high-quality geophysical data are necessary to confirm or rule out the proposition, supported by the currently available data, that the primary control of the location of a basaltic field near Yucca Mountain is asthenospheric mantle processes.

NEV Petition at 835. In the contention (which is virtually identical to CLK-SAFETY-011), Nevada claims that DOE's approach predicting the frequency and location of volcanoes (and past volcanism) in the vicinity of Yucca Mountain lacks "high quality geophysical data to support the model, which are critical for comparing deep versus shallow melting models by revealing the location of low–viscosity (hot zones). NEV Petition at 835.

Staff Response

The contention is not admissible under 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). A contention must be supported by a minimally sufficient or "reasonably specific factual or legal basis for the petitioner's allegations." *See id.* at 455 (citation omitted). The contention is not minimally supported.

Nevada, citing the SAR and other documents, asserts that DOE's relies heavily on the

"control exerted by upper crustal structures and the local stress field to predict" future igneous activity, that geophysical studies provide important information for predicting the location of future volcanism, that the primary control of the location of a basaltic field is the process in the asthenopheric mantle and not the upper crustal structure or local stress fields. *See* NEV Petition at 837-842.

The Affidavit of Dr. Eugene Smith contains the statement that he adopts as his "own opinion" statements made in the Petition (for contentions listed in Attachment B of his affidavit). NEV Petition, Attachment 11, Affidavit of Eugene I. Smith. Because the affidavit does not set forth a reasoned basis for Nevada's position, it is difficult to assess (or identify) his opinion and the basis for that opinion. *See USEC,* CLI-06-10, 63 NRC at 472 (conclusory opinions without an expert's reasoned basis deprives the board of the ability to assess the opinion); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560 n.16) (intervenor's use of an affidavit that is a wholesale endorsement of a pleading criticized). Thus, it is does not appear that the contention is supported by expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To raise a genuine dispute with the applicant on a material issue of law or fact, the petitioner "must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant," but "must 'read the pertinent portions of the license application, including the Safety Analysis Report . . . [and] state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that

mistakenly asserts the application does not address a relevant issue can be dismissed.”). A dispute is material “if its resolution ‘would make a difference in the outcome of the proceeding.’” Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC at 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)).

Nevada’s claim that DOE did not consider “high-quality geophysical data” does not identify a genuine dispute of material fact with the applicant. Nevada ignores that the PVHA panel report cited in the Application (SAR Section 2.2.2.2, at 2.2-90. *et seq*.) considered geophysical data that was available at the time (1995). *See* “Probabilistic Volcanic Hazards Analysis for Yucca Mountain, Nevada, BA0000000-0717-2200-00082 Rev 0” (6/26/1996) (LSN# DEN000861156) (PVHA Report, Appendix B, at B-1 to B-7). Nevada proffers no information that disputes the quality of this data or that consideration of data concerning the depth of basaltic magma would provide information that would make a difference with respect to a finding that there is a reasonable expectation that radioactive materials can be disposed of without unreasonable risk to the health and safety of the public. Therefore, Nevada fails to show a genuine dispute regarding a material issue of law or fact.

Nevada’s reference to “related” SAR subsections, *see* NEV Petition at 835, 837, 842 also fails to meet the § 2.309(f)(1)(vi) requirement that a contention provide “sufficient information to show that a genuine dispute exists on a material issue of law or fact.” This section requires that information proffered must include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316 (2007) (contention failed to reference a specific portion of the application).

Because Nevada does not specify the other “related” sections of the SAR it wishes to dispute, the contention fails to raise a dispute regarding those unidentified sections. If

Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Board, Staff and Applicant should not have to guess which sections are the "related" sections. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). A purpose of the contention rule is to put other parties on notice as to a petitioner's specific grievances and claims they will be either supporting or opposing. *Oconee*, CLI-99-11, 49 NRC at 334. Given Nevada's failure to identify additional SAR sections which it disputes, this contention, if otherwise found to be admissible, should be limited to raising a dispute only as to the specific SAR subsections identified.

In sum, the contention does not satisfy the requirements of 10 C.F.R. § 2.309(f)(1) and should not be admitted.

NEV-SAFETY-159 – PROPAGATION OF CONCEPUTAL AND PARAMETRIC UNCERTAINITIES THROUGH THE SAFETY ASSESSMENT

> SAR Subsection 2.4.1.1 and similar subsections, which claim that the TSPA approach combines the underlying model abstractions in such a way that it incorporates the estimated ranges of uncertainty in the parameter distributions, model abstractions, and disruptive events and then propagates this uncertainty into estimates of the annual dose, fail to propagate a full range of uncertainties and doing so would require the performance of a substantial number of additional modeling cases.

NEV Petition at 845. NEV-SAFETY-159 claims that the TSPA fails to propagate a full range of uncertainties. *Id*. Nevada claims that at each stage of the development of the TSPA, consideration of alternative methods for partitioning the calculations, selecting alternative models and selecting parameter value distribution, was limited. *Id.* Because of this limitation, Nevada claims the range of uncertainty considered in the results of the TSPA was also limited. *Id*.

Staff Response

As discussed below, however, Nevada's contention is not supported by expert fact or opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exits with the applicant on a material issue of law. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, NEV-SAFETY-159 should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. However, even if a contention references an expert opinion, that expert must still provide the basis or explanation for that opinion. *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Here, although Nevada provides a reference to an expert opinion, that expert fails to explain the basis for his opinion. Nevada's expert simply asserts, without explanation, that by DOE deciding to carry forward "only a

single set of choices at each stage of the TSPA development, the range of uncertainty in the assessment is reduced." NEV Petition at 846. What Nevada's expert fails to explain is how this failure leads to a reduced consideration of uncertainties in any significant manner. Nevada's expert also declares, without any further explanation, that it is necessary to not only evaluate compliance based on statistical uncertainties, it is also necessary to compare the results against "conceptual uncertainties" (that is the scenario and modeling choices DOE made in developing the TSPA). *Id.* at 847. According to Nevada's expert "a full appreciation of the potential overall bias in the assessment can only be achieved by propagating the alternatives separately through the assessment." *Id*. Nevada's expert concludes, that DOE must "adopt[] a broader-based strategy to demonstrate that the full range of relevant calculations have been identified and propagated through the performance assessment." *Id.* at 847-848. Although Nevada's expert makes these assertions, he fails to explain why the methods employed by DOE are insufficient. Rather, Nevada's expert simply makes conclusory statements that what DOE did was insufficient without even addressing, as discussed below, those portions of the SAR where data and model uncertainties are discussed.). *See USEC*, CLI-06-10, 63 NRC at 472 (2006) ("[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate.") (citations omitted). As such, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-159 also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). This section requires that the information include references to specific portions of the application that the petitioner disputes and the supporting reasons for the dispute. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-04, 65 NRC 281, 316, (2007) (Contention found

not to meet criterion 6 because it did not reference a specific portion of the application). Nevada, in challenging DOE's TSPA, simply refers to SAR Subsection 2.4.1.1 in asserting that the TSPA fails to propagate a full range of uncertainties. NEV Petition at 846-47. Nevada references "other contentions" (without even identifying which specific ones) as providing examples of conceptual uncertainties that have not been addressed. *Id*. at 847. Nevada's vague reference to other contentions fails to establish that this contention is admissible. Further, Nevada fails to recognize that in several sections of the SAR, uncertainties and alternative models are discussed. In fact, data and model uncertainties are discussed throughout the SAR. *See e.g.,* SAR Sections 2.3.1 through 2.3.11. For example, SAR Section 2.3.1.3.3.2 discusses alternative studies regarding spatial variability of net infiltration values (SAR at 2.3.1-71) and SAR Section 2.3.7.10.3.2 discusses an alternative conceptual model for neptunium-dissolved concentrations. SAR at 2.3.7-56, 57. As a result Nevada fails to provide any explanation of why DOE's treatment of uncertainties is inadequate. Accordingly, Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact. NEV-SAFETY-159 should, therefore, be dismissed.

NEV-SAFETY-159 seeks to raise a dispute with SAR subsection 2.4.1.1. and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR subsections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other “similar” subsections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named subsection. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific subsections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-159 should be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-160 - PROBABILITY DENISTY FUNCTIONS USED IN THE TSPA

> SAR Subsection 2.4 and similar subsections, which describe and rely upon results from the TSPA, fail to recognize that the probability density functions used in the modeling rely on arbitrary and implicit assumptions, and hence do not fully account for uncertainties and variabilities in parameter values and do not provide for the technical basis for parameter ranges, probability distributions, or bounding values used in the performance assessment.

NEV Petition at 849. In this contention, Nevada asserts that the probability density functions used to evaluate uncertainty in the TSPA are not supported. NEV Petition at 849. In support of its contention, Nevada asserts that the TSPA model uses a wide variety of distribution types and that DOE does not justify selecting one distribution shape over another. NEV Petition at 851.

Staff Response

As discussed below, however, Nevada's contention is not supported by facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Further, Nevada fails to demonstrate that a genuine dispute exits with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, NEV-SAFETY-160 should be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. However, even if a contention references an expert opinion, that expert must still provide the basis or explanation for that opinion. *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) ("[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate.") (citations omitted). Here, although Nevada provides a reference to an expert opinion, that expert fails to explain the basis for his opinion. Nevada makes several assertions regarding DOE's

choice of distributions and states that they are "implicit and arbitrary assumptions." NEV Petition at 852, 853. As a result, according to Nevada, there is a significant source of uncertainty in the assessment that has not been quantified and reported. *Id.* at 854.

At no point, however, does Nevada explain the basis for these conclusions. Rather, Nevada simply points out that DOE used different distributions for different models. *See* NEV Petition at 851-82. But Nevada does not explain the importance of this assertion. Nevada simply notes that the TSPA used a uniform distribution in considering certain models and triangular distribution in other cases. *See* NEV Petition at 851-852. Nevada does not explain why this is inappropriate.

Nevada also fails to explain what impact DOE's alleged misuse of distribution models would have on the overall performance assessment. As an example to support its contention, Nevada states that the C22 corrosion rate selected by DOE has an impact on the timing of radionuclide releases. NEV Petition at 853. Nevada asserts that using one type of distribution will result in a different prediction of the timing of radionuclide release than a different distribution. NEV Petition at 853. However, no explanation is provided by Nevada to explain how this fact, even if true, impacts the overall performance assessment. Because Nevada fails to provide a reasoned basis for its assertions, Nevada fails to meet the requirement of 10 C.F.R. § 2.309(f)(1)(v). *See USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-160 also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). This section requires that the information include references to specific portions of the application that the petitioner disputes and the supporting reasons for the dispute. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application). As

already discussed above, Nevada's assertions regarding DOE's use of distributions are unsupported. Moreover, although Nevada purports to reference several examples of DOE's alleged failures, Nevada fails to reference specific portions of the SAR for these examples. Instead, Nevada refers to SAR subsection 2.4 which simply describes the TSPA and provides a long quotation from the SAR in which the treatment of uncertainty is discussed, without specifically disputing any part of subsection 2.4 or the quoted language. *See* NEV Petition at 850. Without these specific references, Nevada fails to demonstrate a genuine dispute with the application. NEV-SAFETY-160 should be rejected.

In addition, Nevada's conclusory assertion that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 854-55, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 160 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..."

NEV Petition at 854-55. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 854-55. Therefore, with respect to this part of the NEV-SAFETY-160, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.4 and "similar" subsections. NEV Petition at 849, 854. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar ” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, for the reasons set forth above, NEV-SAFETY-160 should be rejected.

NEV-SAFETY-161 - CRITICAL ROLE OF THE DRIP SHIELD

> The LA violates the requirements that there be "multiple barriers," because its safety depends dispositively upon a single element of the engineered barrier system – the drip shield.

NEV Petition at 857. In this contention, Nevada asserts that there may be many reasons why the drip shield is either not installed, not installed properly, or subject to widespread failure. Nevada claims that without the drip shield, the expected annual dose may be ten times the regulatory requirement and thus violates the "multiple barrier" requirement of 42 U.S.C. § 10141(b)(1)(B) and 10 C.F.R. §§ 63.113(a)-(d) and 63.115(a)-(c). NEV Petition at 857-58.

Staff Response

The NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. § 2.309(f)(1)(iv)-(vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

The Commission's regulations at 10 C.F.R. § 2.309(f)(1)(iv) require that an issue must be material to the findings the Commission must make. "Any issues of law or fact raised in a contention must be material to the grant or denial of the license application in question, i.e., they must make a difference in the outcome of the licensing proceeding so as to entitle the petitioner to cognizable relief . . . This requirement of materiality embodies the notion that an alleged error or deficiency regarding a proposed licensing action must have some significance relative to the agency's general responsibility and authority to protect the public health and safety and the environment." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Facility), LBP-98-7, 47 NRC 142, 179-80 (1998).

Nevada's contention speculates that either the drip shield will not be installed or that it will fail completely if it is installed and thus the requirement for multiple barriers will be violated.

Specifically, Nevada argues that if DOE's "Expected Annual Dose for the Drip Shield Early Failure Modeling Case" (1/2008), LSN# DEN 001579005, Fig. ES-46(a) at FES-640 is rescaled based on all 11,200 waste packages being unprotected by drip shields, the peak mean dose will be about 1.5 mSv, or "ten times the regulatory standard." NEV Petition at 858-59. This position is premised on the further assumption that all 11.200 waste packages "are assumed to quickly fail by localized corrosion in DOE's drip shield early failure case . . .." *Id.* at 859. Nevada's position ignores other aspects of the engineered barrier system as well as the natural barrier system. In effect, the contention is arguing that each of the multiple barriers be analyzed independently, an argument which the Court of Appeals for the D.C. Circuit previously rejected. In *Nuclear Energy Institute v. Environmental Protection Agency*, 373 F.3d 1251 (D.C. Cir., 2004), the State of Nevada was one of several parties challenging various aspects of the statutory and regulatory scheme for the high-level waste repository. One of the issues raised by Nevada was that the requirement for multiple barriers did not specify a minimum performance requirement for each of the barriers. *Id.* at 1294-95. The Court made clear in ruling on this argument that the Section 121 of the Nuclear Waste Policy Act (42 U.S.C. § 10141(b)(1)(B)) does not "require that each barrier type provide a quantified amount of protection or, indeed, independent protection." *Id.* at 1295. Consequently, the court upheld the NRC's regulations in 10 C.F.R. Part 63 related to multiple barriers.

Furthermore, the Commission has clearly identified the purpose of the multiple barrier requirement at 10 C.F.R. § 63.102(h). The requirement for a multiple barrier approach addresses the inherent uncertainties in the performance of individual components of a repository system, such as the interpretation of the geologic record and the limited experience base for the performance of complex engineered structures over periods longer than a few hundred years. In addition, 10 C.F.R. § 63.102(h) states that "A description of each barrier's capability . . . provides an understanding of how the natural barriers and the engineered barrier system work in combination to enhance the resiliency of the geologic

repository. The Commission believes that this understanding can increase confidence that the postclosure performance objectives specified at § 63.113(b) and (c) will be achieved and that DOE's design includes a system of multiple barriers." *See also* 66 Fed. Reg. 55,732, 55,758 (Nov. 2, 2001).

Nevada's present contention is not material to the findings the NRC must make. The contention misinterprets the regulatory requirements of 10 C.F.R. Part 63 and implies that each part of the EBS provide independent compliance with the Commission's radiation protection standards. As discussed above, there is no regulatory requirement that *each* of the multiple barriers provide absolute compliance with the Commission's dose requirements at 10 C.F.R. § 63.311, and Nevada's argument has been specifically addressed in other contexts by the Commission and the Federal Courts. Thus, Nevada has not established that this contention "embodies the notion that an alleged error or deficiency regarding a proposed licensing action" that is material to the findings the NRC must make. *See Private Fuel Storage, LLC,* LBP-98-7, 47 NRC at 179-80. Consequently, this contention fails to raise a material issue and is therefore not admissible pursuant to 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of facts or expert opinion. An expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of its ability to make the necessary, reflective assessment of the opinion. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Here, although Nevada provides a reference to an expert opinion, that expert fails to explain the basis for his opinion.

This contention is premised on the idea that the drip shield constitutes the primary element of the engineered barrier system and that absence of or failure of the drip shield will necessarily result in failure of the other components of the EBS, potentially resulting in a

peak mean annual dose ten times higher than permitted by NRC regulation. NEV Petition at 858-59. Consequently, Nevada argues that DOE's reliance on the drip shield violates the "multiple barrier" requirements of 42 U.S.C. § 10141(b)(1)(B) and 10 C.F.R. §§ 63.113(a)-(d) and 63.115(a)-(c). Nevada supports this contention with the affidavit of Michael Thorne, who has apparently recalculated the expected annual dose to assume that all waste packages are unprotected by drip shields and that this dose will exceed the maximum permissible dose set forth in 10 C.F.R. § 63.311 by approximately 10 times. *Id.* at 858. In addition to assuming a total failure of the any installed drip shields, the contention also lists several reasons as to why the drip shield may not be present at all, including inability to procure materials, failure to meet the installation schedule, inability to maintain the integrity of the drip shields during transportation, technology will not exist to construct the shields, errors, cave-ins or rocks on the ground prevent the pieces of the shield from interlocking, or "any number of technical problems" which would prevent the installation of any or all of the drip shield. *Id.* at 859.

With respect to the numerous reasons Nevada provides for why the drip shield may not be present, Nevada does not provide any factual support for these assertions. Indeed, the very nature of the potential reasons for the drip shield not being installed are based on the speculation and conjecture of Nevada's expert, and therefore do not meet the requirements of 10 C.F.R. § 2.309(f)(1)(v). *See USEC, Inc.*, CLI-06-10, 63 NRC at 472. Furthermore, Nevada's recalculated expected annual dose is premised on the idea that all 11,200 waste package that are unprotected by the drip shields will fail immediately and completely and "rescales" DOE's expected annual dose calculation (based on a drip shield failure rate of 0.018) to assume a total absence/failure of the drip shields . NEV Petition at 859. Without any supporting documentary information and only conclusory expert support, Nevada's recalculated dose assumes both a total failure of the drip shields and a subsequent total failure of all waste packages. The expert does not provide any basis or models to indicate

that such a scenario is even possible. In fact, the Nevada acknowledges that the rescaling is based on this unsupported assumption, as it is stated that "waste packages are assumed to quickly fail by localized corrosion in DOE's drip shield early failure case." *Id.* The speculative basis for the recalculated dose does not meet the strict requirements of 10 C.F.R. § 2.309(f)(1)(v), and is therefore not an admissible contention.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact . . . The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

Nevada's primary argument that this contention raises a material issue appears to be that the license application refers to "drip shield" 3,579 times. NEV Petition at 859. Furthermore, as discussed above, Nevada merely asserts that the drip shields will either not be installed or will not be effective, leading to failure of all of the waste packages and a recalculated dose that exceeds regulatory requirements. This speculative and conclusory premise and a general reference to the numerous portions of the SAR wherein the drip shield is mentioned, is not sufficient to establish that there is a genuine dispute on this issue. *See Millstone*, CLI-01-21, 54 NRC at 358. Consequently, NEV-SAFETY-161 it is an inadmissible contention and should be rejected.

NEV-SAFETY-162 - DRIP SHIELD INSTALLATION SCHEDULE

> From SAR Subsections 1.1.3.1 and 1.1.3.2, and related subsections, it is clear that DOE plans to install the drip shields about one-hundred years from now, after all of the wastes are emplaced in the tunnels and just prior to repository closure, but this cannot be justified as safe because if installation of the drip shields proves to be defective or impossible it will be too late to assure safety by alternative means.

NEV Petition at 861. In this contention, Nevada asserts that if drip shield installation is defective or not practical, there are no waste retrieval plans to ensure safety. NEV Petition at 861.

Staff Response

For the reasons set forth below, the NRC staff opposes the admission of this contention because the contention fails to meet the criteria set forth in 10 C.F.R. §§ 2.309 (f)(1)(iv)-(vi).

The Commission's regulations at 10 C.F.R. § 2.309(f)(1)(iv) require that an issue must be material to the findings the Commission must make. "Any issues of law or fact raised in a contention must be material to the grant or denial of the license application in question, i.e., they must make a difference in the outcome of the licensing proceeding so as to entitle the petitioner to cognizable relief…This requirement of materiality embodies the notion that an alleged error or deficiency regarding a proposed licensing action must have some significance relative to the agency's general responsibility and authority to protect the public health and safety and the environment." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179-80 (1998).

Nevada asserts that the plan to install drip shields 100 years in the future is not safe because DOE has not provided sufficient retrieval plans to ensure the waste can be retrieved if the drip shields cannot be installed as planned. Specifically, Nevada claims that the license application violates 10 C.F.R. §§ 63.31(a)(2) and 63.113(b), as well as section 121(b)(1)(B) of the Nuclear Waste Policy Act. NEV Petition at 861-62. In support of this

position, Nevada points to the 16 pages of retrieval plans as a deficiency – due to the fact there are only 16 pages. However, Nevada does not indicate how DOE's drip shield installation schedule (and associated waste retrieval plans) violate 10 C.F.R. §§ 63.31(a)(2) and 63.113(b), or section 121(b)(1)(B) of the Nuclear Waste Policy Act. Moreover, Nevada does not address at all the Commission's regulations at 10 C.F.R. § 63.111(e)(1), which require only that the repository is to be designed to preserve the option of waste retrieval on a "reasonable schedule." In publishing the final rule for 10 C.F.R. Part 63, the Commission addressed the intent and details expected in the retrieval plans under 10 C.F.R. § 63.111(e): "The feasibility and reasonableness of DOE's retrieval plans will be reviewed by the NRC staff at the time of the license application submittal. However, the Commission does not envision that DOE will need to build full-scale prototypes of its retrieval systems to demonstrate that its retrieval plans are practicable at the time of construction authorization. Rather, DOE needs to design (and build) the repository in such a way that the retrieval option is not rendered impractical or impossible." Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,743 (Nov. 2, 2001).[58] Nevada has not established that this contention "embodies the notion that an alleged error or deficiency regarding a proposed licensing action" that is material to the findings the NRC must make. *See Private Fuel Storage, LLC,* LBP-98-7, 47 NRC at 179-80. Consequently, this contention fails to raise a material issue and is therefore not admissible pursuant to 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section 2.309(f)(1)(v) requires that a contention be supported by a concise statement of

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[58] To the extent that Nevada may be challenging the Commission's regulation, such challenges are precluded by 10 C.F.R. § 2.335 absent a waiver.

facts or expert opinion. However, even if a contention references an expert opinion, that expert must still provided the basis or explanation for that opinion. *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 470-471 (2006). "[I]t is the petitioner who is obligated to provide the analyses and expert opinion showing why its bases support its contention…the Board may not make factual inferences on petitioner's behalf." *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305 (1995), citing *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149 (1991).

Here, although Nevada provides a reference to an expert opinion, that expert fails to explain the basis for his opinion. Nevada's expert simply concludes, without explanation, that the plan to install the drip shields approximately 100 years from now is unsafe because "if installation of the drip shields proves to be defective or impossible it will obviously be too late to assure safety by alternative methods short of retrieving the wastes from the tunnels." NEV Petition at 862. The underlying premise of this contention is purely speculative; there is no factual support provided that indicates that the drip shields will not be installed as indicated in the LA. In addition, Nevada references "other contentions" as providing support for the idea that installation of the drip shields will "prove defective or impossible." NEV Petition at 862. Nevada's vague reference to other contentions fails to establish that this contention is admissible.[59] Nevada's expert simply makes conclusory statements that the DOE plan to install drip shields 100 years from now "cannot be justified as safe." *See USEC, Inc*, CLI-06-10, 63 NRC at 472 ("an expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate.") (citations omitted). Furthermore, relying on

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[59] The Staff addresses each contention individually.

references to Nevada's other contentions necessarily means the Board must make factual inferences on the petitioner's behalf, which the Board is not required to do. *See Georgia Institute of Technology,* LBP-95-6, 41 NRC at 305. Consequently, this contention does not satisfy the Commission's pleading requirements at 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact… He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). *See also PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.")

Nevada simply states that because SAR Subsections 1.1.3.1 and 1.1.3.2, "and related subsections," indicate that that DOE plans to install the drip shields about one-hundred years from now, a material issue has been raised. NEV Petition at 862-63. However, Nevada has not made clear how the SAR sections 1.1.3.1 and 1.1.3.2 "and related subsections" violate the requirements of 10 C.F.R. §§ 63.31(a)(2) or 63.113(b) or the "multiple barriers" requirements of Section 121(b)(1)(B) of the NWPA. As noted above, Nevada does not address the requirements of 10 C.F.R. § 63.111(e) or indicate whether or not DOE has addressed those requirements in its application. Nevada's primary basis for the contention appears to be its apprehension that waste retrieval is

documented in “a scant sixteen pages” of the SAR. NEV Petition at 862. This is simply not enough information to demonstrate that a material dispute exists or to controvert the application. “Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.” See *PPL Susquehanna LLC* , LBP-07-10, 66 NRC at 24. Consequently, this contention fails to meet the requirements of 10 C.F.R. § 63.209(f)(1)(vi).

Furthermore, NEV-SAFETY-162 seeks to raise a dispute with SAR subsections 1.1.3.1 and 1.1.3.2 and “related” subsections. To the extent that Nevada seeks to raise an issue with a “related” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide “sufficient information to show that a genuine dispute exists on a material issue of law or fact.” This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other “related” section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not

advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For all of the foregoing reasons, NEV-SAFETY-162 should be rejected.

NEV-SAFETY-163 – SCREENING OF NEAR-FIELD CRITICALITY

> SAR Subsection 2.2.1.4.1.3.3 and similar subsections estimate an unreasonably low probability of the occurrence of advective seepage onto a waste package for nominal scenarios, which leads to near-field criticality being inappropriately screened from consideration.

NEV Petition at 865. In support of this contention, Nevada asserts that DOE's estimate for the probability of improper drip shield installation is unreasonably low and is based on erroneous application of a human reliability analysis. *Id*. Nevada contends that, based on this unreasonably low estimate of the probability of a drip shield being improperly installed, the LA improperly screens from consideration the possibility that advective flow of water through a waste package that could result in a near-field criticality event, *Id*. at 865-866, 870-871.

Staff Response

The Staff opposes the admission of NEV-SAFETY-163 because it is not adequately supported by alleged facts or expert opinion and because it does not demonstrate that a genuine issue of material fact or law exists with respect to the License Application. *See* 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). If a contention is supported by expert opinion, the expert must explain the basis for his or her opinion. *USEC, Inc.* (American

Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

NEV-SAFETY-163 asserts, based on what Nevada believes is an unreasonably low estimate of the probability of improper drip shield installation, that the LA improperly screens from consideration the possibility that advective flow of water through a waste package could result in a near-field criticality event, in violation of 10 C.F.R. § 63.342. Nevada Petition at 865-866, 870-871. Nevada's supporting expert opinion asserts that, if a drip shield is installed improperly "early entry of water into waste packages and rapid leaching of fissile materials to the near field can occur, potentially resulting in criticality in the first 10,000 years." *Id.* at 870. However, no support or explanation of the basis for this assertion is presented that would establish that consideration of improper drip shield installation would cause the probability of a near-field criticality event to exceed the probability threshold for consideration in the performance assessment. Because this assertion, upon which NEV-SAFETY-163 rests, is entirely unsupported by explanation or basis, NEV-SAFETY-163 should be rejected. 10 C.F.R. § 2.309(f)(1)(v); see *USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi) – Genuine Dispute

NEV-SAFETY-163 confines itself to a discussion of why Nevada believes that DOE has improperly calculated the probability of improper installation of a drip shield.[60] *See* Nevada Petition at 865-871. Nevada asserts that, based on what it believes is an unreasonably low estimate of the probability of improper drip shield installation, the LA improperly screens from consideration the possibility that advective flow of water through a waste package that could result in a near-field criticality event, in violation of 10 C.F.R. § 63.342. *Id*. at 865-866, 870-871. However, Nevada has not shown or even attempted to demonstrate that if DOE had

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[60] Significantly, the LA and performance assessment do consider the radiological consequences resulting from improper installation of a drip shield. *See, e.g.,* SAR Sections 2.2.2.3.3. and 2.3.8.8.4.3.2.4.

not screened improper drip shield installation from consideration the probability of near-field criticality would exceed the probability threshold for consideration in the performance assessment. *Id*. at 865-871. Therefore, Nevada has not demonstrated that a genuine issue of material fact or law exists with respect to whether near-field criticality was appropriately considered in the SAR. *See* 10 C.F.R. § 2.309(f)(1)(vi); *see USEC Inc*.(American Centrifuge Plant), LBP-05-28, 62 NRC 585, 605-606 (2005) (no genuine issue raised where no basis, analysis, or expert opinion linked petitioner's factual assertions and purported deficiency in application), *aff'd*, CLI-06-10, 63 NRC 451.

In addition, even if NEV-SAFETY-163 demonstrated that the probability of near-field criticality was improperly calculated in the LA, the contention does not argue, demonstrate, or provide any support for the proposition that DOE's consideration of near-field criticality would result in a significant change to the overall performance assessment. Nevada Petition at 865-871. Because the requirement cited by the contention, 10 C.F.R. § 63.342, requires DOE <u>not</u> to consider FEPs that are estimated to have less than one chance in 10,000 of occurring within 10,000 years of disposal or FEPs above the probability threshold "if the results of the performance assessments would not be changed significantly," and the contention does not demonstrate or argue that: (i) near-field criticality is above the probability threshold, or (ii) consideration of its proposed probability estimates of improper drip shield installation would in fact result in a significant change to the performance assessments, NEV-SAFETY-163 does not raise a genuine issue on a material issue of fact or law and therefore should be rejected. *See* 10 C.F.R. § 2.309(f)(1)(iv) and (vi).

Finally, NEV-SAFETY-163 seeks to raise a dispute with SAR subsection 2.2.1.4.3.3 and "similar" subsections. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires

that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified in NEV-SAFETY-163.

For the reasons stated above, this contention is inadmissible and should be rejected.

NEV-SAFETY-164 - AGGREGATION OF PROBABILITY DISTRIBUTIONS

> The process described for the conduct of expert elicitation in SAR Subsections 5.4.1 for probabilistic volcanic hazard analysis (PVHA), 5.4.2 for probabilistic seismic hazard analysis (PSHA), and 5.4.3 for saturated zone flow and transport (SZFT) and similar subsections was realized by using only one method for aggregating probability distributions from groups of experts, so failing to demonstrate the results of other equally valid aggregations that could have been less favorable to the safety case.

NEV Petition at 883. NEV-SAFETY-164 alleges that the process described for the conduct of expert elicitation in SAR Subsections 5.4.1, 5.4.2 and 5.4.3 and similar subsections does not comply with 10 C.F.R. § 63.114(c) because it fails to demonstrate that the results of other "aggregations that could have been less favorable to DOE's safety case." *Id.* NEV-SAFETY-164 seeks to raise a challenge to the elicitation process used by DOE to support the SAR.

Staff Response

The Staff opposes admission of NEV-SAFETY-164 because it fails to meet the requirements of: (1) 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application, (2) 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention and (3) 10 C.F.R. § 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-164 fails to demonstrate that the issue it raises is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy*

(High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-164 erroneously asserts that 10 C.F.R. § 63.114(c) requires that an expert elicitation must consider alternative approaches to aggregating elicited probability distributions. *See* NEV Petition at 878. While it is true that 10 C.F.R. § 63.114(c) does require consideration of alternative conceptual modeling approaches, Nevada fails to recognize that 10 C.F.R. § 63.114 states requirements that are applicable to a performance assessment. 10 C.F.R. § 63.114 provides that "[a]ny *performance assessment* used to demonstrate compliance with § 63.113 . . . ." 10 C.F.R. § 63.114(c) (emphasis added). 10 C.F.R. § 63.114 does not apply to the elicitation process.

Therefore, NEV-SAFETY-164 must be rejected because its allegation that DOE did not follow the requirements of 10 C.F.R. § 63.114(c) fails to demonstrate that the issue raised is material to findings the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-164 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information or expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" must "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455.

Nevada has offered no factual information or expert opinion to support its position that DOE's expert elicitation is required to comply with 10 C.F.R. § 63.114(c). Furthermore, even if the provisions of 10 C.F.R. § 63.114(c) did apply to the expert elicitation process, NEV-

SAFETY-164 offers no factual information or expert opinion to demonstrate how DOE's use of the actual distributions resulting from DOE's elicitations has not met the applicable requirements for the performance assessment regarding consideration of uncertainty and variability. *See* 10 C.F.R. § 63.114(b). Nevada merely offers unsupported argument, advancing its own opinion as to what it believes was "required" of DOE's expert elicitation under 10 C.F.R. § 63.114 and how Nevada believes DOE failed to meet those "requirements." To support this contention, Nevada offers the affidavits of Michael Thorne and Lawrence Phillips, but these affidavits simply adopt the statements in paragraph 5 (both) and paragraph 6 (Dr. Thorne). NEV Petition, Attachment 3, Affidavit of Michael C. Thorne ¶¶ 2-3; Attachment 16, Affidavit of Lawrence D. Phillips ¶ 2.

Therefore, NEV-SAFETY-164 must be rejected because its assertion that DOE did not follow the requirements of 10 C.F.R. § 63.114 is not supported by facts or expert opinions, as required by 10 C.F.R. § 2.309(f)(1)(v). *See Palo Verde,* CLI-91-12, 34 NRC at 155.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The Staff opposes admission of NEV-SAFETY-164 under 10 C.F.R. § 2.309(f)(1)(vi) for two reasons.

First, the contention fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi). The "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. He or she must 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted).

Nevada asserts that consideration of alternative aggregation approaches "might" affect the probability distributions, derived from expert elicitation, in DOE's application, but provides

no analysis or basis for claiming that such alternatives would affect the distributions used in the application. *See* NEV Petition at 874-76.

NEV-SAFETY-164 also includes an example of the distribution for data that DOE did not use in its application. *Id.* at 875. Nevada uses these data to derive different central tendencies (means). *Id.* at 877. However, this contention fails to recognize that, in the TSPA, DOE uses the entire distribution, not just the central tendency. *See* SAR Section 5.4.2 at 5.4-9.

NEV-SAFETY-164 also fails to demonstrate how DOE's aggregation is incorrect or how it underestimates the uncertainty in elicited parameters, as called for under 10 C.F.R. § 63.114(b). Rather, Nevada merely asserts that an alternative approach should be considered because it "can give different results." See NEV Petition at 877.

Statements simply asserting an inadequacy in DOE's methodology do not satisfy criterion 6. *See Millstone,* CLI-01-24, 54 NRC at 358. Therefore, NEV-SAFETY-164 must be rejected because Nevada fails to show sufficient information to demonstrate a genuine dispute exists on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi).

The second basis for the Staff's opposition under 10 C.F.R. § 2.309(f)(1)(vi) is that NEV-SAFETY-164 seeks to raise a dispute with SAR subsections 5.4.1, 5.4.2 and 5.4.3 and "similar sections." NEV Petition at 873. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet § 2.309(f)(1)(vi) because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet § 2.309(f)(1)(vi) with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

For the above reasons, NEV-SAFETY-164 should be rejected.

NEV-SAFETY-165 - SATURATED ZONE EXPERT ELICITATION

> SAR Section 5, Subsections 5.1, 5.4, 5.4.3, and similar subsections, and QARD 2.2.9 and 2.2.13.B.7, and similar subsections, which describe DOE's conduct of an expert elicitation relating to saturated zone flow and transport (SZEE) that is directly relied upon by DOE in its License Application (as well as the expert elicitation itself, DEN000672365), disclose a methodology so contrary to that which is required and that which DOE committed to employ as to render the SZEE inadequate and unusable in support of DOE's License Application.

NEV Petition at 880. NEV-SAFETY-165 alleges that SAR Sections 5, 5.1, 5.4, and 5.4.3, and similar subsections, and QARD 2.2.9 and 2.2.13.B.7, "which describe DOE's conduct of an expert elicitation relating to saturated zone flow and transport (SZEE)", disclose a methodology that does not meet the requirements of 10 CFR § 63.21(c)(19) or the guidance of NUREG-1804, Rev. 2, *Yucca Mountain Review Plan* (July, 2003) (ADAMS Accession No. ML032030389), with respect to DOE's obligation to follow the regulatory guidance of NUREG-1563. NEV Petition at 880-81.

Staff Response

The Staff opposes admission of NEV-SAFETY-165 because it (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application, (2) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention and (3) fails to meet the requirements of Section 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-165 fails to demonstrate that the issue it raises is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R.

§ 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. *Duke Energy Power Corp.* (Oconee Nuclear Power Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 333-34 (1999) (stating "[t]he dispute at issue is 'material' if its resolution would 'make a difference in the outcome of a licensing proceeding.'") (internal citation omitted). The APAPO Board stated that this criterion "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-165 alleges that certain provisions of the SAR and the QARD do not meet the requirements of 10 C.F.R. § 63.21(c)(19) or the guidance of NUREG-1804. NEV Petition at 880-81. Section 63.21(c)(19) requires the SAR to include "[a]n explanation of how [the] expert elicitation was used." 10 C.F.R. § 63.21(c)(19). However, NEV-SAFETY-165 does not claim that the SAR or the QARD fail to explain how DOE's expert elicitation was used. Rather, the contention challenges the methodology used by DOE to conduct the elicitation. *See* NEV Petition at 882-88.

More precisely, Nevada asserts that the methodology used by DOE does not meet the requirements of 10 CFR § 63.21(c)(19) or the guidance of the Yucca Mountain Review Plan because DOE did not follow all of the "requirements" of NUREG-1563, *Branch Technical Position on the Use of Expert Elicitation in the High-Level Waste Program* (Nov. 1996) (ADAMS Accession No. ML033500190). *See* NEV Petition at 880-81. Consequently, the admissibility of NEV-SAFETY-165 turns on the question of whether DOE is required to follow NUREG-1563.

NUREG-1563, Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program, is, as the title indicates, a Branch Technical Position or "BTP." NUREGs "are advisory by nature and do not themselves impose legal requirements" and therefore, "[a] licensee is free either to rely on NUREGs . . . or to take alternative

approaches to meet legal requirements. . . ." *Curators of the University of Missouri*, (TRUMP-S Project), CLI-95-8, 41 NRC 386, 397 (1995). The text of NUREG-1563 indicates that it does not contain requirements and that BTPs "are not substitutes for regulations, and *compliance with them is not required*." NUREG-1563, at 9 (emphasis added). Therefore, DOE was not required to comply with NUREG-1563.

Therefore, NEV-SAFETY-165 must be rejected because its allegation that DOE did not follow the requirements of NUREG-1563 fails to demonstrate that the issue raised is material to findings the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv), because NUREG-1563 does not include requirements.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-165 fails to proffer facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" must "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455.

As discussed above, NUREG-1563 is not mandatory, and therefore, DOE was not required to follow it. *See* NUREG-1563 at 9. Nevada has offered absolutely no factual information or expert opinion to support its position that DOE is required to follow NUREG-1563. Rather Nevada offers several pages of argument in which it advances its own opinion as to what it believes was required of DOE's expert elicitation under NUREG-1563 and how Nevada believes DOE failed to meet that burden. However, Nevada offers no support for its

argument that NUREG-1563 sets forth "requirements," a proposition that is contradicted by the text of NUREG-1563 itself ("compliance. . .is not required. Methods and solutions differing from those set out in the BTP will be acceptable if they provide a sufficient basis for the findings. . ."). NUREG-1563, *Branch Technical Position on the Use of Expert elicitation in the High-Level Radioactive Waste Program*, at 9 (November 1996).

Therefore, NEV-SAFETY-165 must be rejected because Nevada has failed to meet its burden under 10 C.F.R. § 2.309(f)(1)(v) of presenting factual information and expert opinion necessary to adequately support its assertion that DOE did not follow the requirements of NUREG-1563 as required by 10 C.F.R. § 2.309(f)(1)(v). *See Palo Verde,* CLI-91-12, 34 NRC at 155.

10 C.F.R. § 2.309(f)(1)(vi): Existence of a Genuine Dispute

NEV-SAFETY-165 seeks to raise a dispute with SAR subsections 5.1.5.4, 5.4.3 and "similar Subsections." NEV Petition at 880. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact . . . ." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet § 2.309(f)(1)(vi) with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and

applicant should not have to guess which sections Nevada believes are “related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

For the reasons discussed above, NEV-SAFETY-165 should be rejected.

NEV-SAFETY-166 - PROBABILISTIC SEISMIC HAZARD ANALYSIS EXPERT ELICITATION

> SAR Section 5, Subsections 5.4 and 5.4.2, and similar subsections, and QARD 2.2.9, 2.2.13.B.7, and similar subsections, which describe DOE's conduct of an expert elicitation relating to Probabilistic Seismic Hazard Analysis (PSHA) that is directly relied upon in its License Application (as well as the expert elicitation itself, DEN000866273), disclose a methodology so contrary to that which is required and that which DOE committed to employ, as to render the PSHA inadequate and unusable in support of DOE's License Application.

NEV Petition at 889. Nevada alleges that SAR Sections 5, 5.4, and 5.4.2, and similar subsections, and QARD 2.2.9 and 2.2.13.B.7, which describe DOE's conduct of an expert elicitation relating to Probabilistic Seismic Hazard Analysis (PSHA), disclose a methodology that does not meet the requirements of 10 C.F.R. § 63.21(c)(19) or the guidance of NUREG-1804, Rev. 2, *Yucca Mountain Review Plan* (July 2003) (ADAMS Accession No. ML032030389) with respect to DOE's obligation to follow the regulatory guidance of NUREG-1563. *Id.* at 891-97.

Staff Response

The Staff opposes admission of NEV-SAFETY-166 because it (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application, (2) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention and (3) fails to meet the requirements of Section 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-166 fails to demonstrate that the issue it raises is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-166 alleges that certain provisions of the SAR and the QARD do not meet the requirements of 10 C.F.R. § 63.21(c)(19) or the guidance of NUREG-1804, Yucca Mountain Review Plan (2003). 10 C.F.R. § 63.21(c)(19) requires that the SAR include "[a]n explanation of how [the] expert elicitation was used." NEV Petition at 889. However, NEV-SAFETY-165 does not claim that the SAR or the QARD fail to explain how DOE's expert elicitation was used. Rather, the contention challenges the methodology used by DOE to conduct the expert elicitation, asserting that the methodology used by DOE does not meet the requirements of 10 C.F.R. § 63.21(c)(19) or the guidance of the NUREG-1804 because DOE did not follow the requirements of NUREG-1563, Branch Technical Position on the Use of Expert elicitation in the High-Level Radioactive Waste Program (November, 1996). See NEV Petition at 890. Consequently, the admissibility of NEV-SAFETY-166 depends upon whether DOE is required to follow NUREG-1563. If DOE is not required to follow NUREG-1563, Nevada fails to raise an issue that is material to the findings the NRC must make to support approval of DOE's application and, as a result, NEV-SAFETY-166 must be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(iv).

NUREG-1563, Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program (1996) (ADAMS Accession No. ML033500190) is, as the title indicates, a Branch Technical Position or "BTP." The text of NUREG-1563 establishes

that BTPs provide "guidance" and "are not substitutes for regulations, and *compliance with them is not required*. Methods and solutions differing from those set out in the BTP will be acceptable if they provide a sufficient basis for the findings requisite to the issuance of a permit or license by the Commission." *Id.* at 9 (emphasis added). The Commission has explicitly stated that, "NUREGs and Regulatory Guides are advisory by nature and do not themselves impose legal requirements . . . . A licensee is free either to rely on NUREGs and Regulatory Guides or to take alternative approaches to meet legal requirements. . . ." *See Curators of the Univ. of Missouri* (TRUMP-S Project), CLI-95-8, 41 NRC 386, 397 (1995). Therefore, NEV-SAFETY-166 must be rejected because its allegation that DOE did not follow the requirements of NUREG-1563 fails to demonstrate that the issue raised is material to findings the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv), because NUREG-1563 does not include any requirements.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-166 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position . . . ." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information or expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" should "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455.

As discussed above, NUREG-1563, is not mandatory, and therefore, DOE is not required to follow it. Nevada has offered no factual information or expert opinion to support its position that DOE is required to follow NUREG-1563 and, therefore, Nevada has failed to

meet its burden to present factual information and expert opinion necessary to adequately support its contention. *See Palo Verde,* CLI-91-12, 34 NRC at 155. Rather Nevada offers its views about what NUREG-1563 "required" and why Nevada believes DOE failed to meet those "requirements." NEV Petition at 880. Therefore, NEV-SAFETY-166 must be rejected because Nevada does not support the assertion that DOE was required to and did not follow the "requirements" of NUREG-1563, as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-166 fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with the applicant on a material issue of law or fact. The "intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. He or she must 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citations omitted).

NEV-SAFETY-166 seeks to raise a dispute with SAR Section 5, Subsections 5.4 and 5.4.2 and "similar sections." NEV Petition at 889. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007)

(Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,*(Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

Therefore, NEV-SAFETY-166 should not be admitted because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-167 - PROBABILISTIC VOLCANIC HAZARD ANALYSIS EXPERT ELICITATION

> SAR Section 5, Subsections 5.1, 5.4, 5.4.1, and similar subsections, and QARD 2.2.9, 2.2.13.B.7, and similar subsections, which describe DOE's conduct of an expert elicitation relating to Probabilistic Volcanic Hazard Analysis (PVHA) that is directly relied upon in its License Application (as well as the expert elicitation itself, DEN000861156), disclose a methodology so contrary to that which is required and that which DOE committed to employ, as to render the PVHA inadequate and unusable in support of DOE's License Application. NEV Petition at 898.

NEV Petition at 898. NEV-SAFETY-167 alleges that SAR Sections 5.1, 5.4, and 5.4.1, and similar subsections, and QARD 2.2.9 and 2.2.13.B.7, which describe DOE's conduct of an expert elicitation relating to probabilistic volcanic hazard analysis (PVHA), disclose a methodology that does not meet the requirements of 10 C.F.R. § 63.21(c)(19) or the guidance of NUREG-1804, the Yucca Mountain Review Plan, Revision 2, July, 2003, with respect to DOE's obligation to follow the regulatory guidance of NUREG-1563 ("*Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program*," (Nov. 1996), LSN# DN2002065379). NEV Petition at 898.

Staff Response

The Staff opposes admission of NEV-SAFETY-167 because it (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application; (2) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention; and (3) fails to meet the requirements of Section 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-167 fails to demonstrate that the issue it raises is material to the finding the Commission must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." U.S. Dep't of Energy (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-SAFETY-167 alleges that certain provisions of the SAR and the QARD do not meet the requirements of 10 C.F.R. § 63.21(c)(19) or the guidance of NUREG-1804, the Yucca Mountain Review Plan. NEV Petition at 889. The SAR is required to include "(a)n explanation of how (the) expert elicitation was used." 10 C.F.R. § 63.21(c)(19). However, NEV-SAFETY-167 does not claim that the SAR or the QARD fail to explain how DOE's expert elicitation was used. Rather, the contention challenges the methodology used by DOE to conduct the elicitation.

More precisely, NEV-SAFETY-167 asserts that the methodology used by DOE does not meet the requirements of 10 CFR § 63.21(c)(19) or the guidance of the Yucca Mountain Review Plan because DOE did not follow all of the requirements of NUREG-1563. Consequently, the admissibility of NEV-SAFETY-167 turns on the question of whether or not DOE is required to follow NUREG-1563. See NEV Petition at 899. If DOE is not required to follow NUREG-1563, Nevada's citation to it is inapplicable and the contention does not raise an issue that is material to the findings the NRC must make to support approval of DOE's application and, as a result, NEV-SAFETY-167 must be rejected for failure to comply with 10 C.F.R. § 2.309(f)(1)(iv).

NUREG-1563, Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program, is, as the title indicates, a Branch Technical Position or "BTP." The text of NUREG-1563 establishes that it is not mandatory, and therefore, that DOE was not required to follow it.

> BTPs [sic] are not substitutes for regulations, and compliance with them is not required. Methods and solutions differing from those set out in the BTP will be acceptable if they provide a sufficient basis for the findings requisite to the issuance of a permit or license by the Commission.

NUREG-1563, "Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program, at 9 (Nov. 1996) (emphasis added). *See also*, *Curators of the University of Missouri* (TRUMP-S Project), CLI-95-8, 41 NRC 386, at 397 (1995), ("NUREGs and Regulatory Guides are advisory by nature and do not themselves impose legal requirements. . .A licensee is free either to rely on NUREGs and Regulatory Guides or to take alternative approaches to meet legal requirements. . ."), *reconsid. denied* CLI-95-11, 42 NRC 47 (1995)

Therefore, NEV-SAFETY-167 must be rejected because it alleges that DOE did not follow the requirements of NUREG-1563 and thus the contention fails to demonstrate that the issue raised is material to findings the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion.

NEV-SAFETY-167 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information or expert

opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" should "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455.

As discussed above, NUREG-1563, Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program, is, as the title indicates, a Branch Technical Position or "BTP." The text of NUREG-1563 establishes that it is not mandatory, and therefore, DOE was not required to follow it. Nevada has offered absolutely no factual information or expert opinion to support its position that DOE is required to follow NUREG-1563 and, therefore, Nevada has failed to meet its burden under 10 C.F.R. § 2.309(f)(1)(v) of presenting factual information and expert opinion necessary to adequately support its contention. *See Palo Verde*, CLI-91-12, 34 NRC at 155. Rather Nevada offers several pages of argument in which it advances its own opinion as to what it believes was required of DOE's expert elicitation under NUREG-1563 and how Nevada believes DOE failed to meet that burden. Again, however, Nevada's entire argument, in addition to being unsupported by factual information or expert opinion, is predicated on an interpretation of the requirements imposed by NUREG-1563 that is contradicted by the text of NUREG-1563 itself ("compliance. . .is not required. Methods and solutions differing from those set out in the BTP will be acceptable if they provide a sufficient basis for the findings. . ." NUREG-1563 at 9).

Therefore, NEV-SAFETY-167 must be rejected because its allegation that DOE did not follow the requirements of NUREG-1563 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Existence of a Genuine Dispute with the Application

NEV-SAFETY-167 seeks to raise a dispute with SAR subsections 5.1, 5.4 and 5.4.1 and "similar sections." To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). See also PPL Susquehanna, LLC. (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. See Commonwealth Edison Co. (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." Duke Energy Corp.,(Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be

admissible, it should be limited to disputes with those specific sections of the SAR that were identified.

Therefore, NEV-SAFETY-167 should not be admitted because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1).

NEV-SAFETY-168 - RETRIEVAL PRACTICALITY

> The descriptions of plans provided in SAR Subsection 1.11 and similar subsections are not sufficiently detailed to demonstrate waste packages can be retrieved.

NEV Petition at 908. Nevada contends that DOE's LA is deficient because DOE has not provided sufficient detailed plans for waste package retrieval. Specifically, Nevada claims that the description of plans for the waste package retrieval equipment is not sufficient to demonstrate that it will work. *Id.* at 911.

Staff Response

The Staff does not oppose admission of this contention to the extent that it seeks to raise an issue with SAR Subsection 1.11. However, to the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR subsections.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-168 seeks to raise a dispute with SAR subsection 1.11 and "similar subsections." To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR subsections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (contention found not to meet §2.309(f)(1)(vi) because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar subsections" of the SAR it

wishes to dispute, the contention fails to meet § 2.309(f)(1)(vi) with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,*(Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff does not oppose admission of NEV-SAFETY-168 only to the extent it challenges SAR Section 1.11.

NEV-SAFETY-169 -DEFERRED RETRIEVAL PLANS

> Legal issue: The LA cannot be granted because it includes only a conceptual discussion of retrieval plans and no actual retrieval plans are included or referenced.

NEV Petition at 912. NEV-SAFETY-169 challenges the adequacy of SAR Subsection 1.11 and asserts that DOE's proposed retrieval plan provides only limited information describing retrieval concepts. *Id.* Nevada claims that SAR Subsection 1.11 states that specific retrieval plans are to be developed in detail "should the need for retrieval be identified." *Id.* Nevada also claims that DOE's approach violates 10 C.F.R. § 63.21(c)(7) because "there is no possibility that adequate consideration of retrieval will take place before wastes are emplaced." *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-169 because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) since it does not assert an issue of law or fact that is material to the findings the NRC must make.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-169 is inadmissible because it fails to assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). The APAPO specified that the 10 C.F.R. § 2.309(f)(1)(iv) materiality requirement requires "citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *See U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). In addition, the Commission has indicated that an issue is material if "its resolution 'would make a difference in the outcome of the proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-34 (1999) (quoting Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process,

54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). .

Nevada asserts that the application does not comply with 10 C.F.R. § 63.21(c)(7) because it does not include or reference "final retrieval plans" and that, as a result, it is not possible for the Commission to find that there is a reasonable assurance of safety as required by 10 C.F.R. § 63.31(a)(1) and (2). *See* NEV Petition at 912-914.

The determination whether or not to authorize construction will be based on review and consideration of DOE's LA and environmental impact statement. 10 C.F.R. § 63.31. The Commission may authorize construction of a geologic repository operations area if it determines, among other things, that based on review and consideration of the submitted information, there is reasonable assurance regarding safe receipt and possession of radioactive materials 10 C.F.R. § 63.31(a) and a reasonable expectation that radioactive materials can be disposed of without unreasonable risk 10 C.F.R. § 63.31(b). Nevada fails to cite to any provision in Part 63 that indicates that DOE's retrieval plans must be "final." Rather, 10 C.F.R. § 63.21(c)(7), which Nevada cites, requires only that the SAR include "a description of plans for retrieval. . .should retrieval be necessary." 10 C.F.R. § 63.21(c)(7). The description must provide enough information so that the Staff can make its safety determination. *See* Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, 66 Fed. Reg. 55,732, 55,739 (Nov. 2, 2001). Nevada has not shown that the regulations it cites have not been satisfied explicitly or implicitly. *See High-Level Waste Repository*, LBP-08-10, 67 NRC at 455. Therefore, the contention fails to raise a material issue.

In addition, Nevada's blanket assertion that SAR subsection 1.11 is insufficient because it does not include full plans does not indicate a "significant link between the claimed deficiency and either the health and safety of the public or the environment." *See Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-04-17, 60 NRC 229, 242 (2004) (internal citations omitted), *interlocutory review den'd,* CLI-04-31, 60 NRC 461 (2004).

Nevada fails to explain how the alleged lack of “final” plan information poses a health or safety issue.

Therefore, NEV-SAFETY-169 should be rejected because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv).

NEV-SAFETY-170 - CONSERVATISMS AND THE PMA

> The PMA in Subsection 2.4.2.3.2.3.2.4 of the SAR, and referred to in related subsections, is offered to validate or provide confidence in the TSPA, but it cannot be used for these purposes, or to demonstrate net conservatisms or margins in the TSPA, because the PMA (LSN# DN20023695678) assumes that certain important parts of the TSPA are conservative when, in fact, these parts are not adequately supported, are biased in favor of compliance, or are simply wrong.

NEV Petition at 916. NEV-SAFETY-170 alleges that the Performance Margin Analysis (PMA) in Subsection 2.4.2.3.2.3.2.4 of the SAR, and referred to in related subsections, cannot be used to validate the TSPA because the PMA's fundamental premise, "that certain assumptions in the TSPA are conservative, is flawed because these assumptions are unsupported, are biased in favor of compliance, or are simply wrong." *Id.* at 917.

Staff Response

The Staff opposes admission of NEV-Safety-170 because it (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application; (2) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention; and (3) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada must demonstrate that the *issue raised* is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of a licensing proceeding.'" *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing

Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). *See also Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976) (information is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action), *aff'd*, 571 F.2d 1289 (4th Cir. 1978); *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 428 (1993) (information material to a decision whether to grant a radioactive byproduct materials license). In this proceeding, the finding the Staff must make is whether or not "there is reasonable assurance that. . . radioactive materials. . . can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and. . . there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public," as required by 10 C.F.R. § 63.31(a)(2). In particular, with respect to this contention, the relevant issue is whether 10 C.F.R. § 63.31(a)(3)(ii) has been met.

Here, Nevada objects to the assertion in the PMA that certain assumptions in the TSPA are conservative. However, the PMA is not being used be DOE to demonstrate that it meets the requirements of Part 63. SAR Subsection 2.4.2.3.2.3.2.4 at 2.4-245 explicitly states that,

> [a]s described in Section 2.4.2.3.2, the required validation level for the TSPA model requires use of at least two post-development model validation activities. However, the TSPA model validation efforts exceed procedural requirements (SNL 2008a, Section 7) because in addition to the post-development validation activities discussed above, the validation efforts included several additional post-development activities to enhance confidence in the TSPA model. One of these additional post-development validation activities is the corroboration of system model results with the results obtained using the PMA. The PMA provides additional confidence in the TSPA model results by examining the effect of conservatisms on the model results.

SAR Subsection 2.4.2.3.2.3.2.4 at 2.4-245. Therefore, because DOE is not using the PMA to demonstrate compliance with Part 63, it is not material to a finding the Staff must make. Thus, this contention fails to meet the requirements 10 C.F.R. § 2.309(f)(1)(iv) and should be

rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-170 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991).

NEV-SAFETY-170 asserts that the conservatism of the assumptions in the PMA is questionable. Nevada asserts that it cannot be established if representations in the TSPA are actually bounding or conservative because the application does not include the information that is needed to support DOE's representations and because the degree of complexity exceeds the ability of methodologies to realistically represent uncertainty. NEV Petition at 917. However, DOE does in fact identify the specific assumptions that the PMA treats as conservative in SAR Section 2.4.2.3.2.3.2.4. Despite this, however, Nevada fails to identify the specific assumptions that it challenges. Rather, Nevada merely makes a blanket assertion that DOE's assumptions are "not adequately supported, are biased in favor of compliance, or are simply wrong". *Id*. Further, regardless of the speculated deficiencies in degree of support or perceived biases in assumptions, Nevada also fails to provide facts or opinion to demonstrate how changing the constraints in the TSPA model fails to produce the TSPA clarification that DOE describes.

Therefore, NEV-SAFETY-170 must be rejected because it fails to alleged facts or provide expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Existence of a Genuine Dispute

NEV-SAFETY-170 seeks to raise a dispute with Subsection 2.4.2.3.2.3.2.4 of the SAR, "and referred to in related subsections." To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes is "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional

SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-171 - PMA AND QA

> Legal issue: The PMA in Subsection 2.4.2.3.2.3.2.4 of the SAR, and referred to in related SAR subsections, is offered to validate or provide confidence in the TSPA and to demonstrate net conservatisms or margins in the TSPA, but it cannot lawfully be used for these purposes because it relies on data and models that are not qualified pursuant to DOE's quality assurance program.

NEV Petition at 919. Nevada asserts that the PMA, included in subsection 2.4.2.3.2.3.2.4 of the SAR, and referred to in related subsections, cannot be used to validate the TSPA and to demonstrate net conservatisms or margins in the TSPA, because the PMA relies on data and models that are not qualified pursuant to DOE's quality assurance program.

Staff Response

The Staff opposes admission of NEV-Safety-171 because it (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application and (2) fails to meet the requirements of Section 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-171 fails to demonstrate that the issue it raises is material to the finding the Commission must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-Safety-171 erroneously asserts that the PMA, included in subsection 2.4.2.3.2.3.2.4 of the SAR, and referred to in related subsections, cannot be used to validate the TSPA and to demonstrate net conservatisms or margins in the TSPA, because the PMA relies on data and models that are not qualified pursuant to DOE's quality assurance program. However, Nevada's contention totally overlooks the fact that PMA Section 2.4.2.3.2.3.2.4 (the section cited in Nevada's contention begins by explaining that the PMA was conducted in addition to DOE's validation requirements and was included as a way to enhance confidence in the TSPA. The contention fails to note that there is no regulatory requirement for DOE's additional analysis.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-171 seeks to raise a dispute with SAR subsections 2.4.2.3.2.3.2.4 "and referred to in related SAR sections." To the extent that Nevada seeks to raise an issue with a "related" SAR section, the contention is inadmissible with respect to those unspecified SAR sections.

10 C.F.R. § 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the

named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-173 - EMPLACEMENT DRIFT MONITORING

> SAR Subsection 1.3.4.8.2.4 and similar subsections, which discuss monitoring processes for waste emplacement and the pre-closure period in general, fail to include sufficient detail to determine whether these monitoring efforts will fulfill the requirements that the LA places on them, and as a result, the LA assumptions related to waste package emplacement and the effectiveness of the engineered barrier system are unfounded.

NEV Petition at 933. NEV-SAFETY-173 asserts that SAR Subsection 1.3.4.8.2.4 and similar subsections make certain assumptions with respect to the installation of the waste packages and other engineered barriers. Nevada contends that there is no assurance that these assumptions can be achieved because of the lack of information about the systems for monitoring the conditions in the emplacement drifts during the pre-closure period.

Staff Response

The Staff opposes admission of NEV-SAFETY-173 because it (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application and (2) fails to meet the requirements of Section 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-173 fails to demonstrate that the issue it raises is material to the finding the Commission must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the

contention." *U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). Specifically, NEV-SAFETY-173 asserts that SAR Subsection 1.3.4.8.2.4 and similar subsections fail to comply with 10 C.F.R. § 63.21(c)(9), § 63.21(c)(15) because they fail to include sufficient detail to determine whether the stated monitoring efforts will fulfill the requirements that the application places on them, with the result, according to Nevada, that the application's assumptions related to waste package emplacement and the effectiveness of the engineered barrier system are unfounded. However, at no point does NEV-SAFETY-173 identify why or how this failure violates any of the cited provisions.

10 C.F.R. § 63.21(c)(9) states that the Safety Analysis Report must include "an assessment to determine the degree to which those features, events, and processes of the site that are expected to materially affect compliance with Sec. 63.113," while 10 C.F.R. § 63.21(c)(15) provides that it must include "an explanation of measures used to support the models used to provide the information required in paragraphs (c)(9) through (c)(14) of this section.

SAR subsection 1.3.4.8.2.4 includes both of these and Nevada's assertion that the application fails to include "sufficient detail" fails to state a failure to comply with any regulatory requirement.

Therefore, NEV-SAFETY-173 must be rejected because its allegation that DOE did not follow the requirements of 10 C.F.R. § 63.114 fails to demonstrate that the issue raised is material to findings the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-173 seeks to raise a dispute with SAR subsection 1.3.4.8.2.4 and "similar sections." To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires

that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007)(Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-174 - CONTROLS AND RESTRICTIONS

> SAR Subsection 1.6.3.4.1 and related subsections, which screen-out aircraft crashes at the Yucca Mountain repository, fail to provide any documentary evidence of any procedural controls for monitoring flight activity over the proposed flight restricted airspace with the United States military, and if no such controls exist then the crash of military aircraft at the repository should have been evaluated in terms of doses to the public and workers.

NEV Petition at 937. NEV-SAFETY-174 alleges that "DOE has not developed any mechanism for controlling or monitoring the number of flights over the proposed flight restricted airspace, and DOE has the burden of proving that such controls are in place." *Id.* Nevada further claims that if no such controls exist, then the doses to the pubic and workers resulting from the crash of military aircraft should have been evaluated. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-174 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute on a material issue of fact or law.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." Nevada acknowledges that DOE has committed to implementing procedural controls, but asserts "if no such controls exist then the crash of military aircraft at the repository should have been evaluated in terms of doses to the public and workers." NEV Petition at 937. However, Nevada does not address SAR Section 1.9.3, Table 1.9-10, or SAR Section. 5.8.3. In SAR Section 1.9.3, DOE states that "[p]rocedural safety controls are activities performed by both repository and nonrepository personnel whose actions affect repository activities to ensure that operations are within the analyzed conditions of the PCSA [preclosure safety analysis] and TSPA. SAR

at 1.9-19. Table 1.9-10 identifies the preclosure procedural safety controls. *Id.* Procedural Safety Controls 15 through 18 relate to aircraft operational controls. SAR Table 1.9-10 at 1.9-144 to 1.9-145. Further, DOE states in SAR Sec. 5.8.3:

> Prior to receipt of a license to receive and possess SNF and HLW, and in accordance with 10 CFR 63.121(c), controls will be implemented to ensure that the requirements of 10 CFR 63.111(a) and (b) are met. The site boundary, as shown in Figure 5.8-2, will be considered as the boundary of the preclosure controlled area under the definition of 10 CFR 20.1003. Such land use controls will include ensuring that U.S. Air Force flight activities in the proximity of the GROA remain within the repository performance analysis considerations of existing and projected U.S. Air Force flight activity (Section 1.6.3.4.1).

SAR at 5.8-7. Nevada does not reference these portions of the license application or address why these explanations are not adequate to demonstrate the existence of procedural controls for monitoring flight activity over the proposed flight restricted airspace. *See* NEV Petition at 937. Consequently, Nevada has failed to establish a genuine dispute on a material issue of fact or law, and the contention is inadmissible on this basis. *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007), ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.") (citations omitted), *aff'd* CLI-07-25, 66 NRC 101 (2007).

Furthermore, to satisfy § 2.309(f)(1)(vi), a petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). While Nevada alleges that "DOE cannot take credit for as yet unidentified procedural controls to control or monitor aircraft activity over the proposed flight restricted airspace," Nevada does not demonstrate, nor even allege, that without the operational controls, DOE would not be able to screen out aircraft crashes as an initiating event. *See* NEV Petition at 938. Therefore,

Nevada has not shown that a lack of operational controls would make any difference in DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-174 does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent that Nevada seeks to raise an issue with a SAR subsection "related" to 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional

SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to provide information on how it plans to implement the aircraft operation constraints in the flight-restricted airspace specified in SAR Sec. 1.6.3.4.1 *See* ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ML090090034, ML090090035. To the extent this response addresses the issue raised in NEV-SAFETY-174, the contention may be moot.

NEV-SAFETY-175 – CONTROLS ON PILOT RELIEF

> SAR Subsection 1.6.3.4.1 and related subsections, which screens-out aircraft crashes at the Yucca Mountain repository, fails to provide any documentary evidence of any procedural controls for restricting pilots from using a pilot relief "piddle pack" when operating aircraft over the proposed flight restricted airspace, and if none exists then the crash of military aircraft at the repository should have been evaluated in terms of doses to the public and workers.

NEV Petition at 940. NEV-SAFETY-175 alleges that DOE takes credit for prohibiting pilots from using piddle packs (a device that allows a pilot to urinate during flight) while flying in the proposed restricted airspace. *Id.* at 941-42. Nevada asserts that, since DOE has not described how it will restrict pilots from using such a device or monitoring compliance with the prohibition, it cannot take credit for this restriction. *Id.* at 942. Therefore, Nevada argues, DOE must present information on the crash of military aircraft at the repository and the results of a systematic analysis of structures, systems, and components at the repository to perform their intended safety function in the event of such a crash. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-175 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(v) in that it does not provide alleged facts or expert opinion that support its position, and the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Nevada acknowledges that DOE has committed to implementing procedural controls, including prohibiting the use of piddle packs, but claims that DOE has the burden to identify the controls with greater specificity and prove that the controls are or will be in effect and operating. NEV Petition at 942. A petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34

NRC 149, 155. A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Station, Units 1 & 2). LBP-02-4, 55 NRC 49, 66 (2002) (“Mere reference to documents does not, however, provide an adequate basis for a contention.”) (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 348 (1998). Nevada asserts that there are no rules in place that prohibit the use of piddle packs, but does not reference any document in support of this assertion. *See* NEV Petition at 941. To the extent the affidavit of Hugh Horstman supports this contention, there is no basis or explanation in either the contention or affidavit to support the assertion that there are no rules prohibiting the use of piddle packs.

Nevada asserts that the military, not DOE, controls pilot activity, and references the U.S. Air Force’s “Virtual Pilot Operational Procedures – F-16.” NEV Petition at 941-42 (citing "U.S. Air Force Multi-Command Instruction 11-F-16 Volume 3, Virtual Pilot Operational Procedures – F-16" (3/10/2006), LSN# NEV000005429). This document, along with its complementary Chapter 8, Local Operating Procedures, which is not referenced by Nevada, appears to “prescribe[ ] standard operational and weapons employment procedures to be used by all tactical pilots operating VUSAF [Virtual U.S. Air Force]-F16 aircraft.” U.S. Air Force Multi-Command Instruction 11-F-16 Volume 3, Virtual Pilot Operational Procedures – F-16" (3/10/2006), at 1, LSN# NEV000005429). This reference does not relate to which agency has control over pilots or airspace, nor does it address the use of piddle packs. Further, Nevada does not explain what this document is, or why it is applicable to pilots at the Nellis Air Force Base. Moreover, NEV-SAFETY-175 does not address DOE’s statement in its SAR that the Nevada Test Site airspace is controlled by DOE for Nevada Test Site activities and is not part of the Nevada Test and Training Range. SAR Section 1.1.1.3.2.2 at 1.1-14. Nevada’s reference to this document without explaining its significance is insufficient

to satisfy the standard of 10 C.F.R. § 2.309(f)(1)(v). *See, e.g., Duke Energy Corp.*, LBP-02-4, 55 NRC at 66 (citing *Calvert Cliffs*, CLI-98-25, 48 NRC at 348). Because Nevada has not offered adequate supporting facts or expert opinion to contradict DOE's assertions in the SAR, NEV-SAFETY-175 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To satisfy § 2.309(f)(1)(vi), a petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). While Nevada alleges that "DOE cannot take credit for as yet unidentified procedural controls to control or monitor aircraft activity over the proposed flight restricted airspace," Nevada does not demonstrate, nor even allege, that without the operational controls, DOE would not be able to screen out aircraft crashes as an initiating event. *See* NEV Petition at 942. Therefore, Nevada has not shown that a lack of operational controls would make any difference in DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-175 does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent NEV-SAFETY-175 seeks to raise an issue with a SAR subsection "related" to Sec. 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other “related” sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “related” to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to provide information on how it plans to implement the aircraft operation constraints, including prohibiting the use of piddle packs, in the flight-restricted airspace specified in SAR Sec. 1.6.3.4.1 *See* ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ML090090034, ML090090035. To the extent this response addresses the issue raised in NEV-SAFETY-175, the contention may be moot.

NEV-SAFETY-176 – CONTROLS ON PILOT MANEUVERING

> SAR Subsection 1.6.3.4.1 and related subsections, which screen-out aircraft crashes at the Yucca Mountain repository, fail to provide any documentary evidence of any procedural controls for restricting pilots from maneuvering their aircraft when operating over the proposed flight restricted airspace, and if none exists then the crash of military aircraft at the repository should have been evaluated in terms of doses to the public and workers.

NEV Petition at 943. NEV-SAFETY-176 alleges that DOE inappropriately takes credit for prohibiting pilots from maneuvering their aircraft while flying in the proposed restricted airspace. *Id.* at 944. Nevada asserts that, since DOE has not described how it will restrict pilots from maneuvering their aircraft or monitoring compliance with the prohibition, it cannot take credit for this restriction. *Id*. Nevada also claims DOE has not established any criteria for what constitutes maneuvering. *Id.* Therefore, Nevada argues, DOE must present information on the crash of military aircraft at the repository and the results of a systematic analysis of structures, systems, and components at the repository to perform their intended safety function in the event of such a crash. *Id.* at 946-47.

Staff Response

The Staff opposes the admission of NEV-SAFETY-176 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(v) in that it does not provide alleged facts or expert opinion that supports its position, and the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Nevada acknowledges that DOE has committed to implementing procedural controls to ensure maneuvering is prohibited, but claims that DOE has the burden of proving that the U.S. Air Force has agreed or will agree to its proposed prohibitions on operational activities. NEV Petition at 944-45. A petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public*

Service Co. (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Station, Units 1 and 2). LBP-02-4, 55 NRC 49, 66 (2002) ("Mere reference to documents does not, however, provide an adequate basis for a contention.") (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 & 2), CLI-98-25, 48 NRC 325, 348 (1998).

Nevada references two letters from the U.S. Air Force to the Chairman of the Committee on Armed Services, U.S. House of Representatives. NEV Petition at 945 (citing Letter from J. Jumper, USAF Chief of Staff, and J. Roche, Secretary of the Air Force to Hon. Duncan Hunter, Chairman, Committee on Armed Services, U.S. House of Representatives (9/11/2003), LSN# DN2001403483 at 1; Letter from the Secretary of the Air Force to Hon. Don Young, Chairman, Committee in Resources, U.S. House of Representatives (9/20/1995), LSN# DEN000357493 at 1). Nevada appears to rely on these letters for the proposition that the U.S. Air Force has declined to agree to procedural controls such as a prohibition on maneuvering when operating in the airspace above the Yucca Mountain repository. *Id.* at 945-46. However, neither these letters nor NEV-SAFETY-176 specifically relates the U.S. Air Force's airspace areas of concern with the proposed flight restricted area in DOE's SAR. Nevada does not state whether the areas to which the U.S. Air Force refers in their 1995 and 2003 letters are the same as the proposed flight restricted area in DOE's SAR.

These letters also do not go as far as Nevada claims. Nevada states that "there is no likelihood that the U.S. military would agree to a prohibition on carrying live ordnance or using electronic jamming when operating in the airspace the above Yucca Mountain repository." *Id.* at 945. The letters note the U.S. Air Force's concern with proposed

legislation, but they do not make such a categorical refusal to restrict their operations. *See, e.g.,* Letter from the Secretary of the Air Force to Hon. Don Young, Chairman, Committee in Resources, U.S. House of Representatives (9/20/1995), LSN# DEN000357493 at 1) ("Notwithstanding the impacts that have been identified, the Air Force is committed to working with the State of Nevada, the Department of Energy, and the Congressional committees in reaching a satisfactory solution."). Moreover, if Congress does pass legislation restricting the use, by civilian and military aircraft, of airspace over the repository, such restrictions would become mandatory.

Nevada also asserts that until criteria for what constitutes "aircraft maneuvering" are established, DOE cannot monitor and control them. NEV Petition at 944. However, Nevada does not explain why DOE could not monitor and control aircraft maneuvering as a general matter. To the extent the affidavit of Hugh Horstman supports this contention, there is no explanation in either the contention or affidavit regarding the basis for such an assertion.

Nevada also claims that military aircraft maneuvering is governed by military operations manuals, not airspace considerations, and references the U.S. Air Force's "Virtual Pilot Operational Procedures – F-16." NEV Petition at 946 (citing "U.S. Air Force Multi-Command Instruction 11-F-16 Volume 3, Virtual Pilot Operational Procedures – F-16" (3/10/2006), LSN# NEV000005429). This document, along with its complementary Chapter 8, Local Operating Procedures, which is not referenced by Nevada, appears to "prescribe[ ] standard operational and weapons employment procedures to be used by all tactical pilots operating VUSAF [Virtual U.S. Air Force] - F16 aircraft." U.S. Air Force Multi-Command Instruction 11-F-16 Volume 3, Virtual Pilot Operational Procedures – F-16" (3/10/2006), at 1, LSN# NEV000005429). This reference does not relate to which agency or what considerations govern control over pilots or airspace. Further, Nevada does not explain what this document is, or why it is applicable to pilots at the Nellis Air Force Base. Moreover, NEV-SAFETY-176 does not address DOE's statement in its SAR that the Nevada Test Site airspace is

controlled by DOE for Nevada Test Site activities and is not part of the Nevada Test and Training Range. SAR Section 1.1.1.3.2.2 at 1.1-14. Nevada's reference to this document without explaining its significance is insufficient to satisfy the standard of 10 C.F.R. § 2.309(f)(1)(v). *See, e.g., Duke Energy Corp.,* LBP-02-4, 55 NRC at 66 (citing *Calvert Cliffs*, CLI-98-25, 48 NRC at 348). Because Nevada has not offered adequate supporting facts or expert opinion to contradict DOE's assertions in the SAR, NEV-SAFETY-176 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To satisfy § 2.309(f)(1)(vi), a petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). While Nevada alleges that "DOE cannot take credit for as yet unidentified procedural controls to prohibit aircraft maneuvering over Yucca Mountain when such prohibitions do not exist and no provision is in place for their implementation," Nevada does not demonstrate, nor even allege, that without the operational controls, DOE would not be able to screen out aircraft crashes as an initiating event. *See* NEV Petition at 946. Therefore, Nevada has not shown that a lack of operational controls would make any difference in DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-176 does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent NEV-SAFETY-176 seeks to raise an issue with a SAR subsection "related" to SAR Subsection 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL*

Susquehanna, LLC. (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to provide information on how it plans to implement the aircraft operation constraints, including prohibiting the maneuvering of aircraft, in the flight-restricted airspace specified in SAR Sec. 1.6.3.4.1 *See* ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ML090090034, ML090090035. To the extent this response addresses the issue raised in NEV-SAFETY-176, the contention

may be moot.

NEV-SAFETY-177 – CONTROLS ON HELICOPTERS

> SAR Subsection 1.6.3.4.1 and related subsections, which screen-out aircraft crashes at the Yucca Mountain repository, fail to provide any documentary evidence of any procedural controls for prohibiting helicopter flights within 0.5 miles of the surface facilities that handle spent nuclear fuel and high level radioactive waste, and if none exist then the crash of military aircraft at the repository should have been evaluated in terms of doses to the public and workers.

NEV Petition at 948. NEV-SAFETY-177 alleges that, in analyzing the potential aircraft hazards at the repository, DOE takes credit for prohibiting helicopter flights within 0.5 miles of the surface facilities that handle spent nuclear fuel and high-level radioactive waste. *Id.* at 949. Nevada asserts that, since DOE has not proven that the U.S. Air Force has agreed or will agree to its proposed prohibition, DOE must analyze crashes of military aircraft at the Yucca Mountain repository. *Id.* at 950.

Staff Response

The Staff opposes the admission of NEV-SAFETY-177 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(v) in that it does not provide alleged facts or expert opinion that supports its position, and because the contention fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Nevada acknowledges that DOE has committed to implementing procedural controls to ensure helicopter flights within 0.5 miles of the surface facilities that handle spent nuclear fuel and high-level radioactive waste are prohibited, but claims that DOE has the burden of proving that the U.S. Air Force has agreed or will agree to its proposed prohibitions on operational activities. NEV Petition at 949-50. A petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. A “mere ‘notice pleading’ is insufficient” and the

petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003), citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 208 (2000); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Station, Units 1 & 2). LBP-02-4, 55 NRC 49, 66 (2002) ("Mere reference to documents does not, however, provide an adequate basis for a contention.") (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 & 2), CLI-98-25, 48 NRC 325, 348 (1998).

Nevada references two letters from the U.S. Air Force to the Chairman of the Committee on Armed Services, U.S. House of Representatives. NEV Petition at 950, citing Letter from J. Jumper, USAF Chief of Staff, and J. Roche, Secretary of the Air Force to Hon. Duncan Hunter, Chairman, Committee on Armed Services, U.S. House of Representatives (9/11/2003), LSN# DN2001403483 at 1; Letter from the Secretary of the Air Force to Hon. Don Young, Chairman, Committee in Resources, U.S. House of Representatives (9/20/1995), LSN# DEN000357493 at 1). Nevada appears to rely on these letters for the proposition that the U.S. Air Force has declined to agree to procedural controls such as the one concerning helicopter flights when operating in the airspace above the Yucca Mountain repository. *Id.* at 950. However, neither these letters nor NEV-SAFETY-177 specifically relates the U.S. Air Force's airspace areas of concern with the proposed flight restricted area in DOE's SAR. Nevada does not state whether the areas to which the U.S. Air Force refers in their 1995 and 2003 letters are the same as the proposed helicopter flight restricted area in DOE's SAR.

These letters also do not go as far as Nevada claims. Nevada states that "there is no likelihood that the U.S. military would agree to such proposed flight restrictions at the Yucca Mountain repository." *Id.* at 950. The letters note the U.S. Air Force's concern with proposed legislation, but they do not make such a categorical refusal to restrict their operations. *See, e.g.,* Letter from the Secretary of the Air Force to Hon. Don Young, Chairman, Committee in

Resources, U.S. House of Representatives (9/20/1995), LSN# DEN000357493 at 2) ("Notwithstanding the impacts that have been identified, the Air Force is committed to working with the State of Nevada, the Department of Energy, and the Congressional committees in reaching a satisfactory solution."). Moreover, if Congress does pass legislation restricting the use, by civilian and military aircraft, of airspace over the repository, such restrictions would become mandatory. Because Nevada has not offered adequate supporting facts or expert opinion to contradict DOE's assertions in the SAR, NEV-SAFETY-177 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To satisfy § 2.309(f)(1)(vi), a petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). While Nevada alleges that "one of the key premises for DOE screening-out military aircraft crashes from consideration at the Yucca Mountain repository is in error," Nevada does not demonstrate that without the restriction on helicopter flights, DOE would not be able to screen out aircraft crashes as an initiating event. *See* NEV Petition at 950. Therefore, Nevada has not shown that a lack of operational controls would make any difference in DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-177 does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent NEV-SAFETY-177 seeks to raise an issue with a SAR subsection "related" to Section 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections. *See* NEV Petition at 948 and 951. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to

specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to provide information on how it plans to implement the aircraft operation constraints, including prohibiting helicopter flights within 0.5 miles of the surface facilities that handle spent nuclear fuel and high-level radioactive waste, in the flight-restricted airspace specified in SAR Section 1.6.3.4.1 *See* ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ML090090034, ML090090035.

To the extent this response addresses the issue raised in NEV-SAFETY-177, the contention may be moot.

NEV-SAFETY-178 – BASIS FOR AIRCRAFT EXCLUSIONS

> SAR Subsection 1.6.3.4.1 and related subsections erroneously screen-out aircraft crashes at the Yucca Mountain repository because they inappropriately exclude numerous relevant aircraft crashes from consideration when performing aircraft crash frequency calculations.

NEV Petition at 952. NEV-SAFETY-178 alleges that DOE "erroneously excludes numerous relevant aircraft crashes from consideration because of unknown distances to the crash, ejection altitudes and glide angles when performing aircraft crash frequency calculations." *Id.* Nevada argues that "DOE failed to fulfill its obligation to use the relevant data and instead screened out many accidents from consideration during their analysis. As a result, the crash factor as determined by DOE substantially underestimates the aircraft crash frequency." *Id.* at 954.

Staff Response

The Staff opposes the admission of NEV-SAFETY-178 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(v) in that it does not provide alleged facts or expert opinion that supports its position, and it fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute on a material issue of fact or law.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Nevada claims that DOE excluded numerous aircraft crashes reported in the underlying database because they were missing valuable information concerning factors such as aircraft altitude, speed, flight path angle, and glide distance. NEV Petition at 953. Nevada argues that DOE should have assessed the relevance of these aircraft crashes instead of excluding them from consideration. *Id.* A petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the

significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2). LBP-02-4, 55 NRC 49, 66 (2002) ("Mere reference to documents does not, however, provide an adequate basis for a contention.") (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 348 (1998). Nevada fails to meet its burden of presenting supporting facts or expert opinion.

Although Nevada alleges that DOE improperly screened out many accidents from consideration, and the "crash factor as determined by DOE substantially underestimates the aircraft crash frequency," Nevada neither specifies which mishaps should have been included in DOE's analysis nor explains how their exclusion impacted DOE's aircraft crash frequency analysis. NEV Petition at 954. Rather, NEV-SAFETY-178 offers the conclusory statement that DOE substantially underestimates aircraft crash frequency. *See id.* Such a statement, even if supported by an expert, is insufficient to demonstrate a genuine dispute with the application. *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Commission case law requires an expert to explain the basis for his or her opinion; mere conclusory statements or bald assertions are inadequate. *Id.* ("[A]n expert opinion that merely states a conclusion (e.g., the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate.") (citations omitted).

Even if Nevada's conclusory statement that DOE substantially underestimates the aircraft crash frequency were enough if offered by a qualified expert, Hugh Horstman does not appear to be qualified to draw such a conclusion. Nevada bears the burden of demonstrating that Mr. Horstman is qualified to be an expert in the field in which he seeks to provide expert testimony. *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 & 2), CLI-04-21, 60 NRC 21, 27-28 (2004). While Mr. Horstman's curriculum vitae states he is a pilot,

it does not establish his expertise in statistics. *See* NEV Petition, Attachment 12, Affidavit of Hugh Horstman, Attachment A. Further, neither Mr. Horstman's affidavit nor NEV-SAFETY-178 establishes a basis for an expertise in statistics. *See* Horstman Affidavit; NEV Petition at 952-54. Because Nevada has not offered adequate supporting factual information or expert opinion to contradict DOE's calculation of aircraft crash frequency, NEV-SAFETY-178 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

As discussed above under § 2.309(f)(1)(v), Nevada does not explain how the exclusion of certain aircraft crashes impacted DOE's aircraft crash frequency analysis. To satisfy § 2.309(f)(1)(vi), a petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). Nevada challenges DOE's decision to screen out aircraft crashes and DOE's exclusion of certain accidents because they were missing information concerning parameters such as aircraft altitude, speed, flight path angle, and glide distance. NEV Petition at 953. However, Nevada does not demonstrate that, if DOE had included the accidents, then DOE would have considered aircraft crashes as an initiating event. Therefore, Nevada has not shown that the exclusion of these accidents makes any difference in the crash frequency analysis and DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-178 does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent NEV-SAFETY-178 seeks to raise an issue with a SAR subsection "related" to SAR Subsection 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This

section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to "[p]rovide the basis for not including those mishaps with unknown distances to crash, ejections, and/or glide ratios in analyzing aircraft crash frequencies." *See* ML083220989, ML083221004. On December 31, 2008, DOE responded

to this RAI. *See* ML090090034, ML090090035. To the extent this response addresses the issue raised in NEV-SAFETY-178, the contention may be moot.

NEV-SAFETY-179 – CONTROLS ON AIRCRAFT OPERATIONS (MID-AIR)

> SAR Subsection 1.6.3.4.1 and related subsections erroneously screen out aircraft crashes at the Yucca Mountain repository using an analysis that is based on the claim that all mid-air collisions and controlled flight into terrain occur during maneuvering, which is not supported by any documentary evidence. Since DOE further claims that maneuvering is prohibited in the airspace over the proposed flight restricted area, these types of accidents have been improperly excluded from the crash frequency analysis.

NEV Petition at 955. Nevada alleges that DOE improperly screened out aircraft crashes in its crash frequency analysis based on the claim that all mid-air collisions and controlled flight into terrain occur during maneuvering and that maneuvering is prohibited in the airspace above the proposed flight restricted area. *Id.*

Staff Response

The Staff opposes the admissibility of NEV-SAFETY-179 because it does not satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute on a material issue of fact or law.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

To satisfy § 2.309(f)(1)(vi), a petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). Nevada challenges DOE's decision to screen out aircraft crashes and DOE's exclusion of accidents classified as mid-air collisions and controlled flights into terrain in its crash frequency analysis. NEV Petition at 955. However, Nevada does not demonstrate, nor even allege, that, if DOE had included accidents that occurred during maneuvering or accidents classified as mid-air collisions and controlled flights into terrain, then DOE would have considered aircraft crashes as an initiating event. Therefore, Nevada has not shown that had DOE considered these types of

accidents it would have made a difference in the crash frequency analysis and DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-179 does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

NEV-SAFETY-179 seeks to raise a dispute with SAR subsection 1.6.3.4.1 and "related" sections. To the extent that Nevada seeks to raise an issue with a "related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will

be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to confirm that all of the midair collisions and controlled flights into terrain occurred during maneuvering. *See* ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ML090090034, ML090090035. To the extent this response addresses the issue raised in NEV-SAFETY-179, the contention may be moot.

NEV-SAFETY-180 – CRASH FREQUENCY OF FIXED-WING AIRCRAFT

> SAR Subsection 1.6.3.4 and similar subsections, which state that aircraft impact was screened out as an external initiating event, refer to inappropriate calculations as a basis for the screening, making the associated screening decision unjustified.

NEV Petition at 958. NEV-SAFETY-180 alleges that DOE has not adequately described the methodology used to characterize the frequency of impacts of fixed-wing aircraft on the repository, has not demonstrated the methodology is mathematically correct, and used an unnecessary and unjustified approximation it its calculations. *Id.* Nevada claims that the inadequate basis of analysis means that DOE's decision to screen out aircraft crashes as hazards is not justified. *Id.* at 960.

Staff Response

The Staff opposes the admission of NEV-SAFETY-180 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute on a material issue of fact or law.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). While Nevada challenges aspects of DOE's computational approach in screening out aircraft crashes as a hazard, NEV-SAFETY-180 does not allege, much less show, that, if DOE had not made the approximation shown in "Frequency Analysis of Aircraft Hazards for License Application, 000-00C-WHS0-00200-000-00F" (9/24/2007), LSN# DEN001574741, Figure 4, aircraft crashes would have been considered as an initiating event. *See* NEV

Petition at 959-60. Therefore, Nevada has not shown that the alleged deficiencies in the calculation make any difference in DOE's decision of whether to include aircraft crashes as an initiating event. As such, the assertion that DOE failed to justify its screening decision does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent NEV-SAFETY-180 seeks to raise an issue with a SAR subsection "similar" to Sec. 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Nevada does not specify which other "similar" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will

be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-181 – BASIS FOR CRASH DENSITY CALCULATIONS

> SAR Subsection 1.6.3.4.1 and related subsections incorrectly assumes that the crash initiation density of military aircraft outside the proposed flight restricted airspace is independent of the number of sorties flown each year and will not change if the number of sorties increases, and therefore incorrectly calculates the crash initiation frequency resulting in an understatement of risk of a military aircraft crash at the repository and an inappropriate screening of aircraft crashes from consideration.

NEV Petition at 962. NEV-SAFETY-181 alleges that "DOE incorrectly assumes that the crash initiation density of military aircraft outside the proposed flight restricted airspace is independent of the number of sorties flown each year and will not change if the number of sorties increases." *Id.* Nevada argues that "[t]he calculated crash initiation density is directly proportional to the number of flights in the airspace in question." *Id.* Nevada claims that DOE has not justified its assumption and, therefore, cannot take credit for it in its crash frequency analysis. *Id.* at 964.

Staff Response

The Staff opposes the admission of NEV-SAFETY-181 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute on a material issue of fact or law.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). While Nevada alleges that DOE used an unjustified assumption regarding the crash density outside the proposed flight restricted airspace, Nevada has not shown that the

alleged unjustified assumption impacts DOE's crash frequency analysis. *See* NEV Petition at 964. NEV-SAFETY-181 does not allege, much less show, that, if DOE had not assumed crash density outside of the proposed flight restricted airspace is independent of the number of sorties flown annually, then DOE would have considered aircraft crashes as an initiating event. Therefore, DOE has not shown that the alleged deficiencies in the crash density calculation make any difference in DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-181 does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent NEV-SAFETY-181 seeks to raise an issue with a SAR subsection "related" to Sec. 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by

the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to justify its assumption that the crash frequency density outside the flight-restricted airspace is independent of the number of sorties flown in a year and that this density would not be affected by future increases in flight activities. *See* ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ML090090034, ML090090035. To the extent this response addresses the issue raised in NEV-SAFETY-181, the contention may be moot.

NEV-SAFETY-182 – GLIDE DISTANCE

> SAR Subsection 1.6.3.4.1 and related subsections depends on the assumption that for flights that are outside the flight restricted airspace the ejection as a result of a crash initiating event that results in a crash occurs before the aircraft enters the flight restricted airspace, but fails to provide any documentary evidence justifying the assumption and fails to consider the frequency of impacts on the facility from aircraft accidents that are initiated outside the flight restricted airspace, leading to an inappropriate screening of aircraft crashes from consideration.

NEV Petition at 965. NEV-SAFETY-182 alleges that "DOE assumes that aircraft can not glide into the proposed flight restricted airspace with the pilot in the aircraft and that the pilot will eject before entering that airspace." *Id.* Nevada further claims that "DOE incorrectly uses the distance that aircraft travels after ejection for risk calculations instead of the distance traveled after the initiating event of the crash." *Id.* Consequently, Nevada argues, DOE screens out the majority of aircraft crashes outside the flight restricted airspace without documentary evidence or justification. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-182 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(v) in that it is not supported by adequate facts or expert opinion, and it fails to meet 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute on a material issue of fact or law.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-182 challenges DOE's aircraft crash frequency calculations. NEV Petition at 966-67. However, this contention does not appear to be supported by the opinion of a qualified expert, and Nevada bears the burden of demonstrating that its expert, Hugh Horstman, is qualified in the field in which he seeks to provide expert testimony. *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 & 2), CLI-04-21, 60 NRC 21, 27-28 (2004). While Mr. Horstman's curriculum vitae states he is a pilot, it does not establish his expertise

in statistics, nor demonstrate that he has education or experience relevant to conducting risk calculations. *See* NEV Petition, Attachment 12, Affidavit of Hugh Horstman, Attachment A. Further, neither Mr. Horstman's affidavit nor NEV-SAFETY-182 establishes a basis for an expertise in statistics or risk calculations. *See* Horstman Affidavit; NEV Petition at 965-68. Additionally, the Staff notes that Nevada's expert, Dr. Michael Thorne, appears to have reviewed the basis of Nevada's challenge in NEV-SAFETY-182, *i.e.* DOE's use of pilot ejection as the crash initiating event for the aircraft crash frequency calculation, and found it to be reasonable in a memorandum to Mr. Horstman used to support a different Nevada contention, NEV-SAFETY-180. *See* Memorandum from M.C. Thorne to H. Horstman, "Aircraft Crash Analysis: Part 1, Memorandum to H. Horstman" (Aug. 26, 2008) (LSN# NEV000005506) at 2 ("I note that the point of ejection is typically used as the point of mishap. This seems reasonable to me, as it excludes any maneuvering responding to the initial event and gives a glide ratio corresponding to the final path to impact."). Because Nevada has not offered adequate supporting factual information or expert opinion to contradict DOE's calculation of aircraft crash frequency, NEV-SAFETY-182 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). While Nevada alleges that DOE inappropriately screened out the majority of aircraft crashes initiated outside of the flight restricted airspace, Nevada has not shown that the alleged errors impact DOE's crash frequency analysis. *See* NEV Petition at 967. NEV-SAFETY-182 does not allege, much less show, that, if DOE had not assumed the crash initiating event is pilot ejection, then DOE would have considered aircraft crashes as an

initiating event. Therefore, Nevada has not shown that the alleged deficiencies in the glide distance calculation make any difference in DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-182 does not raise a genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent NEV-SAFETY-182 seeks to raise an issue with a SAR subsection "related" to Sec. 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application.).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will

be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to justify that its analysis of the aircraft crash frequency outside the flight-restricted airspace reasonably estimates crash frequency. *See* ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ML090090034, ML090090035. To the extent this response addresses the issue raised in NEV-SAFETY-182, the contention may be moot.

NEV-SAFETY-183 – CRASH RATES

> SAR Subsection 1.6.3.4.1 relies on an analysis that assumes that the crash rate of 2.74 x 10^{-8} for military overflights of the flight restricted airspace is the updated F-16 accident rate for normal in-flight mode, but fails to provide any documentary evidence that this crash rate is appropriate, meaning that the associated screening decision cannot be justified.

NEV Petition at 969. NEV-SAFETY-183 alleges that DOE fails to justify its assumption that the crash rate of 2.74 x 10^{-8} for military overflights of the flight restricted airspace is the updated F-16 accident rate for normal in-flight mode. *Id.* Because the assumption lacks justification, Nevada argues, DOE must use the higher crash rate for "special" flight mode for F-16 aircraft. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-183 because it fails to satisfy 10 C.F.R. § 2.309(f)(1)(v) in that it does not provide adequate facts or expert opinion that support its position, and it fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi) in that it does not raise a genuine dispute on a material issue of fact or law.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2). LBP-02-4, 55 NRC 49, 66 (2002) ("Mere reference to documents does not, however, provide an adequate basis for a contention.") (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 348 (1998).

Nevada asserts that, "[u]nless DOE justifies a 'normal' mode for crash rates, then the historically justified crash rate for 'special' flight mode for F-16 aircraft must be used." NEV Petition at 970. To support this assertion, Nevada states that two cases of F-16 flight activity need to be examined. *Id.* First, with respect to flights entering from the airspace above, Nevada claims that DOE selected the "normal" rate based on the unjustified assumption that maneuvering aircraft are not permitted in the airspace directly above the proposed flight restricted airspace. This claim is essentially the issue raised by NEV-SAFETY-176. As discussed above in the Staff's answer to NEV-SAFETY-176, DOE committed to implementing procedural controls to ensure maneuvering is prohibited, *see* SAR Section 5.8.3 at 5.8-7, and Nevada has not met its burden in attempting to contradict the SAR. Accordingly, Nevada's claim regarding maneuvering in NEV-SAFETY-183 is an insufficient basis to support its position that the "normal" rate is unjustified.

Second, with respect to injured aircraft entering the airspace from the side or above, Nevada alleges that DOE inappropriately assumed that injured aircraft outside of the proposed flight restricted airspace cannot enter the restricted airspace. NEV Petition at 970. To support this assertion, NEV-SAFETY-183 states "[t]his assumption ignores the existing rules of flight for aircraft experiencing emergencies and also ignores the longstanding F-16 operating procedures (U.S. Air Force Multi-Command Instruction 11-F-16 Volume 3, Virtual Pilot Operational Procedures – F-16" (3/10/2006), LSN # NEV000005429)." *Id.* at 971. To the extent the affidavit of Hugh Horstman supports this contention, there is no explanation in either the contention or affidavit as to what is meant by "the existing rules of flight for aircraft experiencing emergencies." Commission case law requires an expert to explain the basis for his or her opinion; mere conclusory statements or bald assertions are inadequate. *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citations omitted).

Additionally, there is no explanation of the significance of the referenced document. This document, along with its complementary Chapter 8, Local Operating Procedures, which is not referenced by Nevada, appears to "prescribe[ ] standard operational and weapons employment procedures to be used by all tactical pilots operating VUSAF [Virtual U.S. Air Force]-F16 aircraft." U.S. Air Force Multi-Command Instruction 11-F-16 Volume 3, Virtual Pilot Operational Procedures – F-16" (3/10/2006), at 1, LSN# NEV000005429). With respect to injured aircraft, this document appears only to instruct pilots to cease tactical maneuvering in the event of an inflight emergency. *Id.* at 6. Therefore, it appears that if an injured aircraft entered the flight restricted area, it would be in "normal" as opposed to "special" flight mode. Nevada's reference to this document without explaining its significance is insufficient to satisfy the standard of 10 C.F.R. § 2.309(f)(1)(v). *See, e.g., Duke Energy Corp.*, LBP-02-4, 55 NRC at 66 (citing Calvert Cliffs, CLI-98-25, 48 NRC at 348). Because Nevada has not offered reasoned expert opinion or adequate supporting facts, NEV-SAFETY-183 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). While Nevada alleges that DOE inappropriately used the "normal" mode crash rate for F-16 aircraft in its crash frequency analysis, NEV-SAFETY-183 does not allege, much less show, that, if DOE had used the "special" crash rate, then DOE would have not have screened out aircraft crashes. Therefore, Nevada has not shown that the alleged unjustified assumptions in its aircraft crash hazard calculations make any difference in DOE's decision of whether to include aircraft crashes as an initiating event. As such, NEV-SAFETY-183 does not raise a

genuine dispute on a material issue of fact or law as required by Section 2.309(f)(1)(vi), and the contention should not be admitted.

To the extent NEV-SAFETY-183 seeks to raise an issue with a SAR subsection "related" to SAR Section 1.6.3.4.1, the contention is inadmissible with respect to those unspecified SAR sections. Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "related" sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be

admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

The Staff also notes that it issued a Request for Additional Information (RAI) on November 18, 2008 asking DOE to justify that its analysis of the aircraft crash frequency outside the flight-restricted airspace reasonably estimates crash frequency. *See* ML083220989, ML083221004. On December 31, 2008, DOE responded to this RAI. *See* ML090090034, ML090090035. To the extent this response addresses the issue raised in NEV-SAFETY-183, the contention may be moot.

NEV-SAFETY-184 – RIGHT-OF-WAY N-48602

> Legal issue: SAR Subsection 5.8.1.1, which states that DOE right-of-way N-48602 (expiring in 2014) has been withdrawn from all forms of appropriation under the public laws including mining and geothermal leasing laws, does not properly account for the facts that (a) the right-of-way only provides DOE with the right to perform Yucca Mountain site characterization studies until December 31, 2014, (b) the land associated with the right-of-way is not under the jurisdiction and control of DOE, (c) the land has not been permanently reserved for DOE to construct and operate the Yucca Mountain repository, and (d) the land is not held free and clear of all significant encumbrances.

NEV Petition at 974. Nevada states that, according to SAR Section 5.8.1.1, the Bureau of Land Management, with the concurrence of the U.S. Air Force, granted DOE right-of-way N-48602 which covers approximately 18,700 acres, some of which is located in the geologic repository operations area. *Id.* at 975. Nevada contends that this right-of-way cannot be used for a geologic repository operations area because (1) the land is not under the jurisdiction and control of DOE as required by 10 C.F.R. § 63.121(a)(1); (2) since the right-of-way expires on December 31, 2014, the land is not permanently reserved for DOE as required by 10 C.F.R. § 63.121(a)(1); and (3) since the right-of-way only permits site characterization studies there is a significant encumbrance on the land that is prohibited by 10 C.F.R. § 63.121(a)(2). *Id.* at 975-76. Nevada alleges that SAR Section 5.8.1.1 is materially incomplete because it fails to acknowledge that the right-of-way is limited in duration and scope. *Id.* at 976.

Staff Response

The Staff opposes the admission of NEV-SAFETY-184 because it does not satisfy the standard set forth in 10 C.F.R. § 2.309(f)(1)(vi) in that Nevada does not raise a genuine dispute with the applicant on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioner must " 'read the pertinent portions of the license application, including the

Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's *opposing* view.' " *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170) (Aug. 11, 1989) (emphasis added). While Nevada alleges a genuine dispute because SAR Section 5.8.1.1 fails to acknowledge that right-of-way N-48602 is limited in duration and scope, DOE specifically acknowledges that the right-of-way will expire in 2014. *See* SAR Section 5.8.1.1 at 5.8-3. Additionally, DOE states that § 63.121(a)(1) requires "the geologic repository operations area [to] be located in and on lands that are either acquired lands under the jurisdiction and control of the DOE or lands permanently withdrawn and reserved for its use." SAR Section 5.8.1 at 5.8-2. DOE explains that it is currently examining appropriate courses of action to take so that it can meet this requirement. *Id.* Further, DOE states "[t]he land on which the GROA [geologic repository operations area] will be located will be free and clear of encumbrances after completion of the land withdrawal or other acquisition process identified in Section 5.8.1." SAR Section 5.8.2.2. at 5.8-4. DOE specifically states that its current legal interests, including right-of-way N-48602, do not authorize the construction and operation of the repository. SAR Section 5.8.1.1 at 5.8-3. Because DOE acknowledges that right-of-way N-48602 is not a sufficient legal interest to satisfy § 63.121(a)(1) and explains that completion of the land withdrawal or acquisition process will clear the land of all encumbrances prohibited by § 63.121(a)(2), Nevada does not raise a genuine dispute with respect to a material issue of fact or law with the applicant. Consequently, the Staff opposes the admission of NEV-SAFETY-184.[61]

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[61] The Staff's opposition does not mean that the issue raised in the contention is insignificant. (continued. . .)

NEV-SAFETY-185 – RIGHT-OF-WAY N-47748

> Legal issue: SAR Subsection 5.8.1.1, which states that DOE right-of-way N-47748 (expiring on December 31, 2014) covers public land administered by the Bureau of Land Management, does not properly account for the facts that (a) the right-of-way only provides DOE with the right to perform Yucca Mountain site characterization studies until December 31, 2014, (b) the land associated with the right-of-way is not under the jurisdiction and control of DOE, (c) the land has not been permanently withdrawn from public use, (d) the land has not been permanently reserved for DOE to construct and operate the Yucca Mountain repository, and (e) the land is not held free and clear of all significant encumbrances.

NEV Petition at 978. Nevada states that, according to SAR Section 5.8.1.1, the Bureau of Land Management granted DOE right-of-way N-47748 which covers approximately 51,790 acres, some of which is located in the geologic repository operations area. *Id.* at 979. Nevada contends that this right-of-way cannot be used for a geologic repository operations area because (1) the land is not under the jurisdiction and control of DOE as required by 10 C.F.R. § 63.121(a)(1); (2) since the land is available for public use and access, it is not permanently withdrawn as required by 10 C.F.R. § 63.121(a)(1); (3) since the right-of-way expires on December 31, 2014, the land is not permanently reserved for DOE as required by 10 C.F.R. § 63.121(a)(1); and (4) since the right-of-way only permits site characterization studies there is a significant encumbrance on the land that is prohibited by 10 C.F.R. § 63.121(a)(2). *Id.* at 980. Nevada alleges that SAR Section 5.8.1.1 is materially incomplete because it fails to acknowledge that the right-of-way is limited in duration and scope. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-185 because it does not satisfy the standard set forth in 10 C.F.R. § 2.309(f)(1)(vi) in that Nevada does not raise a genuine

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The issue raised in the contention will need to be resolved at an appropriate time in the future.

dispute with the applicant on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioner must " 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's *opposing* view.' " *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170) (Aug. 11, 1989) (emphasis added). While Nevada alleges a genuine dispute because SAR Section 5.8.1.1 fails to acknowledge that right-of-way N-47748 is limited in duration and scope, DOE specifically acknowledges that the right-of-way will expire in 2014. *See* SAR Section 5.8.1.1 at 5.8-3. Additionally, DOE states that § 63.121(a)(1) requires "the geologic repository operations area [to] be located in and on lands that are either acquired lands under the jurisdiction and control of the DOE or lands permanently withdrawn and reserved for its use." SAR Section 5.8.1 at 5.8-2. DOE explains that it is currently examining appropriate courses of action to take so that it can meet this requirement. *Id.* Further, DOE states "[t]he land on which the GROA [geologic repository operations area] will be located will be free and clear of encumbrances after completion of the land withdrawal or other acquisition process identified in Section 5.8.1." SAR Section 5.8.2.2. at 5.8-4. DOE specifically states that its current legal interests, including right-of-way N-47748, do not authorize the construction and operation of the repository. SAR Section 5.8.1.1 at 5.8-3. Because DOE acknowledges that right-of-way N-47748 is not a sufficient legal interest to satisfy § 63.121(a)(1) and explains that completion of the land withdrawal or acquisition process will clear the land of all encumbrances prohibited by § 63.121(a)(2), Nevada does not raise a genuine dispute with

respect to a material issue of fact or law with the applicant. Consequently, the Staff opposes the admission of NEV-SAFETY-185.[62]

[62] The Staff's opposition does not mean that the issue raised in the contention is insignificant. The issue raised in the contention will need to be resolved at an appropriate time in the future.

NEV-SAFETY-186 – "RANCH BOUNDARY" LAND

> Legal issue: SAR Subsection 5.8.1.1, which states that a Memorandum of Agreement governs Yucca Mountain project activities on 58,000 acres of non-public land on the Nevada Test Site (referred to as the Ranch Boundary), does not properly account for the facts that (a) the agreement only provides DOE with the right to perform Yucca Mountain site characterization studies until that right is terminated upon 90 days' written notice, (b) the land associated with the agreement has not been permanently reserved for DOE to construct and operate the Yucca Mountain repository, and (c) the land is not held free and clear of all significant encumbrances.

NEV Petition at 982. Nevada states that, according to SAR Section 5.8.1.1, "a Memorandum of Agreement between the predecessor offices of the DOE National Nuclear Security Agency Nevada Site Office and the DOE Office of Civilian Radioactive Waste Management allows DOE to use approximately 58,000 acres of non-public land on the Nevada Test Site (referred to as the Ranch Boundary)." *Id.* at 983. Some of the Ranch Boundary land is located within the geologic repository operations area. *Id.* Nevada contends that this Memorandum of Agreement cannot be used for a geologic repository operations area because (1) the land is not permanently reserved for DOE as required by 10 C.F.R. § 63.121(a)(1) since the Memorandum of Agreement can be terminated upon 90 days' written notice; and (2) there is a significant encumbrance on the land that is prohibited by 10 C.F.R. § 63.121(a)(2) since the Memorandum of Agreement only permits site characterization studies. *Id.* at 984. Nevada alleges that SAR Section 5.8.1.1 is materially incomplete because it fails to acknowledge that the Memorandum of Agreement is limited in duration and scope. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-186 because it does not satisfy the standard set forth in 10 C.F.R. § 2.309(f)(1)(vi) in that Nevada does not raise a genuine dispute with the applicant on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioner must "'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's *opposing* view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170) (Aug. 11, 1989) (emphasis added). While Nevada alleges a genuine dispute because SAR Section 5.8.1.1 fails to acknowledge that the Memorandum of Agreement is limited in duration and scope, DOE acknowledges that § 63.121(a)(1) requires "the geologic repository operations area [to] be located in and on lands that are either acquired lands under the jurisdiction and control of the DOE or lands permanently withdrawn and reserved for its use." SAR Section 5.8.1 at 5.8-2. DOE explains that it is currently examining appropriate courses of action to take so that it can meet this requirement. *Id.* Further, DOE states "[t]he land on which the GROA [geologic repository operations area] will be located will be free and clear of encumbrances after completion of the land withdrawal or other acquisition process identified in Section 5.8.1." SAR Section 5.8.2.2. at 5.8-4. DOE specifically states that its current legal interests, including the Memorandum of Agreement, do not authorize the construction and operation of the repository. SAR Section 5.8.1.1 at 5.8-3. Because DOE acknowledges that the Memorandum of Agreement is not a sufficient legal interest to satisfy § 63.121(a)(1) and explains that completion of the land withdrawal or acquisition process will clear the land of all encumbrances prohibited by § 63.121(a)(2), Nevada does not raise a genuine dispute with respect to a material issue of fact or law with the applicant. Consequently, the Staff opposes the admission of NEV-SAFETY-186.[63]

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[63] The Staff's opposition does not mean that the issue raised in the contention is insignificant. (continued. . .)

NEV-SAFETY-187 – PUBLIC LAND ORDER 7653

> Legal issue: SAR Subsection 5.8.1.1, which states that Public Land Order 7653 has withdrawn (for ten years) lands for the evaluation of the potential construction, operation and maintenance of a rail line in the Caliente Rail Corridor, does not properly account for the facts that the land associated with the order (a) is not under the jurisdiction and control of DOE, (b) has not been permanently withdrawn from public use, (c) has not been permanently reserved for DOE to construct and operate the Yucca Mountain repository, and (d) is not held free and clear of all significant encumbrances.

NEV Petition at 986. Nevada states that, according to SAR Section 5.8.1.1, the Bureau of Land Management issued Public Land Order 7653 which covers approximately 308,600 acres of land within the Caliente Rail Corridor, some of which encompasses the geologic repository operations area. *Id.* at 986-987. Public Land Order 7653 withdrew land for 10 years so that DOE could evaluate the potential construction, operation, and maintenance of a rail line in the Caliente Rail Corridor. *Id.* at 987. Nevada contends that this order cannot be used for a geologic repository operations area because (1) the land is not under the jurisdiction and control of DOE as required by 10 C.F.R. § 63.121(a)(1); (2) since the order applies to public land, it is not permanently withdrawn as required by 10 C.F.R. § 63.121(a)(1); (3) since the order expires on December 28, 2015, the land is not permanently reserved for DOE as required by 10 C.F.R. § 63.121(a)(1); and (4) since the order only permits land evaluation, there is a significant encumbrance on the land that is prohibited by 10 C.F.R. § 63.121(a)(2). *Id.* at 988. Nevada alleges that SAR Section 5.8.1.1 is materially incomplete because it fails to acknowledge that the order is limited in duration and scope. *Id.*

The issue raised in the contention will need to be resolved at an appropriate time in the future.

Staff Response

The Staff opposes the admission of NEV-SAFETY-187 because it does not satisfy the standard set forth in 10 C.F.R. § 2.309(f)(1)(vi) in that Nevada does not raise a genuine dispute with the applicant on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioner must " 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's *opposing* view.' " *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170) (Aug. 11, 1989) (emphasis added). While Nevada alleges a genuine dispute because SAR Section 5.8.1.1 fails to acknowledge that Public Land Order 7653 is limited in duration and scope, DOE specifically acknowledges that the order is for a period of 10 years and for evaluating the land for the location of a potential rail line. *See* SAR Section 5.8.1.1 at 5.8-3. Additionally, DOE states that § 63.121(a)(1) requires "the geologic repository operations area [to] be located in and on lands that are either acquired lands under the jurisdiction and control of the DOE or lands permanently withdrawn and reserved for its use." SAR Section 5.8.1 at 5.8-2. DOE explains that it is currently examining appropriate courses of action to take so that it can meet this requirement. *Id.* Further, DOE states "[t]he land on which the GROA [geologic repository operations area] will be located will be free and clear of encumbrances after completion of the land withdrawal or other acquisition process identified in Section 5.8.1." SAR Section 5.8.2.2. at 5.8-4. DOE specifically states that its current legal interests, including Public Land Order 7653, do not authorize the construction and operation of the repository. SAR Section 5.8.1.1 at 5.8-3. Because DOE acknowledges that this public land order is not a sufficient legal interest to satisfy § 63.121(a)(1) and explains that completion of

the land withdrawal or acquisition process will clear the land of all encumbrances prohibited by § 63.121(a)(2), Nevada does not raise a genuine dispute with respect to a material issue of fact or law with the applicant. Consequently, the Staff opposes the admission of NEV-SAFETY-187.[64]

[64] The Staff's opposition does not mean that the issue raised in the contention is insignificant. The issue raised in the contention will need to be resolved at an appropriate time in the future.

NEV-SAFETY-188 – PUBLIC LAND ORDER 6802/7534

> Legal issue: SAR Subsection 5.8.1.1, which states that Public Land Order 6802 (as extended through January 31, 2010 by Public Land Order 7534) withdraws land from the operation of the mining and mineral leasing laws, does not properly account for the facts that the land associated with the orders (a) is not under the jurisdiction and control of DOE, (b) has not been permanently withdrawn from public use, (c) has not been permanently reserved for DOE to construct and operate the Yucca Mountain repository, and (d) is not held free and clear of all significant encumbrances.

NEV Petition at 990. Nevada states that, according to SAR Section 5.8.1.1, the Bureau of Land Management issued Public Land Order 6802, extended by Public Land Order 7534, which covers approximately 4,256 acres of land, some of which encompasses the geologic repository operations area. *Id.* at 991. Public Land Orders 6802 and 7534 withdrew land from the operation of mining and mineral lease laws until January 31, 2010. *Id.* at 991. Nevada contends that these orders cannot be used for a geologic repository operations area because (1) the land is not under the jurisdiction and control of DOE as required by 10 C.F.R. § 63.121(a)(1); (2) since the orders apply to public land, it is not permanently withdrawn as required by 10 C.F.R. § 63.121(a)(1); (3) since the orders expire on January 31, 2010, the land is not permanently reserved for DOE as required by 10 C.F.R. § 63.121(a)(1); and (4) since the orders only withdraw land from mining and mineral leasing laws, there is a significant encumbrance on the land that is prohibited by 10 C.F.R. § 63.121(a)(2). *Id.* at 992. Nevada alleges that SAR Section 5.8.1.1 is materially incomplete because it fails to acknowledge that the orders are limited in duration and scope. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-188 because it does not satisfy the standard set forth in 10 C.F.R. § 2.309(f)(1)(vi) in that Nevada does not raise a genuine dispute with the applicant on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioner must " 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's *opposing* view.' " *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170) (Aug. 11, 1989) (emphasis added). While Nevada alleges a genuine dispute because SAR Section 5.8.1.1 fails to acknowledge that Public Land Orders 6802 and 7534 are limited in duration and scope, DOE specifically acknowledges that the orders will expire on January 31, 2010, and that, although they preclude the staking and filing of mining claims, they do not grant DOE additional land-use rights above those specified in right-of-way N-47748, part of which is also covered by the orders. *See* SAR Section 5.8.1.1 at 5.8-3. Additionally, DOE states that § 63.121(a)(1) requires "the geologic repository operations area [to] be located in and on lands that are either acquired lands under the jurisdiction and control of the DOE or lands permanently withdrawn and reserved for its use." SAR Section 5.8.1 at 5.8-2. DOE explains that it is currently examining appropriate courses of action to take so that it can meet this requirement. *Id.* Further, DOE states "[t]he land on which the GROA [geologic repository operations area] will be located will be free and clear of encumbrances after completion of the land withdrawal or other acquisition process identified in Section 5.8.1." SAR Section 5.8.2.2. at 5.8-4. DOE specifically states that its current legal interests, including Public Land Orders 6802 and 7534, do not authorize the construction and operation of the repository. SAR Section 5.8.1.1 at 5.8-3. Because DOE acknowledges that these public land orders are not a sufficient legal interest to satisfy § 63.121(a)(1) and explains that completion of the land withdrawal or acquisition process will clear the land of all encumbrances prohibited by § 63.121(a)(2), Nevada does not raise a genuine dispute with respect to a material issue of fact or law with the applicant. Consequently, the Staff opposes the admission of

NEV-SAFETY-188.[65]

[65] The Staff's opposition does not mean that the issue raised in the contention is insignificant. The issue raised in the contention will need to be resolved at an appropriate time in the future.

NEV-SAFETY-189 - PATENT 27-83-002

> Legal issue: SAR Subsection 5.8.2.2.1, which concludes that Patent 27-83-002 and the associated rights-of-way N-43366 and NEV 066289 do not present an adverse human action that reduces the ability of the Yucca Mountain repository to isolate waste, does not properly account for the fact that DOE does not exercise any jurisdiction or control over the land on which the patent and rights-of-way have been granted even though the land lies wholly within the Yucca Mountain land withdrawal area boundary and the pre-closure controlled area boundary.

NEV Petition at 994. Nevada states that patented mining claim 27-83-002 and associated rights-of-way N-43366 and NEV 006289 apply to land wholly within the Yucca Mountain land withdrawal area boundary and pre-closure area boundary. *Id.* Nevada argues, "[s]ince the patented mining claim and the two rights-of-way allow for access to and use of land located within DOE's land withdrawal area boundary and the pre-closure controlled area, DOE cannot exercise any jurisdiction and control over that land so as to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation as required by 10 C.F.R. § 63.121(b)." *Id.* at 996. Further, Nevada claims that because DOE cannot exercise jurisdiction and control over these lands, "DOE cannot comply with radiation exposure and radioactive material release performance objectives set forth in 10 C.F.R. §§ 63.111(a) and 63.111(b) as required by 10 C.F.R. § 63.121(c)." *Id.* at 996-97. In addition, Nevada claims that the license application is inaccurate and materially incomplete because it fails to recognize that the claim and rights-of-way lie wholly within the land withdrawal area boundary and the pre-closure controlled area boundary. *Id.* at 997.

Staff Response

The Staff opposes the admission of NEV-SAFETY-189 because it does not meet the standards set forth in 10 C.F.R. § 2.309(f)(1)(v) and (vi) because Nevada does not provide adequate support for its position, nor does the contention demonstrate that there is a genuine dispute on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

While Nevada claims that DOE cannot exercise jurisdiction and control over the land covered by the patented mining claim and its associated rights-of-way so as to prevent adverse human actions that could significantly reduce the repository's ability to achieve isolation as required by 10 C.F.R. § 63.121(b), Nevada does not offer any expert opinion or supporting facts to support the assertion that DOE will not be able to prevent adverse human actions that could significantly reduce the repository's ability to achieve isolation. *Id.* at 996. Similarly, Nevada offers nothing to support its claim that DOE will not be able to comply with the radiation exposure and radioactive material release performance objectives in 10 C.F.R. § 63.111(a) and (b). *Id.* at 996-97. Even when made by an expert, these are the types of conclusory statements that the Commission has found to be inadequate to support a contention. *See, e.g., USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Nevada does not provide any supporting facts or expert opinion as a basis or explanation for these assertions. Consequently, the Staff opposes the admission of this contention. *See* 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Unlike § 63.121(a) which requires DOE to locate the geologic repository operations area on either acquired lands under its jurisdiction and control or on lands permanently reserved for its use, § 63.121(b) and (c) do not set forth absolute ownership requirements for the land outside of the geologic repository operations area. Instead, § 63.121(b) and (c) require DOE to establish "appropriate controls…to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation" and "to ensure the requirements [for preclosure performance] at § 63.111(a) and (b) are met." Therefore, the assertion that DOE does not exercise jurisdiction and control over all the land within the vicinity of the repository but outside of the geologic repository operations area is insufficient to demonstrate that DOE has not met the regulatory requirements. Accordingly, Nevada has not established

a genuine dispute on a material issue of fact or law. *See* 10 C.F.R. § 2.309(f)(1)(vi).

Additionally, Nevada ignores DOE's explanation in the SAR regarding why the patented mining claim and associated rights-of-way will not affect the repository's ability to isolate waste or DOE's ability to satisfy the preclosure performance objectives. *See* SAR Sections 5.8.2.2.1 and 5.8.3.1. Consequently, Nevada has failed to establish a genuine dispute on a material issue of fact or law, and the contention is inadmissible on this basis. *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.") (citations omitted).

Nevada also alleges that SAR Section 5.8.2.2.1 is "inaccurate and materially incomplete because it fails to recognize that the claim and two rights-of-way lie wholly within DOE's land withdrawal area boundary and the pre-closure controlled area boundary." NEV Petition at 997. As discussed above, DOE acknowledges the patented mining claim and the rights-of-way in its SAR. *See* SAR Section 5.8.2.2.1 and Fig. 5.8-1. Nevada does not cite any authority that would explicitly require DOE to state that a specific land interest lies wholly within the land withdrawal boundary or the pre-closure area boundary. *See* 10 C.F.R. § 2.309(f)(1)(vi) ("[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the *supporting reasons* for the petitioner's belief…" is required.) (emphasis added). Therefore, this contention is inadmissible.

NEV-SAFETY-190 - UNPATENTED LODE AND PLACER MINING CLAIMS

> Legal issue: SAR Subsection 5.8.2.2.2, which concludes that unpatented lode and placer mining claims on land administered by the Bureau of Land Management would have no adverse impact on repository operations, does not properly account for the fact that DOE does not exercise sufficient jurisdiction or control over the land on which the claims are located even though that land lies wholly within the Yucca Mountain land withdrawal area and pre-closure controlled area boundaries.

NEV Petition at 998. Nevada states that there are at least 60 active unpatented lode and placer mining claims located on land wholly within the Yucca Mountain land withdrawal area and pre-closure area boundary. *Id.* Nevada argues, "[s]ince any one or all of the 60 active unpatented mining claims allow for access to and use of land located within DOE's land withdrawal area boundary and the pre-closure controlled area, DOE cannot exercise sufficient jurisdiction and control over that land so as to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation as required by 10 C.F.R. § 63.121(b)." *Id.* at 999-1000. Further, Nevada claims that because DOE cannot exercise sufficient jurisdiction and control over these lands, "DOE cannot comply with radiation exposure and radioactive material release performance objectives set forth in 10 C.F.R. §§ 63.111(a) and 63.111(b) as required by 10 C.F.R. § 63.121(c)." *Id.* at 1000. In addition, Nevada claims that the license application is inaccurate and materially incomplete because it fails to recognize that at least 60 unpatented claims lie wholly within the land withdrawal area boundary and the pre-closure controlled area boundary. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-190 because it does not meet the standards set forth in 10 C.F.R. § 2.309(f)(1)(v) and (vi) because Nevada does not provide adequate support for its position, nor does the contention demonstrate that there is a genuine dispute on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

While Nevada claims that DOE cannot exercise sufficient jurisdiction and control over the land covered by the unpatented mining claims so as to prevent adverse human actions that could significantly reduce the repository's ability to achieve isolation as required by 10 C.F.R. § 63.121(b), Nevada does not offer any expert opinion or supporting facts to support this assertion that DOE will not be able to prevent adverse human actions that could significantly reduce the repository's ability to achieve isolation. *Id.* at 999-1000. Similarly, Nevada offers nothing to support its claim that DOE will not be able to comply with the radiation exposure and radioactive material release performance objectives in 10 C.F.R. § 63.111(a) and (b). *Id.* at 1000. Even when made by an expert, these are the types of conclusory statements that the Commission has found to be inadequate to support a contention. *See, e.g., USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Nevada does not provide any supporting facts or expert opinion as a basis or explanation for these assertions. Moreover, Nevada ignores DOE's explanation in the SAR regarding why these land interests will not affect the repository's ability to isolate waste or DOE's ability to satisfy the preclosure performance objectives. *See* SAR Section 5.8.2.2.2 and 5.8.3.1. Because NEV-SAFETY-190 lacks supporting facts or expert opinion, the Staff opposes the admission of this contention. *See* 10 C.F.R. § 2.309(f)(1)(v).

Unlike § 63.121(a) which requires DOE to locate the geologic repository operations area on either acquired lands under its jurisdiction and control or on lands permanently reserved for its use, § 63.121(b) and (c), do not set forth absolute ownership requirements for the land outside of the geologic repository operations area. Instead, § 63.121(b) and (c) require DOE to establish "appropriate controls…to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation" and "to ensure the requirements [for preclosure performance] at § 63.111(a) and (b) are met." Therefore, the assertion that DOE does not exercise jurisdiction and control over all the land within the vicinity of the

repository but outside of the geologic repository operations area is insufficient to demonstrate that DOE has not met the regulatory requirements.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Nevada alleges that SAR Section 5.8.2.2.2 is "inaccurate and materially incomplete because it fails to recognize that at least 60 active unpatented mining claims lie wholly within DOE's land withdrawal area boundary and pre-closure controlled area boundary." NEV Petition at 1000. As discussed above, DOE acknowledges these unpatented mining claims in its SAR. *See* SAR Section 5.8.2.2.2 and Fig. 5.8-1. Nevada does not cite any authority that would explicitly require DOE to state that a specific land interest lies wholly within the land withdrawal boundary or the pre-closure area boundary. *See* 10 C.F.R. § 2.309(f)(1)(vi) ("[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the *supporting reasons* for the petitioner's belief…" is required.) (emphasis added). Therefore, this contention is inadmissible.

NEV-SAFETY-191 - NYE COUNTY MONITORING WELLS

> Legal issue: SAR Subsection 5.8.2.2.3, which states that right-of-way N-62848 granted to Nye County, Nevada to drill several monitoring wells has no adverse effect on the ability of the repository to meet performance objectives, does not account for the fact that DOE does not exercise sufficient jurisdiction or control over the land on which most of the wells are located even though that land lies wholly within the Yucca Mountain land withdrawal area and the preclosure controlled area boundaries.

NEV Petition at 1001. Nevada states that Nye County has drilled 20 monitoring wells south of the geologic repository operations area pursuant to right-of-way N-62848, and most of these wells are located on land wholly within the Yucca Mountain land withdrawal area and pre-closure controlled area boundaries. *Id.* at 1002-03. Nevada argues, "[s]ince right-of-way N-62848 allows for access to and use of land associated with those 17 wells and that land is located within the Yucca Mountain land withdrawal area and pre-closure controlled area boundaries, DOE cannot exercise sufficient jurisdiction and control over that land so as to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation as required by 10 C.F.R. § 63.121(b)." *Id.* at 1003. Further, Nevada claims that because DOE cannot exercise sufficient jurisdiction and control over these lands, "DOE cannot comply with radiation exposure and radioactive material release performance objectives set forth in 10 C.F.R. §§ 63.111(a) and 63.111(b) as required by 10 C.F.R. § 63.121(c)." *Id.* In addition, Nevada claims that the license application is inaccurate and materially incomplete because it fails to recognize that 17 of the monitoring wells lie on land wholly within the land withdrawal area boundary and the pre-closure controlled area boundary. *Id.* at 1004.

Staff Response

The Staff opposes the admission of NEV-SAFETY-191 because it does not meet the standards set forth in 10 C.F.R. § 2.309(f)(1)(v) and (vi) because Nevada does not provide

adequate support for its position, nor does the contention demonstrate that there is a genuine dispute on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

While Nevada claims that DOE cannot exercise sufficient jurisdiction and control over the land with the Nye County monitoring wells so as to prevent adverse human actions that could significantly reduce the repository's ability to achieve isolation as required by 10 C.F.R. § 63.121(b), Nevada does not offer any supporting basis for the assertion that DOE will not be able to prevent adverse human actions that could significantly reduce the repository's ability to achieve isolation. *Id.* at 1003. Similarly, Nevada offers nothing to support its claim that DOE will not be able to comply with the radiation exposure and radioactive material release performance objectives in 10 C.F.R. § 63.111(a) and (b). *Id*. Even when made by an expert, these are the types of conclusory statements that the Commission has found to be inadequate to support a contention. *See, e.g., USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Nevada does not provide any supporting facts or technical basis for these assertions. Moreover, Nevada ignores DOE's explanation in the SAR regarding why these wells will not affect the repository's ability to isolate waste or DOE's ability to satisfy the preclosure performance objectives. *See* SAR Section 5.8.2.2.3. Because NEV-SAFETY-190 lacks supporting facts or expert opinion with a supporting basis, the Staff opposes the admission of this contention. *See* 10 C.F.R. § 2.309(f)(1)(v).

Unlike § 63.121(a) which requires DOE to locate the geologic repository operations area on either acquired lands under its jurisdiction and control or on lands permanently reserved for its use, § 63.121(b) and (c), do not set forth absolute ownership requirements for the land outside of the geologic repository operations area. Instead, § 63.121(b) and (c) require DOE to establish "appropriate controls…to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation" and "to ensure the requirements [for preclosure performance] at § 63.111(a) and (b) are met." Therefore, the assertion that

DOE does not exercise jurisdiction and control over all the land within the vicinity of the repository but outside of the geologic repository operations area is insufficient to demonstrate that DOE has not met the regulatory requirements.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Nevada alleges that SAR Section 5.8.2.2.3 is "inaccurate and materially incomplete because it fails to recognize that 17 of the monitoring wells lie on land wholly within the Yucca Mountain land withdrawal area and pre-closure controlled area boundaries." NEV Petition at 1004. As discussed above, DOE acknowledges monitoring wells in its SAR. *See* SAR Section 5.8.2.2.3; Fig. 5.8-1; Fig. 5.8-3. The SAR states that Nye County monitoring wells are within the proposed land withdrawal area, SAR Section 5.8.2.2.3 and Fig. 5.8-1, and references Figure 5.8-3 for a depiction of the individual drill sites. Nevada does not cite any authority that would require DOE to provide any more information than it has or to make the exact statement Nevada contends is missing. *See* 10 C.F.R. § 2.309(f)(1)(vi) ("[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the *supporting reasons* for the petitioner's belief…" is required.) (emphasis added). Therefore, this contention is inadmissible.

NEV-SAFETY-192 - LAND OUTSIDE DOE'S RIGHTS-OF-WAY

> Legal issue: SAR Subsection 5.8.1.1, which identifies 5 areas of land in which DOE claims some type of legal interest (i.e., right-of-ways N-48602 and N-47748, Public Land Orders 7653 and 6802/7534 and the Memorandum of Agreement governing the ranch boundary), fails to address whether DOE has any type of legal interest in 3 other areas of land lying outside those 5 areas but within the Yucca Mountain land withdrawal area and pre-closure controlled area boundaries and thus does not properly account for the fact that for those 3 additional areas DOE does not exercise any jurisdiction and control.

NEV Petition at 1005. Nevada alleges that SAR Figure 5.8-1 "reveals three areas of land within the Yucca Mountain land withdrawal area boundary for which DOE does not hold any legal interest: (a) land north of right-of-way N-48602, (b) land southwest of right-of-way N-47748, and (c) land north, northeast, and southeast of the ranch boundary." *Id.* at 1006. Nevada argues, "[s]ince there exist three areas of land within the Yucca Mountain land withdrawal area and pre-closure controlled area for which DOE exercises no jurisdiction or control, DOE cannot prevent adverse human actions on that land that could significantly reduce the geologic repository's ability to achieve isolation as required by 10 C.F.R. § 63.121(b)." *Id.* at 1007. Further, Nevada claims that for these three areas, DOE cannot comply with radiation exposure and radioactive material release performance objectives set forth in 10 C.F.R. §§ 63.111(a) and 63.111(b) as required by 10 C.F.R. § 63.121(c). *Id.* In addition, Nevada claims that the license application is inaccurate and materially incomplete because it fails to identify any legal interest held by DOE to these three land areas within the land withdrawal area boundary and the pre-closure controlled area boundary. *Id.*

Staff Response

The Staff opposes the admission of NEV-SAFETY-192 because it does not meet the standards set forth in 10 C.F.R. § 2.309(f)(1)(v) and (vi) because Nevada does not provide adequate support for its position, nor does the contention demonstrate that there is a

genuine dispute on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

While Nevada claims that DOE cannot exercise any jurisdiction and control over the land in these three areas so as to prevent adverse human actions that could significantly reduce the repository's ability to achieve isolation as required by 10 C.F.R. § 63.121(b), Nevada does not offer any expert opinion or supporting facts to support the assertion that DOE will not be able to prevent adverse human actions that could significantly reduce the repository's ability to achieve isolation. *Id.* at 1007. Similarly, Nevada offers nothing to support its claim that DOE will not be able to comply with the radiation exposure and radioactive material release performance objectives in 10 C.F.R. § 63.111(a) and (b). *Id*. Even when made by an expert, these are the types of conclusory statements that the Commission has found to be inadequate to support a contention. *See, e.g., USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Nevada does not provide any supporting facts or expert opinion as a basis or explanation for these assertions. Moreover, Nevada does not address DOE's explanation in the SAR regarding its ability to satisfy the preclosure performance objectives. *See* SAR Section 5.8.3.1. Because NEV-SAFETY-192 lacks supporting facts or expert opinion, the Staff opposes the admission of this contention. *See* 10 C.F.R. § 2.309(f)(1)(v).

Unlike § 63.121(a) which requires DOE to locate the geologic repository operations area on either acquired lands under its jurisdiction and control or on lands permanently reserved for its use, § 63.121(b) and (c), do not set forth absolute ownership requirements for the land outside of the geologic repository operations area. Instead, § 63.121(b) and (c) require DOE to establish "appropriate controls…to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation" and "to ensure the requirements [for preclosure performance] at § 63.111(a) and (b) are met." Therefore, the assertion that DOE does not exercise jurisdiction and control over all the land within the vicinity of the

repository but outside of the geologic repository operations area is insufficient to demonstrate that DOE has not met the regulatory requirements.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Nevada alleges that SAR Section 5.8.1.1 is "materially incomplete because it fails to identify any legal interest held by DOE to 3 land areas lying outside the 5 identified areas but within the Yucca Mountain land withdrawal area and pre-closure controlled area boundaries." NEV Petition at 1007. In its SAR, DOE acknowledges that it does not currently hold legal interest in all of the land in the land withdrawal area. *See* SAR at 5.8-2 ("DOE already holds legal interests in *much* of the subject land [land withdrawal area] depicted in Figure 5.8-1" (emphasis added). The implication is that DOE does not hold legal interests in the remainder of the land.). Nevada does not cite any authority that requires DOE to hold a legal interest in all lands within the land withdrawal area or the pre-closure controlled area. *See* 10 C.F.R. § 2.309(f)(1)(vi) ("[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the *supporting reasons* for the petitioner's belief…" is required.) (emphasis added). Therefore, NEV-SAFETY-192 is inadmissible.

NEV-SAFETY-193 – LAND WITHDRAWAL

> SAR Subsection 5.8.1.1, which identifies DOE's legal interest in land for the geologic repository operations area and the surrounding land within the Yucca Mountain land withdrawal area boundary and the pre-closure controlled area boundary, admits that DOE's interests do not authorize the construction and operation of the repository and therefore Yucca Mountain cannot be licensed by the NRC.

NEV Petition at 1009. Nevada contends that since "DOE admits in SAR Subsection 5.8.1.1 that it does not currently have the requisite legal interest in land required to construct and operate a geologic repository at Yucca Mountain…NRC cannot license DOE to construct or operate the Yucca Mountain repository." *Id.* Nevada argues that, although DOE has requested legislative action to withdraw the land within the land withdrawal area and pre-closure controlled area boundaries, it has not been enacted at this point, and therefore, DOE cannot satisfy Part 63. *Id.* at 1011.

Staff Response

The Staff opposes the admission of NEV-SAFETY-193 because it does not satisfy the standard set forth in 10 C.F.R. § 2.309(f)(1)(vi) in that Nevada does not raise a genuine dispute with the applicant on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioner must " 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.' " *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170) (Aug. 11, 1989) (emphasis added). Nevada alleges a genuine dispute because SAR Section 5.8.1.1

> admits that DOE does not possess the requisite legal interest in

> land for the geologic repository operations area and the surrounding Yucca Mountain land withdrawal area and pre-closure controlled area boundaries and that a legislative enactment is required to permanently withdraw that land for the construction and operation of the Yucca Mountain repository.

NEV Petition at 1011. Because DOE acknowledges that its current land interests are not sufficient to satisfy § 63.121(a)(1) and explains that completion of the land withdrawal or acquisition process will clear the land of all encumbrances prohibited by § 63.121(a)(2), Nevada does not raise a genuine *dispute* with respect to a material issue of fact or law with the applicant. *See* SAR Sections 5.8.1, 5.8.1.1, and 5.8.2.2. Consequently, the Staff opposes the admission of NEV-SAFETY-193.[66]

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[66] The Staff's opposition does not mean that the issue raised in the contention is insignificant. The issue raised in the contention will need to be resolved at an appropriate time in the future.

NEV-SAFETY-194 – VH-1 WATER RIGHTS

> Legal issue: SAR Subsection 5.8.4, which states that well VH-1 provides DOE with a permanent right to 2.3 acre-feet of water annually, fails to properly account for the fact that the water right is not sufficient to accomplish the purpose of the geologic repository operations area.

NEV Petition at 1012. Nevada contends that because water appropriated from well VH-1 is insufficient to support the repository's projected demand for water, and water from well VH-1 cannot be used for the construction and operation of the repository, the water rights under Permit No. 57375 are not sufficient to comply with Part 63. *Id.* at 1014.

Staff Response

The Staff opposes the admission of NEV-SAFETY-194 because it does not satisfy the standard set forth in 10 C.F.R. § 2.309(f)(1)(vi) in that Nevada does not raise a genuine dispute with the applicant on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioner must " 'read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's *opposing* view.' " *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170) (Aug. 11, 1989) (emphasis added). Nevada alleges a genuine dispute because SAR Section 5.8.4 admits that water from well VH-1 is insufficient to support the projected water demands to construct and operate the repository. NEV Petition at 1014. NEV Petition at 1011. Because DOE acknowledges that its current water appropriation permit is not sufficient to meet the projected demands for water and explains that it has filed a request with the Office of the Nevada State Engineer for permanent rights to a sufficient amount of water, Nevada does

not raise a genuine dispute with respect to a material issue of fact or law with the applicant. *See* SAR Section 5.8.4 at 5.8-8.

Nevada also challenges SAR Section 5.8.1.1 as being materially incomplete because it fails to acknowledge that the water from VH-1 cannot be used for the construction or operation of the repository. NEV Petition at 1014. However, Nevada may have mistakenly referenced SAR Section 5.8.1.1, as it relates to DOE's current land-use interests, while Section 5.8.4 deals specifically with water rights. As discussed above, SAR Section 5.8.4 acknowledges that DOE's current permit for well VH-1 is not sufficient for construction and operation of the repository. Nevada does not cite any authority that would require DOE to provide any more information than it has or to make the exact statement Nevada contends is missing. *See* 10 C.F.R. § 2.309(f)(1)(vi) ("[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the *supporting reasons* for the petitioner's belief…" is required.) (emphasis added). Consequently, there is not a genuine dispute with respect to a material issue of fact or law, and the Staff opposes the admission of NEV-SAFETY-194.[67]

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[67] The Staff's opposition does not mean that the issue raised in the contention is insignificant. The issue raised in the contention will need to be resolved at an appropriate time in the future.

NEV-SAFETY-195- 9/11 TERRORIST ATTACK

> DOE's security measures for physical protection of HLW, as described in section 3 of the General Information portion of the LA at 3-1 to 3-9, are inadequate to protect public health and safety because DOE fails to provide any evidence that there will be any protective or mitigation measures to respond adequately to a terrorist attack using aircraft, including an attack using large aircraft as occurred on 9-11.

NEV Petition at 1016. In this contention, Nevada asserts that DOE should have taken into account a terrorist attack using aircraft in designing its security measures, despite the fact that the Commission's Design Basis Threat (DBT) Final Rule does not require a physical security DBT to include airborne attacks, including airborne attacks using a large commercial airliner like those used in the 9/11 terrorist attacks. *Id.; see* Design Basis Threat Final Rule, 72 Fed. Reg. 12,705 (Mar. 19, 2007).

Staff Response

As discussed below, Nevada's contention requests a waiver from the DBT Rule in this proceeding. However, Nevada has failed to make a *prima facie* case for a waiver, and therefore NEV-SAFETY-195 is an impermissible challenge to a Commission rule. Accordingly, NEV-SAFETY-195 should be rejected.

10 C.F.R. § 2.335: Challenge to a Commission Rule

10 C.F.R. § 2.335(b) provides for certification to the Commission of the question of whether a regulation of the Commission should be waived or an exception made in a particular adjudicatory proceeding. In order to challenge a Commission regulation, a petitioner must submit a supporting affidavit setting forth "with particularity" the special circumstances that justify the waiver or exception requested. 10 C.F.R. § 2.335(b). It is not enough merely to allege the existence of special circumstances in a proceeding, but a petitioner must make a *prima facie* showing that application of the rule or regulation as written "would not serve the purposes for which the rule was adopted." *Id.; Carolina Power*

and Light Co. (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 546 (1986).

However, petitions for waivers or exceptions are granted only in "unusual and compelling circumstances." *Northern States Power Co.* (Monticello Nuclear Generating Plant, Unit 1), CLI-72-81, 5 AEC 25, 26 (1972). "Special circumstances are present only if the petition properly pleads one or more facts, not common to a large class of applicants . . . that were not considered either explicitly or by necessary implication in the proceeding leading to the rule sought to be waived." *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-88-10, 28 NRC 573, 596-97 (1988), *reconsid. denied*, CLI-89-3, 29 NRC 234 (1989). Also, the special circumstances must be such as "to undercut the rationale for the rule sought to be waived." *Id.* at 597.

Nevada has failed to set forth the special circumstances sufficient to justify that an exception to the DBT Rule be made in this proceeding. Nevada's bases its waiver request on its assertion that the sole rationale for why the Commission excluded terrorist airborne attacks from the DBT is that the Commission was considering of the limitations of private security forces: " 'the airborne threat is one that is beyond what a private security force can reasonably be expected to defend against'." NEV Petition at 1017-18 (citing the DBT Rule at 12710)). Nevada argues that since DOE is not a private entity, but rather a government agency, the airborne attack exclusion to the DBT should not apply in this proceeding. *See* NEV Petition, Attachment 2, Affidavit of Charles J. Fitzpatrick ¶¶ 2-4. This argument is inaccurate. It is clear from the DBT Final Rule that although the Commission considered the limitations of private security forces when defining the DBT, the Commission excluded airborne attacks from the DBT for other reasons. In the Statements of Considerations for the DBT Final Rule, the Commission stated that it "maintained its view that that protection against airborne attack could best be provided by the strengthening of airport and airline security measures." DBT Final Rule, 72 Fed. Reg. at 12,707. Nothing in the final rule indicated that the Commission changed its view in this regard. *See id.* In addition, in

response to a comment suggesting that dry cask storage should be further strengthened against airborne attack, the Commission noted that based on impact studies of large commercial aircraft attacks on spent fuel casks, "it is highly unlikely that a significant release of radioactivity would occur from an aircraft impact on a dry spent fuel storage cask." *Id.* at 12,721. Based on these evaluations, the Commission took no action on the suggestion to strengthen security measures for dry cask storage. *Id.* Finally, the Commission determined "that active protection against the airborne threat rests with other organizations of the Federal government, such as NORTHCOM and NORAD, TSA, and FAA. The NRC will continue to tests these relationships through exercises." *Id.* at 12,711. Clearly the Commission expects its licensees to coordinate with other branches of the Federal government responsible for airborne threat protection even if the responsibility of "active protection" against airborne attack rests outside its licensees. Simply because DOE is a federal agency does not mean that the Commission intended it to assume the responsibility for protecting against airborne attacks already borne by other federal agencies, such as NORTHCOM and NORAD, TSA and FAA. Because Nevada has not articulated any basis for the exclusion of airborne attacks from the DBT that were not already contemplated by the Commission in its DBT rulemaking, Nevada has failed to make a *prima facie* showing of special circumstances to justify an exception to the DBT Rule in this proceeding. As such, this issue should not be certified to the Commission.

Accordingly, NEV-SAFETY-195 should be rejected.

NEV-SAFETY-196 - DESCRIPTION OF SECURITY MEASURES

> The application does not describe the detailed security measures required for physical protection as required by the regulations.

NEV Petition at 1020. In this contention, Nevada asserts that DOE does not describe the security measures for physical protection in sufficient detail. *Id.* Nevada argues that since the LA states that "'[a] Physical Protection Plan, compliant with applicable portions of 10 C.F.R. Part 73, will be submitted to . . . the NRC no later than 180 days after the NRC issues a construction authorization'," DOE has failed to provide information that is reasonably available to it and thus does not meet the requirements of 10 C.F.R. §§ 63.21(b)(3) and 73.51. NEV Petition at 1021, 1023 (citing GI Section 3 at 3-1).

Staff Response

As discussed below, however, 10 C.F.R. § 63.21(b)(3) requires only a "description" of the security plan, not the "detailed plan" itself. Therefore, Nevada's contention is not supported adequately by factual information or expert opinion; and Nevada's contention does not raise a genuine dispute regarding the application. Accordingly, NEV-SAFETY-196 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-196 is not supported by "references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The reference that Nevada provides to the regulations, C.F.R. §§63.21(b)(3), does not support its position in this contention because the regulation does not require a detailed physical security plan from DOE at this stage, but instead, calls for a "description of the plan." Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(v) and should be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-196 fails to show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact." 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "' bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

Again, Nevada mischaracterizes the requirements set forth in 10 C.F.R. § 63.21(b)(3) when it alleges that DOE's future tense words used to describe the security measures for its physical protection plan necessarily fail to meet the requirement of "[a] description of the detailed security measures for physical protection of high-level radioactive waste in accordance with § 73.51." *See* NEV Petition at 1023. Further, Nevada does not discuss how DOE's LA does not meet the 10 C.F.R. § 63.21(b)(3) requirements but appears to confuse the former requirement of a "detailed plan" with the current standard, "a description of the plan." *See id.* at 1020-21. As noted in the Statement of Considerations for the Part 63 Final Rule, the Commission revised the rule from a requirement for a "detailed plan" to provide physical protection to a requirement of a "description of the plan." 66 Fed. Reg. 55,732, 55,739 (Nov. 2, 2001). This change was an acknowledgement that the actual "plan" providing more details would come at a later time. Although DOE must submit "a reasonably compete application," the Commission acknowledged that the "knowledge available at the time of construction authorization will be less than at the subsequent stages." *Id.* at 55,738-

39. The Commission noted that the "revision provide[d] greater consistency with other provisions of § 63.21(b) . . . ." *Id.* at 55,739. The NRC Staff will review the information to determine whether DOE has provided sufficient information to support the construction authorization stage. Therefore, Nevada has failed to raise a genuine dispute with the LA on an issue of material law or fact because Nevada's contention about the lack of a complete physical protection plan is not what the regulations require for this proceeding.

For the reasons set forth above, NEV-SAFETY-196 is inadmissible because it fails to meet 10 C.F.R. §§ 2.309(f)(1)(v)-(vi).

NEV-SAFETY-197- PHYSICAL PROTECTION STANDARD

> DOE purports to adopt security measures for physical protection in accordance with standards that date largely from 1998 but, because the Commission has recently determined that those standards are inadequate in light of the terrorist attacks of September 11, 2001, DOE's plans are not adequate to protect the public and safety or the common defense and security. This contention petitions for a rule challenge pursuant to 10 C.F.R. § 2.335.

NEV Petition at 1025. In this contention, Nevada notes that in an ongoing rulemaking, the Commission acknowledged that the current regulations for security measures for physical protection at the GROA were developed under a different threat environment and are no longer adequate to protect the common defense and security and public health and safety. *Id*. Nevada argues that DOE's security measures for physical protection must also be inadequate because it is in purported accordance with requirements of a rule that the Commission has stated is no longer adequate. *Id.* at 1027. Nevada, therefore, petitions for permission to challenge the rule under 10 C.F.R. § 2.335. *Id.* at 1025-26.

Staff Response

As discussed below, however, the Commission is conducting a rulemaking to revise the current regulations for physical protection at the GROA. Therefore, NEV-SAFETY-197 is an impermissible challenge to an ongoing Commission rulemaking in violation of 10 C.F.R. § 2.335. In addition, this contention also fails to meet the requirements 10 C.F.R. §§ 2.309(f)(1)(v) and (vi). Accordingly, NEV-SAFETY-197 is inadmissible.

10 C.F.R. § 2.335: Challenge to a Commission Rulemaking

Under the provisions of 10 C.F.R. § 2.335 (formerly 2.758): "no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding subject to [Part 2]." 10 C.F.R. § 2.335(a); see, e.g., Carolina Power and Light Co. (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 544 (1986); Kansas Gas and Electric Co. (Wolf Creek

Generating station, Unit 1), ALAB-784, 20 NRC 845, 846 (1984). 10 C.F.R. § 2.335(b) provides for certification to the Commission of the question of whether a regulation of the Commission should be waived or an exception made in a particular adjudicatory proceeding. In order to challenge a Commission regulation, a petitioner must submit a supporting affidavit setting forth "with particularity" the special circumstances that justify the waiver or exception requested. 10 C.F.R. § 2.335(b). It is not enough merely to allege the existence of special circumstances in a proceeding, but a petitioner must make a prima facie showing that application of the rule or regulation as written "would not serve the purposes for which the rule was adopted." Id.; Shearon Harris, ALAB-837, 23 NRC at 546. However, petitions for waivers or exceptions are granted only in "unusual and compelling circumstances." Northern States Power Co. (Monticello Nuclear Generating Plant, Unit 1), CLI-72-31, 5 AEC 25, 26 (1972). "Special circumstances are present only if the petition properly pleads one or more facts, not common to a large class of applicants . . . that were not considered either explicitly or by necessary implication in the proceeding leading to the rule sought to be waived." Public Service Co. of New Hampshire (Seabrook Station, Units 1 & 2), CLI-88-10, 28 NRC 573, 596-97 (1988), reconsid. denied, CLI-89-3, 29 NRC 234 (1989). Also, the special circumstances must be such as "to undercut the rationale for the rule sought to be waived." Id. at 597.

Here Nevada is requesting a waiver from this general prohibition. Through its attached affidavit, Nevada argues that the application of the existing physical protection requirements

> would not serve the purposes for which these rules were adopted, to protect the public health and safety and the common defense and security, because the implementation of inadequate regulations does not provide any assurance that the public health and safety and the common defense and security would in fact be protected.

NEV Petition, Attachment 2, Affidavit of Charles J. Fitzpatrick ¶ 10. Given the Federal Register statements of the Commission referenced by Nevada, the Staff does not oppose

Nevada's request for a waiver of the general prohibition against challenging a rule in adjudication. However, Nevada's contention still must be dismissed because the contention is the subject of an ongoing rulemaking.

It has long been agency policy that Licensing Boards "should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission." *See, e.g.*, *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345; *Potomac Elec. Power Co.* (Douglas Point Nuclear Generating Station, Units 1 & 2), ALAB-218, 8 AEC 79, 85 (1974). To consider in adjudicatory proceedings "issues presently to be taken up by the Commission in rulemaking would be, to say the least, a wasteful duplication of effort." *Douglas Point,* ALAB-218, 8 AEC at 85.

Nevada refers to the Commission's declaration in the ongoing rulemaking for enhanced security at the GROA as support for its argument that the security requirements codified in Part 63 are "not adequate." NEV Petition at 1026-27. In fact, this is the exact basis for Commission's current rulemaking to enhance security at the GROA. *See* Proposed Rules, Geologic Repository Operations Area Security and Material Control and Accounting Requirements, 72 Fed. Reg. 72,522, 72,524 (Dec. 20, 2007) ("[t]he current regulations for . . . security for a GROA were developed under a different threat environment, and the threat environment has changed . . . . The NRC now believes that a new regulatory approach for protecting a GROA is necessary."). The remedy that Nevada seeks from this contention is the very action that the Commission already has decided to take in its ongoing rulemaking for enhanced security at the GROA. To consider NEV-SAFETY-197 in this adjudicatory proceeding "would be, to say the least, a wasteful duplication of effort." *See Douglas Point*, ALAB-218, 8 AEC at 85. In addition, as discussed below, NEV-SAFETY-197 fails to meet the requirements of 10 C.F.R. §§ 2.309(f)(1)(v), (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-197 is not supported by "references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting the factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). Nevada's references to the statements made in the Proposed Rule for Geologic Repository Operations Area Security and Material Control and Accounting Requirements, 72 Fed. Reg. 72,522 (Dec. 20, 2007), do not support its position in this contention. Nevada assumes that because DOE drafted its security measures in conformance for physical protection in purported conformance with a rule that the Commission is now in the process of changing, "DOE's plan is similarly inadequate." *See* NEV Petition at 1027. Nevada cites the Commission's statement in the proposed rule: "[t]he current security . . . requirements for a GROA are not adequate to protect the common defense and security or the public health and safety." NEV Petition at 1026 (citing 72 Fed. Reg. at 72,524). Nevada argues that the Commission's declaration in a proposed rule, undertaken specifically to address the changing threat environment post-9/11 and to enhance security at Yucca Mountain, is support for its proposition that the LA is therefore incapable to meet the requirements in 10 C.F.R. § 63.21(b)(3) "description of the detailed security measures for physical protection." *See id* at 1027. However, Nevada has drawn no reasonable connection between the Commission's generalized statements in an ongoing rulemaking and DOE's purported inability to meet the current security requirements in § 63.21(b)(3). Nevada offers no support for its assumption that because DOE drafted its physical protection measures in purported conformance with the existing rule, now the subject of an ongoing rulemaking, that DOE's plan is necessarily inadequate. Nevada has failed to demonstrate that anything specific to DOE's plan is deficient, or that its plan would not be protective. Therefore, Nevada fails to support NEV-

SAFETY-197 adequately and the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-197 fails to show that a “genuine dispute exists with the applicant/licensee on a material issue of law or fact.” 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "' bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

As noted above, Nevada’s sole dispute with DOE’s application is its assertion that because the Commission declared the security measures for physical protection inadequate, and DOE has submitted its physical protection plan in purported compliance with those standards, then DOE’s plan is necessarily inadequate. *See* NEV Petition at 1027. However, Nevada does not point to anything in DOE’s plan that it contends is inadequate or deficient in any respect. A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Rancho Seco*, LBP-93-23, 38 NRC at 247-48. Consequently, this contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and should is inadmissible.

For all of the foregoing reasons, NEV-SAFETY-197 should not be admitted.

NEV-SAFETY-198 - MATERIAL CONTROL AND ACCOUTNING PLAN

> DOE purports to adopt a material control and accounting program in accordance with standards that date largely from 1998 but, because the Commission has recently determined that those standards are inadequate in light of the terrorist attacks of September 11, 2001, DOE's plans are not adequate to protect the public and safety or the common defense and security. This contention petitions for a rule challenge pursuant to 10 C.F.R. § 2.335.

NEV Petition at 1028. In this contention, Nevada notes that in an ongoing rulemaking, the Commission acknowledged that the current regulations for material control and accounting ("MC&A) at the GROA were developed under a different threat environment and no longer adequate to protect the common defense and security and public health and safety. *Id*. Nevada argues that DOE's MC&A program must also be inadequate because it is in purported accordance with requirements of a rule that the Commission has stated is no longer adequate. *Id.* at 1030. Nevada, therefore, petitions for permission to challenge the rule under 10 C.F.R. § 2.335. *Id.* at 1028-29.

Staff Response

As discussed below, however, the Commission is conducting a rulemaking to revise the current regulations for MC&A at the GROA. Therefore, NEV-SAFETY-198 is an impermissible challenge to an ongoing Commission rulemaking in violation of 10 C.F.R. § 2.335. In addition, this contention also fails to meet the requirements 10 C.F.R. §§ 2.309(f)(1)(v) and (vi). Accordingly, NEV-SAFETY-198 is inadmissible.

10 C.F.R. § 2.335: Challenge to a Commission Rulemaking

Under the provisions of 10 C.F.R. § 2.335 (formerly 2.758): "no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding subject to [Part 2]." 10 C.F.R. § 2.335(a); see, e.g., Carolina Power and Light Co. (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 544 (1986); Kansas Gas and Electric Co. (Wolf Creek

Generating station, Unit 1), ALAB-784, 20 NRC 845, 846 (1984). 10 C.F.R. § 2.335(b) provides for certification to the Commission of the question of whether a regulation of the Commission should be waived or an exception made in a particular adjudicatory proceeding. In order to challenge a Commission regulation, a petitioner must submit a supporting affidavit setting forth "with particularity" the special circumstances that justify the waiver or exception requested. 10 C.F.R. § 2.335(b). It is not enough merely to allege the existence of special circumstances in a proceeding, but a petitioner must make a prima facie showing that application of the rule or regulation as written "would not serve the purposes for which the rule was adopted." Id.; Shearon Harris, ALAB-837, 23 NRC at 546. However, petitions for waivers or exceptions are granted only in "unusual and compelling circumstances." Northern States Power Co. (Monticello Nuclear Generating Plant, Unit 1), CLI-72-31, 5 AEC 25, 26 (1972). "Special circumstances are present only if the petition properly pleads one or more facts, not common to a large class of applicants . . . that were not considered either explicitly or by necessary implication in the proceeding leading to the rule sought to be waived." Public Service Co. of New Hampshire (Seabrook Station, Units 1 & 2), CLI-88-10, 28 NRC 573, 596-97 (1988), reconsid. denied, CLI-89-3, 29 NRC 234 (1989). Also, the special circumstances must be such as "to undercut the rationale for the rule sought to be waived." Id. at 597.

Here Nevada is requesting a waiver from this general prohibition. Through its attached affidavit, Nevada argues that the application of the existing MC&A requirements

> would not serve the purposes for which these rules were adopted, to protect the public health and safety and the common defense and security, because the implementation of inadequate regulations does not provide any assurance that the public health and safety and the common defense and security would in fact be protected.

NEV Petition, Attachment 2, Affidavit of Charles J. Fitzpatrick ¶ 10. Given the Federal Register statements of the Commission referenced by Nevada, the Staff does not oppose

Nevada's request for a waiver of the general prohibition against challenging a rule in adjudication. However, Nevada's contention still must be dismissed because the contention is the subject of an ongoing rulemaking.

It has long been agency policy that Licensing Boards "should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission." *See, e.g.*, *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 & 3), CLI-99-11, 49 NRC 328, 345; *Potomac Elec. Power Co.* (Douglas Point Nuclear Generating Station, Units 1 & 2), ALAB-218, 8 AEC 79, 85 (1974). To consider in adjudicatory proceedings "issues presently to be taken up by the Commission in rulemaking would be, to say the least, a wasteful duplication of effort." *Douglas Point,* ALAB-218, 8 AEC at 85.

Nevada refers to the Commission's declaration in the ongoing rulemaking for enhanced security at the GROA as support for its argument that the security requirements codified in Part 63 are "not adequate." NEV Petition at 1029. In fact, this is the exact basis for Commission's current rulemaking to enhance security at the GROA. *See* Proposed Rule for Geologic Repository Operations Area Security and Material Control and Accounting Requirements, 72 Fed. Reg. 72,522, 72,524 (Dec. 20, 2007) ("[t]he current regulations for . . . security for a GROA were developed under a different threat environment, and the threat environment has changed . . . . The NRC now believes that a new regulatory approach for protecting a GROA is necessary."). The remedy that Nevada seeks from this contention is the very action that the Commission already has decided to take in its ongoing rulemaking for enhanced security at the GROA. To consider NEV-SAFETY-198 in this adjudicatory proceeding "would be, to say the least, a wasteful duplication of effort." *See Potomac Electric Power Co.*, ALAB-218, 8 AEC at 85. In addition, as discussed below, NEV-SAFETY-198 fails to meet the requirements of 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-198 is not supported by "references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting the factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. Nevada's references to the statements made in the Proposed Rule for Geologic Repository Operations Area Security and Material Control and Accounting Requirements, 72 Fed. Reg. 72,522 (Dec. 20, 2007), do not support its position in this contention. Nevada assumes that because DOE drafted its MC&A plan in conformance with a rule that the Commission is now in the process of changing, "DOE's plan is similarly inadequate." *See* NEV Petition at 1030. Nevada cites the Commission's statement in the proposed rule: "[t]he current security . . . requirements for a GROA are not adequate to protect the common defense and security or the public health and safety." NEV Petition at 1026 (citing 72 Fed. Reg. at 72,524). Nevada argues that the Commission's declaration in a proposed rule, undertaken specifically to address the changing threat environment post-9/11 and to enhance security at Yucca Mountain, is support for its proposition that the LA is therefore incapable to meet the requirements in 10 C.F.R. § 63.21(b)(3) "description of the material control and accounting program." *See id.* at 1030. However, Nevada has drawn no reasonable connection between the Commission's generalized statements in an ongoing rulemaking and DOE's purported inability to meet the current security requirements in § 63.21(b)(3). Nevada offers no support for its assumption that because DOE drafted its MC&A plan in conformance with the existing rule, now the subject of an ongoing rulemaking, that DOE's plan is necessarily inadequate. Nevada has failed to demonstrate that anything specific to DOE's plan is deficient, or that its plan would not be protective. Therefore, Nevada fails to support NEV-SAFETY-198 adequately and the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-198 fails to show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact." 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "' bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994).

As noted above, Nevada's sole dispute with DOE's application is its assertion that because the Commission declared the MC&A program standards inadequate, and DOE has submitted its MC&A plan in purported compliance with those standards, then DOE's plan is necessarily inadequate. *See* NEV Petition at 1030. However, Nevada does not point to anything in DOE's plan that it contends is inadequate or deficient in any respect. A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Rancho Seco*, LBP-93-23, 38 NRC at 247-48. Consequently, this contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and should not be admitted.

For all of the foregoing reasons, NEV-SAFETY-198 is inadmissible.

NEV-SAFETY-199 - PERFORMANCE CONFIRMATION AND AVAILABLE TECHNOLOGY

> SAR Chapter 4, which describes what purports to be DOE's Performance Confirmation Program, fails to provide sufficient description of key equipment and process activities critical to implementation of the Performance Confirmation Program as described, and some of the key activities needed for the Program, as described, rely impermissibly on technology development or integration that is not currently available.

NEV Petition at 1031. NEV-SAFETY-199 alleges that: 1) SAR Chapter 4 fails to provide a sufficient description of key equipment and process activities that are critical to implementation of the performance confirmation as described; and 2) some of the key activities needed for the Performance Confirmation program, as described, rely impermissibly on technology development or integration that is not currently available. *Id.*

Staff Response

The Staff opposes admission of NEV-SAFETY-199 because it: (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application; and (2) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-199 fails to demonstrate that the issue it raises is material to the finding the Commission must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450,

455 (2008).

Nevada asserts that DOE's program does not comply with 10 C.F.R. §§ 63.21(c)(17), 63.102(m), 63.131(c), 63.132(b), 63.134(a) and 63.305(b), and Nevada claims that DOE's performance confirmation activities are preliminary and dependent on the future development of performance confirmation tests plans for which no completion date is specified. NEV Petition at 1032-33. Nevada assumes that much of the technology necessary to implement the plan must be developed in the future because if the technology exists today, DOE would have discussed it in the SAR which it has not *See id*. at 1033-34. Nevada then asserts that such reliance on future technology violates the cited regulations. *Id.* at 1034. As discussed below, however, Nevada misinterprets the requirements of the regulations.

The requirements for a performance confirmation program at Subpart F do not prescribe specific tests to be performed, and the burden is on DOE to develop a detailed testing program that is practicable. In the Statements of Consideration accompanying the publication of the Final Rule, the Commission stated

> The requirements allow DOE the flexibility to develop a focused and effective performance confirmation program. An alternative approach would be to prescribe in detail the specifics and limits of that program. The Commission does not want to limit DOE's options regarding testing methodologies and has chosen not to follow that approach.

"Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV," 66 Fed. Reg. 55,732, 55,745 (Nov. 2, 2001). Therefore, Nevada has not demonstrated that the regulations require any particular testing method or technique. Moreover, the regulations that Nevada cites in support of its assertion that DOE may not rely on future technology is not applicable to the performance confirmation program. *See* NEV Petition at 1032. Nevada relies on 10 C.F.R. § 63.305(b) for its assertion that DOE may not rely on future technology. *See id.* However, the provisions of 10 C.F.R. § 63.305(b) address assumptions made for modeling performance with respect to the biosphere characteristics

during the period after permanent closure. The performance confirmation program will end with permanent closure of the facility as indicated at 10 C.F.R. § 63.131(b). 10 C.F.R. § 63.305(b) is not related to performance confirmation. Therefore, Nevada fails to raise an issue that is material to the finding the Staff must make.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-199 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" must "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455.

NEV-SAFETY-199 alleges that DOE has failed to comply with a number of regulatory provisions in Part 63. NEV-SAFETY-199 alleges that the description of the performance confirmation plan in the SAR is insufficient under 10 C.F.R. § 63.21(c)(17), which requires the SAR to include a description of the performance confirmation plan that "meets the requirements of subpart F." NEV Petition at 1036. However, 10 C.F.R. Part 63 does not specify the level of detail that is required to be included in the performance confirmation plan.

NEV-SAFETY-199 alleges that the application fails to comply with 10 C.F.R. § 63.131(c), 10 C.F.R. §§ 63.132(b), and 10 C.F.R. § 63.134(a). NEV Petition at 1036. However, Nevada fails to provide any expert opinion or fact that would indicate that DOE's plans do not meet the pertinent requirements. As discussed above, 10 C.F.R. Part 63 does not specify the level of detail that is required to be included in the performance confirmation plan. The

application includes future activities that are planned, and these are presented in the performance confirmation plan. The contention does not allege the plan fails to adopt the areas addressed in these provisions of Subpart F. Therefore, NEV-SAFETY-199 should be rejected because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact…The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station), CLI-01-24, 54 NRC 349, 358 (2001).

Here, NEV-SAFETY-199 alleges that the description of the performance confirmation plan in the SAR is insufficient. NEV Petition at 1036. However, as discussed above, Nevada does not include any information or support showing that the performance confirmation plan fails to comply with any applicable requirements. NEV-SAFETY-199, therefore, does not raise a genuine dispute of material law or fact with respect to the application and should be rejected.

NEV-SAFETY-200 - PERFORMANCE CONFIRMATION PROGRAM LEVEL OF INFORMATION

> SAR Chapter 4, which describes what purports to be DOE's Performance Confirmation Program, fails to provide an adequate description of such a program because DOE's efforts to develop its Program are so incomplete that meaningful and reviewable descriptions are impossible.

NEV-SAFETY-200 asserts that Chapter 4 of the SAR fails to comply with the requirements of 10 C.F.R. § 63.21(c)(17) to provide a description of the performance confirmation program, as defined in 10 C.F.R. § 63.2, and that it also fails to implement the concept of Performance Confirmation, as described in 10 C.F.R. §§ 63.21(c)(17), 63.102(m), 63.131(c), 63.132(b), 63.134(a), and 63.305(b). NEV Petition at 1035-1036.

Staff Response

The Staff opposes admission of NEV-SAFETY-200 because it (1) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) to demonstrate that the issue raised is material to findings the NRC must make to grant or deny DOE's application; and (2) fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

Nevada must demonstrate that the issue raised is material to findings the NRC must make regarding the action involved in the proceeding. 10 C.F.R. § 2.309(f)(1)(iv). An issue or dispute is material if "its resolution would 'make a difference in the outcome of the licensing proceeding.'" Duke Energy Corporation (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-34 (quoting Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989)). See also Virginia Elec. & Power Co. (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480, 486, 491 (1976), aff'd, 571 F.2d 1289 (4th Cir. 1978) (information

is material if it would have a natural tendency or capability to influence the Staff's decision regarding an action); Randall C. Orem, D.O., CLI-93-14, 37 NRC 423, 428 (1993) (information material to a decision whether to grant a radioactive byproduct materials license). In this proceeding, the finding the Staff must make is of whether "there is reasonable assurance that ...radioactive materials ...can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and ...there is reasonable expectation that [radioactive] materials can be disposed of without unreasonable risk to the health and safety of the public" as required by 10 C.F.R. § 63.31(a). In particular, with respect to this contention, the issue is whether 63.31(a)(3)(i), requiring DOE to describe the proposed geologic repository, has been met. Here, Nevada fails to provide any analysis or reference that supports its proposition that DOE's SAR does not provide a description of the performance confirmation program that complies with 10 C.F.R. Part 63, subpart F such that 63.31(a)(3)(i) has not been met. Therefore, this contention fails to meet 10 C.F.R. § 2.309(f)(1)(iv).

Nevada argues that DOE's Performance Confirmation Program, fails to provide an adequate description of such a program because DOE's efforts to develop its program are so incomplete that meaningful and reviewable descriptions are impossible. NEV Petition at 1035. Nevada also argues that most of DOE's performance confirmation activities are conceptual in nature. Id. at 1037. However, 10 C.F.R. Part 63 does not specify the level of detail required in the DOE's performance confirmation plan.

Further, the requirements for a performance confirmation program at Subpart F do not prescribe specific tests to be performed. The burden is on DOE to develop a detailed testing program that is practicable. This is confirmed in the Statement of Consideration accompanying publication of the Final Rule for Part 63. As stated, "[t]he requirements allow DOE the flexibility to develop a focused and effective performance confirmation program. An alternative approach would be to prescribe in detail the specifics and limits of that program.

The Commission does not want to limit DOE's options regarding testing methodologies." Final Rule, Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55732, 55745 (Nov. 2, 2001).

Nevada also asserts that DOE's performance confirmation program fails to meet 10 C.F.R. § 63.305(b). However, Nevada wrongly assumes that 10 C.F.R. § 63.305(b) is related to performance confirmation. The performance confirmation program will end with permanent closure of the facility as indicated at 10 C.F.R. § 63.131(b). The provision of 10 C.F.R. § 63.305(b) address assumptions made for modeling performance with respect to the biosphere characteristics during the period after permanent closure. Therefore, NEV-SAFETY-200 must be rejected because its assertion that DOE did not follow the requirements of 10 C.F.R. § 63.21(c)(17), 63.131 and 63.132 fails to demonstrate that the issue raised is material to findings the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-200 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" must "be as specific as reasonably possible." *U.S. Department of Energy* (High-Level Waste Repository: Pre-Application Matters, Advisory PAPO Board), LBP-08-10, 67 NRC 450, 457 (2008).

In NEV-SAFETY-200, Nevada assert that DOE's performance confirmation plan "is

simply a plan for a plan for which there is no committed substance" NEV Petition at 1037. However, Nevada fails to provide any expert opinion or fact that would indicate that DOE's plans are inappropriate. As discussed above, 10 C.F.R. Part 63 does not specify the level of detail that is required to be included in the performance confirmation plan. NEV-SAFETY-200 alleges that the application fails to comply with 10 C.F.R. §§ 63.131(c), 63.132(b), and 63.134(a). NEV Petition at 1036. The application includes future activities that are planned, and these are presented in the performance confirmation plan. The contention does not allege the plan fails to adopt the areas addressed in these provisions of Subpart F. Accordingly, Nevada's bald assertions that DOE's plans lack detail is insufficient to support the admission of its contention.

NEV-SAFETY-201 – RELIANCE ON PRELIMINARY OR CONCEPTUAL DESIGN INFORMATION

> Legal Issue: The LA [License Application] cannot be granted because it relies on preliminary or conceptual design information for both pre-closure and post-closure aspects.

NEV Petition at 1039. Nevada alleges that 10 C.F.R. Part 63 "considered with its history and contemporaneous NRC and DOE interpretations, require an essentially one-step licensing process in which the final design must be submitted and approved before a construction authorization may be issued." *Id.* Nevada states that "[p]reliminary and conceptual design information of the type found in the LA is not final design information" and is deficient. NEV Petition at1040-1041.

Staff Response

The Staff opposes admission of NEV-SAFETY-201 because it: (1) fails to assert an issue of law or fact that is material to the findings the NRC must make; (2) fails to provide facts or expert opinions to support its contention; and (3) fails to provide sufficient information to show that a genuine dispute exists with the applicant or specific portions of the LA. *See* 10 C.F.R. §§ 2.309(f)(1)(iv)-(vi).

Although the Commission stated that matters raised in the "State of Nevada's Petition to Reject DOE's Yucca Mountain License Application as Unauthorized and Substantially Incomplete," June 4, 2008 and Nevada's July 21, 2008 supplement, which include challenges to the design detail in DOE's LA, would be appropriately raised for consideration as proposed contentions in response to the Notice of Hearing, *see U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-20, 68 NRC __ (Aug. 22, 2008) (slip op. at 1 n.2, 4), nothing in the Commission's decision indicates that such challenges do not have to satisfy the contention pleading requirements. *See generally High Level Waste Repository,* CLI-08-20, 68 NRC __ (slip op. at 2 n.7) (citing 10 C.F.R. § 2.309(f)). Thus, Nevada's challenge to the level of design detail must satisfy the 10 C.F.R. § 2.309(f)(1) requirements to be an

admissible contention.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

NEV-SAFETY-201 is inadmissible because it fails to assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). The APAPO specified that the 10 C.F.R. § 2.309(f)(1)(iv) materiality requirement requires "citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *See U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

Here, Nevada generally asserts that NEV-SAFETY-201 "challenges compliance with applicable NRC regulations" and essentially argues that Part 63 requires final design information. *See* NEV Petition at 1040. Nevada has not, however, pointed to any part of the Commission's regulations defining or distinguishing between preliminary, conceptual or final designs, which have not been satisfied. *See* NEV Petition at 1039-1040. The NRC's determination to authorize construction will be based on review and consideration of DOE's LA. *See* 10 C.F.R. § 63.31. The Commission may authorize construction of a geologic repository operations area if it determines, among other things, that based on review and consideration of the submitted information, there is reasonable assurance that receipt, possession, and disposal of radioactive materials at the proposed repository can be achieved without unreasonable risk to the health and safety of the public. 10 C.F.R. § 63.31(a). Nothing in Part 63 indicates that DOE's design information must be "final." Rather, DOE must provide sufficient information for the NRC Staff to make the necessary determinations. See Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, 66 Fed. Reg. 55,732, 55,739 (Nov. 2, 2001). Thus, Nevada has not shown that the regulations have not been satisfied explicitly or implicitly. *See, e.g.,* High-Level Waste Repository, LBP-08-10, 67 NRC at 457.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-SAFETY-201 is inadmissible because it fails to provide supporting alleged facts or expert opinions as required by 10 C.F.R. § 2.309(f)(1)(v). Nevada states that its "contention raises a purely legal question, and supporting facts and opinions are not necessary beyond those discussed below." NEV Petition at 1040. The information Nevada sets forth, however, does not provide the requisite facts or expert opinions to support Nevada's assertion that Part 63 requires final design information to be submitted and approved before issuance of a construction authorization.

Nevada refers to a number of SAR subsections, the lack of a final TAD design, and cites to its July 21, 2008 pleading for specific examples of deficiencies. *See id.* at 1040. Nevada also references its June 4, 2008 petition to demonstrate that this contention is within the scope of the proceeding. *Id.* at 1039. Nevada does not, however, provide any regulatory authority nor does it specifically refer to the legal discussions in its earlier pleadings to support the assertion that Part 63 requires final design information. *See id.* at 1039-1040. Other than simply asserting DOE's design information is deficient because it is not final, Nevada offers no explanation or support as to why the descriptions provided in the SAR are insufficient. *See id.* Bare assertions cannot support the admission of this contention. *See Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)).

With respect to Nevada's references to its earlier filings, the Board should not have to search through Nevada's pleadings and other materials in search of support for the assertion that the regulations require final design information. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 457 (2006). However, a review of the June and July 2008 pleadings indicates that they also fail to show that Part 63 requires that "final designs" be submitted and approved before the Commission can issue a construction authorization. *See*

66 Fed. Reg. at 55,739.

Nevada also refers to a DOE document stating that "engineering drawings prepared for the LA will be preliminary design drawings" to support this contention. *See* NEV Petition at 1040 (citing "Desk Top Instructions for Preparing Preliminary Design Drawings for License Application" at Sect. 3.1 at 3 (Jan. 14, 2004) (LSN# DN2001625181)). However, DOE's Desk Top Instructions also state that "[p]reliminary design drawings should provide sufficient information such that a person technically qualified in the subject can understand the design and verify the adequacy of the drawing to support the design to meet the requirements of for which the design is being prepared (i.e., LA)." LSN# DN2001625181 at Sect. 2.3 at 3. Furthermore, the sentence which immediately precedes Nevada's citation states that "[t]he level of detail needed in design drawings should be commensurate with the purpose for which the design is being prepared (LA, procurement, construction, and operations) and increases as the design develops." *Id.* at Sect. 3.1 at 3. The Desk Top Manual does not support Nevada's position that the descriptions of its pre- and post-closure designs are legally insufficient because they are preliminary and conceptual. *See* NEV Petition at 1040-1041.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-201 fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Here, Nevada argues that Part 63, considered with its history and interpretations, requires that "final design be submitted and approved before a construction authorization may be issued." *See* NEV Petition at 1040. Nevada has failed to show a genuine dispute exists on a material issue of law because, as discussed above, the Commission's regulations do not require final design information be submitted and approved before issuance of a construction authorization. Furthermore, Nevada has not provided supporting facts, regulatory authority, or a reasoned explanation as to why the application is unacceptable in a material respect; Nevada simply

makes the bare and conclusory allegation that the design information is deficient because it is not final. *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) ("The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant."). Therefore, NEV-SAFETY-201 fails to satisfy 10 C.F.R. § 2.309(f)(vi).

For the reasons set forth above, NEV-SAFETY-201 is inadmissible because it fails to meet 10 C.F.R. § 2.309(f)(1)(iv), (v), and (vi).

NYE-SAFETY-3 - FAILURE TO INCLUDE ACTIVITIES IN THE PERFORMANCE CONFIRMATION PROGRAM SUFFICIENT TO ASSESS THE ADEQUACY OF INFORMATION USED AS THE BASIS FOR THE SITE-SCALE-MODEL RELIED UPON TO EVALUATE THE CAPABILITY OF THE SATURATED ZONE (SZ) FEATURE OF THE LOWER NATURAL BARRIER (LNB) FOLLOWING REPOSITORY CLOSURE

> The applicant fails to include activities in the performance confirmation program required as part of the Safety Analysis Report (SAR) [*Yucca Mountain Repository License Application, General Information and Safety Analysis Report.* DOE/RW-0573 REV 0. 2008. (SAR Table 4-1, p. 4-43 to 4-47). LSN DEN001592183] sufficient to assess the adequacy of the assumptions, data, and analyses that support the site-scale model used in evaluating the capability of the SZ feature of the LNB to limit the movement of radionuclides to the accessible environment [*Yucca Mountain Repository License Application, General Information and Safety Analysis Report.* DOE/RW-0573 REV 0. 2008. (SAR p. 2.1-9, 2.1-10). LSN DEN001592183; *Postclosure Nuclear Safety Design Bases*. ANL-WIS-MD-000024 REV 01. 2008 (p. 6-49). LSN DEN001580576]. See 10 CFR 63.102(m) and 63.131(a)(2). The resolution of the regional model, from which the sitescale model is derived, is such that its use as a source of inputs for calibration of the site-scale model introduces uncertainty. Because of data gaps and discrepancies between the regional model and site-scale model, Nye County asserts that additional information is needed to determine conditions along the boundaries of the site-scale model to assess the adequacy of the basis for this model in evaluating the capability of the SZ. Nye County proposes that a series of wells be drilled on the site model boundaries, particularly the northern and eastern boundaries, to allow accurate measures of hydraulic gradients and that each well be tested to provide accurate measures of key aquifer parameters. It is only through direct measurement that discrepancies between the two models can be resolved and the adequacy of the basis for the site-scale model evaluated. The collection of this additional data will preclude the need to use inputs from the regional model in calibrating the site-scale model and allow the site-scale model to stand alone.

NYE Petition at 32-33. NYE-SAFETY-3 alleges that DOE failed to include activities in the performance confirmation program proposed by DOE to adequately assess the adequacy of the assumptions, date, and analyses that support the site-scale model used in evaluating the capability of the saturated zone (SZ) feature of the lower natural barrier (LNB) to limit

movement of radionuclides to the accessible environment. NYE Petition at 32. This contention is virtually identical of NYE-SAFETY-2. Specifically, Nye County asserts that additional information is needed to asses the capability of the site-scale model used by DOE to evaluate the capability of the SZ and that that information should be generated through the performance confirmation program. *See id.* at 32.

Staff Response

However, as discussed below, NYE-SAFETY-3 is not supported by facts or expert opinion, it should, therefore, be dismissed.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel,* Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, assertions, without further explanation, even from an expert are insufficient to meet the requirement of 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

Here, Nye County provides no facts or expert opinion to support NYE-SAFETY-3. Nye County takes issue with DOE's use of the site-scale model to evaluate the capability of the SZ feature of the LNB to limit the movement of radionuclides into the accessible environment. NYE Petition at 32. The site-scale SZ model relies on inputs from the Death Valley regional flow system model. NYE Petition at 33. According to Nye County, this regional model "lacks the appropriate level of resolution and a foundation of well-distributed data sets to ensure the adequacy of the basis for the site-scale model." NYE Petition at 33. Nye County then claims that DOE's performance confirmation activities associated with the

SZ zone are insufficient to assess the adequacy of the site-scale model. NYE Petition at 33, 35.

Nye County offers several reasons why the use of the site-scale model is not appropriate. None of these reasons are supported by any facts or expert opinions. Nye County further fails to provide any fact or expert opinion that explains why these alleged inadequacies show that the performance confirmation program proposed by DOE associated with the SZ is inadequate. Nye County asserts that based on "evaluations and the results of field investigations," the regional and site-scale models are not adequate to simulate the pathways for groundwater flow. NYE Petition at 38. However, Nye County does not provide references to these field investigations and the only evaluation referenced by Nye County indicated that the use of the models was appropriate. *See* NYE Petition at 37-38. Nye County provides other examples of alleged deficiencies of the site-scale model. Specifically, Nye County questions the methods used to estimate recharge and groundwater discharge via evapotranspiration. NYE Petition at 40-41. Nye County asserts, without any explanation, that these estimates "may significantly underestimate" the effects of these two processes in the site-scale model. NYE Petition at 41. However, none of Nye County's assertions are supported by facts or expert opinion. Accordingly, Nye County's assertions are, therefore, insufficient to meet 10 C.F.R. 2.309(f)(1)(v). NYE-SAFETY-3 should, therefore be dismissed. *See USEC*, CLI-06-10, 63 NRC at 472.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the

Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). Nye County claims to raise an issue with DOE's performance confirmation program as it relates to the site-scale model relied upon to evaluate the SZ. *See* NYE Petition at 32, 35, 42. However, although providing numerous references to the SAR regarding the models, Nye County fails to indicate why the performance confirmation program DOE proposes is not adequate for its intended purpose. Pursuant to 10 C.F.R. § 63.102(m), the performance confirmation program is required to evaluate the adequacy of the information that led to the findings that permitted the construction of the repository. *See* Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,743-44 Nov. 2, 2001). Nye County simply asserts that the performance confirmation activities proposed by DOE are limited to only certain activities. NYE Petition at 33. However, nothing Nye County asserts demonstrates a dispute with DOE regarding its performance confirmation program. Rather, Nye County appears to raise issues concerning the models themselves and fails to show how the alleged inadequacies in the model demonstrate that the performance confirmation program is inadequate. For example, Nye County alleges that "[i]t is only through direct measurement that discrepancies between the two models can be resolved and the adequacy of the basis for the site-scale model evaluated." Nye Petition at 32-33, *see also, id.* at 38 ("the regional and site-scale models are not of sufficient resolution to simulate known pathways for groundwater flow that are critical in evaluating the capability of the SZ to limit the movement of water and radionuclides to the accessible environment."). As discussed above, Nye County fails to provide any basis for its assertion that the models used by DOE to characterize groundwater flow in the SZ are inadequate. Moreover, nothing Nye County claims in support of its assertion that DOE's performance confirmation program associated with the SZ is inadequate, actually indicates

that the program is inadequate. The deficiencies claimed, lack of bases and support notwithstanding, are more appropriately placed in the context of the section 2.3.9 of SAR, rather than the performance confirmation plan. The technical issues Nye County raises appear to be related to the adequacy of characterization. Thus, Nye County fails to demonstrate that a genuine dispute exists with the applicant on a material issue of law or fact. NYE-SAFETY-3 should, therefore, be dismissed.

NYE-SAFETY-4 - INADEQUATE CONSIDERATION OF THE RADIATION DOSE FROM NATURALLY OCCURRING RADON EMITTED AS A RESULT OF REPOSITORY CONSTRUCTION AND NORMAL OPERATIONS

> DOE has failed to fully identify, examine, and evaluate the effect of construction and operational activities upon air quality and personnel in the general environment around Yucca Mountain, as required by 40 CFR 197, 10 CFR §63.111, §63.112, §63.202, and §63.204. Specifically, DOE has inadequately considered the radiation dose to members of the public from naturally occurring radon and its decay products emitted as a result of repository construction and normal operations.

NYE Petition at 44. Nye County alleges that "DOE has inadequately considered the radiation dose to members of the public from naturally occurring radon and its decay products emitted as a result of repository construction and normal operations." NYE Petition at 44. Nye County notes that the reported radiation dose in the Supplemental Environmental Impact Statement is 99.8 percent due to release of naturally occurring radon and its decay products caused by ventilating the repository, but claims that DOE has inappropriately failed to report this dose in the license application. NYE Petition at 44. Nye County argues that, because this dose is such a large component of the 15 mrem dose allowed for a member of the public and because of possible channeling effects of local terrain near the repository, DOE's network of nine meteorological stations may be inadequate to assure public protection. NYE Petition at 44-45.

Staff Response

The Staff opposes the admission of NYE-SAFETY-4 in that it (a) does not raise an issue material to the findings the NRC must make to support the action involved in the proceeding, (b) does not provide alleged facts or expert opinions which support the petitioner's position on the issue, and (c) does not demonstrate that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(iv), (v), and (vi).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

The Atomic Energy Act of 1954, as amended, authorizes the Commission to

> establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material...in addition, the Commission shall prescribe such regulations or orders…with regard to…any equipment or device…capable of separating the isotopes of uranium or enriching uranium…

42 U.S.C. § 2201(b) (2000). Therefore, the NRC has authority to regulate source, byproduct, and special nuclear materials. The definitions of these terms are provided in the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2014(e), (z), and (aa) (2000). Naturally occurring radon clearly cannot be classified as either source or special nuclear material. *See id.* at § 2014(z) and (aa); 10 C.F.R. §§ 40.4 and 70.4. The Energy Policy Act of 2005 expanded the Atomic Energy Act of 1954 definition of byproduct material to include any discrete source of radium-226, any material made radioactive by use of a particle accelerator, and any discrete source of naturally occurring radioactive material, other than source material, that the Commission determines would pose a similar threat to the public health and safety or the common defense and security as a discrete source of radium-226, that is extracted or converted after extraction for use for a commercial, medical, or research activity. 42 U.S.C. § 2014(e)(4) (Supp. 2008). In 2007, the Commission, pursuant to this new authority, included discrete sources of radium-226 as byproduct material. Requirements for Expanded Definition of Byproduct Material, 72 Fed. Reg. 55,864, 55,864 (Oct. 1, 2007). The Commission concluded that "only polonium-210 has the potential to pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security." *Id.* at 55,869. Since the NRC had already begun regulating "polonium-210 because it is produced in nuclear reactors and is rarely extracted as naturally occurring radioactive material," the Commission decided that, "at this time, the NRC's regulations will not apply to any discrete sources of naturally occurring radioactive material,

other than radium-226." *Id.* As such, the Commission did not include radon in this expanded authority. *See id.* Consequently, the NRC does not have authority to regulate naturally occurring radon. Thus, doses to the public from naturally occurring radon are not material to the decision whether to grant or deny the construction authorization sought by DOE. As such, NYE-SAFETY-4 does not raise a material issue and is inadmissible. *See* 10 C.F.R. § 2.309(f)(1)(iv); *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 24 (2007); *Southern Nuclear Operating Company* (Early Site Permit for Vogtle ESP Site), LBP-07-03, 65 NRC 237, 253 (2007).

In support of its contention, Nye County cites the preclosure standard that DOE must meet, 10 C.F.R. § 63.204. NYE Petition at 45-46. This standard applies to the dose from the combination of management and storage of *radioactive material* outside of the repository but within the site and storage of *radioactive material* inside the repository. 10 C.F.R. § 63.204 (emphasis added). Subpart K, where § 63.204 is located, defines "radioactive material" as "matter composed of or containing radionuclides subject to the Atomic Energy Act of 1954, as amended (42 U.S.C. sec. 2014 *et seq.*)." 10 C.F.R. § 63.202. As discussed above, naturally occurring radon is not "radioactive material" subject to the Atomic Energy Act of 1954, as amended. Accordingly, the preclosure standard does not take into account naturally occurring radon.

Nye County also cites EPA's preclosure safety standard, 40 C.F.R. § 197.4. This standard applies to the management and storage, as defined by 40 C.F.R. § 191.2, of radioactive material outside of the repository but within the Yucca Mountain site and storage, as defined by 40 C.F.R. § 197.2, of radioactive material inside the repository. 40 C.F.R. § 197.4. Under § 191.2, management and storage applies to spent nuclear fuel and radioactive waste. Naturally occurring radon does not fit the definition of either of these. Under § 197.2, storage applies to radioactive material, which is also defined in § 197.2 as "matter composed of or containing radionuclides subject to the Atomic Energy Act of 1954,

as amended (42 U.S.C. sec. 2014 *et seq.*)." 40 C.F.R. § 197.2. This definition is the same as the one the NRC uses. *See* 10 CFR § 63.202. Therefore, neither the EPA nor the NRC preclosure safety standard takes into account naturally occurring radon.

Nye County also discusses 10 C.F.R. § 20.1101(b) and (d) and states that "[c]ontrary to the DOE assertion that 10 C.F.R. 20.1101(d) provides an exclusion to the requirements of 10 CFR 63 as related to naturally occurring Radon-222, this section actually provides an additional constraint on airborne radiation releases by other licensees." NYE Petition at 47-48. It appears that Nye County is arguing that because § 20.1101(d) provides a higher dose limit than what is permitted under Part 63, its provisions do not apply to DOE. Thus, according to Nye County, Part 20 does not provide an exclusion under Part 63. NYE Petition at 48. As discussed above, Part 63 does not require consideration of naturally occurring radon, regardless of the Part 20 limitation on airborne radiation releases. Further, 10 C.F.R. § 20.1101(d) is applicable to the geologic repository operations area at Yucca Mountain. 10 C.F.R. § 63.111(a)(1). Accordingly, the exclusion of Radon-222 and its daughters from consideration in the dose from air emissions is applicable. *See* 10 C.F.R. § 20.1101(d). Nye County also argues that DOE, "in the spirit of good ALARA practices," *should* consider naturally occurring radon when evaluating dose to members of the public under Part 20. Since Part 20 excludes naturally occurring radon from the dose calculation, NRC does not have any regulatory basis for considering it and need not make any finding with respect to it when determining whether to grant or deny the construction authorization. Accordingly, NYE-SAFETY-4 is not material and should not be admitted.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Because Nye County believes naturally occurring radon must be considered, Nye County also addresses the adequacy of monitoring to model offsite radiation dose. NYE Petition at 51-54. The Staff notes that the petitioner makes assertions in this section of the contention that should be supported by expert opinions or references to specific sources or documents but are not. *See* 10 C.F.R. § 2.309(f)(1)(v). For example, Nye County asserts that "localized wind patterns including wind channeling and convection currents are known to exist in and around the repository site," and "[l]ocalized wind patterns may concentrate radionuclides to a level exceeding the regulations." NYE Petition at 51, 52. However, Nye County provides no reference to any document, fact, or expert opinion to support this assertion. Accordingly, even if other parts of NYE-SAFETY-4 are admissible, the portions of the contention dealing with the adequacy of monitoring should be excluded because they are not supported by facts or expert opinion. *See* 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention alleges that DOE's license application has "inappropriately ignored and failed to report that radiation dose caused by repository construction and operations in its License Application (LA)." NYE Petition at 44. However, as discussed above in relation to the materiality requirement in 10 C.F.R. § 2.309(f)(1)(iv), while Nye County has cited regulations it claims support its position, they do not, in fact, support its assertion that DOE must consider the dose from naturally occurring radon in its preclosure safety analysis. Therefore, the petitioner has not established a genuine dispute regarding the application, and the contention is inadmissible. *See* 10 C.F.R. § 2.309(f)(1)(vi) ("[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the *supporting reasons* for the petitioner's belief…" is required.) (emphasis added). In sum, this contention should be rejected.

NYE - (JOINT) SAFETY-5 - FAILURE TO INCLUDE THE REQUIREMENTS OF THE NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS), DATED MARCH 1, 2004, AND RELATED DOCUMENTATION IN SECTION 5.7 EMERGENCY PLANNING OF THE YUCCA MOUNTAIN REPOSITORY SAFETY ANALYSIS REPORT (SAR).

> The applicant failed to include key interoperability and standardized procedure and terminology requirements of the National Incident Management System (NIMS), in the Emergency Planning required as part of the Safety Analysis Report [Yucca Mountain Repository License Application, General Information and Safety Analysis Report. DOE/RW-0573 REV 0. 2008 (SAR Section 5.7; SAR pp 5.7-1 to 5.7-55). LSN DEN001592183] to sufficiently ensure the ability of Nye County and other offsite agencies to properly plan and respond to onsite emergency actions. See requirements at 10 CFR 63.161 and 10 CFR 72.32(b).

NYE Petition at 56. NYE-JOINT-SAFETY-5 asserts that SAR Section 5.7 fails to include key interoperability and standardized procedure and terminology requirements of the National Incident Management System (NIMS), as required by 10 CFR §§ 63.161 and 72.32(b). Id. As a result of this alleged failure, Nye County and other offsite agencies lack needed information to properly plan and respond to onsite emergency actions. Id.

Staff Response

The Staff opposes admission of NYE-JOINT-SAFETY-5 because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1) to demonstrate that the issue raised is within the scope of the proceeding and to raise a genuine dispute regarding the application.

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that "the issue raised is within the scope of the proceeding." 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). This proceeding was initiated when the Commission issued "Notice of Hearing and Opportunity to Petition for Leave to Intervene." *U.S. Dep't of Energy* (High Level Waste

Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op.). The Notice stated that the scope of the hearing was to "consider the application for construction authorization filed by DOE pursuant to Section 114 of the Nuclear Waste Policy Act of 1982 (NWPA), 42 USC 10134, and pursuant to 10 CFR Parts 2 and 63." *Id*. at __ (slip op. at 1).

10 C.F.R. § 63.21(c)(21) requires DOE to include in the SAR supporting its application for a construction authorization a description of an emergency plan as required by 10 C.F.R. § 63.161. Section 63.161 requires DOE to develop an emergency plan based on the criteria of 10 C.F.R. § 72.32(b). NYE-JOINT-SAFETY-5 acknowledges that "[t]he SAR addresses NRC directives and DOE requirements," including the requirement to submit a description of an emergency plan based on the criteria of 10 C.F.R. § 72.32(b), as required by 10 C.F.R. § 63.21(c)(21). See NYE Petition at 56. However, Nye County argues that, in addition to describing an emergency plan that meets the NRC criteria for an emergency plan, DOE should also describe how the emergency plan will meet the requirements of NIMS. However, the scope of the instant proceeding is limited to the requirements of 10 C.F.R. Part 63. *High Level Waste Repository*, CLI-08-25, 68 NRC at __ (slip op. at 1). Disputes over whether DOE has met other requirements outside of Part 63 are outside the scope of this proceeding. Therefore, NYE-JOINT-SAFETY-5 does not comply with 10 C.F.R. § 2.309(f)(1)(iii) and, therefore, is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner argues was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review*

declined, CLI-94-2, 39 NRC 91 (1994).

Here, Nye County acknowledges that DOE has complied with NRC regulations related to the emergency plan description. NYE Petition at 59. The county asserts that DOE must also describe how its emergency plan will meet the NIMS criteria. However, as discussed above, the NIMS criteria are outside the scope of the instant proceeding. Nye County identifies no other specific error or omission in the SAR, and, therefore, has not shown a genuine dispute with regard to a material issue of law or fact, as required by 10 C.F.R. § 2.309(f)(1)(vi). For this reason, NYE-JOINT-SAFETY-5 is inadmissible.

For the reasons discussed above, NYE-JOINT-SAFETY-5 should be rejected.

NYE-JOINT-SAFETY-6 – THE LA LACKS ANY JUSTIFICATION OR BASIS FOR EXCLUDING POTENTIAL AIRCRAFT CRASHES AS A CATEGORY 2 EVENT SEQUENCE

> Contrary to the requirements of 10 CFR 63 to provide the technical basis for the inclusion or exclusion of specific human-induced hazards in the repository preclosure safety analysis, the Department of Energy (DOE) has merely assumed the U.S. Air Force (USAF) will restrict their activities in the repository vicinity. No basis or justification for that assumption is provided by DOE in its repository License Application (LA) or supporting documents.

NYE Petition at 67. NYE-JOINT-SAFETY-6 was jointly sponsored by Nye County (the lead), the Four Nevada Counties, and Inyo County. *Id.* at 72. In this contention, petitioners assert that DOE failed to provide the technical basis or justification for excluding aircraft hazard to surface facilities as an initiating event. *Id.* at 67. The petitioners state, citing SAR Section 1.6.3.4.1 at 1.6-22, that " '[t]he accident analysis conducted assumed that such flight restriction would occur.' " *Id*. The petitioners assert that "[n]o further basis or justification of this critical assumption is discussed." *Id*.

Staff Response

The Staff opposes the admission of NYE-JOINT-SAFETY-6 in that it does not provide sufficient facts or expert opinions to support the petitioners' position on the issue, and it does not demonstrate that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(v) and (vi).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

In order for a contention to be admissible under the standards set forth in 10 C.F.R. § 2.309(f)(1)(v), the contention must provide a concise statement of the facts or opinions supporting the contention together with reference to the specific sources the petitioner intends to rely upon. A contention will be inadmissible if the petitioner has offered no tangible information, no experts, no substantive affidavits, but instead only bare assertions

and speculation. *USEC, Inc*. (American Centrifuge Plant), LBP-05-28, 62 NRC 585, 597 (2005), *citing Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

In paragraph 5.b. of the contention, the petitioners assert that "[w]ithout the flight restrictions assumed by DOE, its calculation of aircraft crash event sequence probability would likely have significantly different results." NYE Petition at 70. The petitioners base this assertion on an assumption used in the SAR and for a calculation in a supporting document. *Id.* at 70-71. From this, the petitioners "*presume*[ ] that without the unjustified assumption that an aircraft crash into repository facilities would be much more probable and categorized as a category 2 event sequence per 10 CFR 63.2." *Id*. Petitioners do not cite any expert opinion or facts in support of these conclusions. Rather, they are bare assertions and speculation and, therefore, do not meet the standard in § 2.309(f)(1)(v) that requires contentions to have supporting facts or expert opinion.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The petitioners state that DOE "has merely assumed the U.S. Air Force (USAF) will restrict their activities in the repository vicinity. No basis or justification for that assumption is provided by DOE in its repository License Application (LA) or supporting documents." NYE Petition at 67. The petitioners cite SAR Sections "1.6.3.4.1, pp. 1.6-21, 6-22, and 6-23, Section 5.7; SAR pp 5.7-1 to 5.7-55" as the "relevant LA sections." *Id.* at 72. However, the petitioners do not address SAR Section 1.9.3, Table 1.9-10, or SAR Section 5.8.3. In SAR Section 1.9.3, DOE states that "[p]rocedural safety controls are activities performed by both repository and nonrepository personnel whose actions affect repository activities to ensure that operations are within the analyzed conditions of the PCSA [preclosure safety analysis] and TSPA. SAR Section 1.9.3 at 1.9-19. Table 1.9-10 identifies the preclosure procedural safety controls. *Id.* Procedural Safety Controls 15 through 18 relate to aircraft operational controls. SAR Table 1.9-10 at 1.9-144 to 1.9-145. Further, DOE states in SAR Section

5.8.3:

> Prior to receipt of a license to receive and possess SNF and HLW, and in accordance with 10 CFR 63.121(c), controls will be implemented to ensure that the requirements of 10 CFR 63.111(a) and (b) are met. The site boundary, as shown in Figure 5.8-2, will be considered as the boundary of the preclosure controlled area under the definition of 10 CFR 20.1003. Such land use controls will include ensuring that U.S. Air Force flight activities in the proximity of the GROA remain within the repository performance analysis considerations of existing and projected U.S. Air Force flight activity (Section 1.6.3.4.1).

SAR Section 5.8.3 at 5.8-7. The petitioners do not reference these portions of the license application or address why these explanations are not adequate to justify DOE's treatment of U.S. Air Force activities over the proposed flight restricted airspace. Consequently, the petitioners have failed to establish a genuine dispute on a material issue of fact or law, and the contention is inadmissible on this basis. *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007) ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed.") (citations omitted).

b. Environmental Contentions

4NC-NEPA-1 - INSUFFICIENT ANALYSIS IN THE ENVIRONMENTAL IMPACT STATEMENT OF SIGNIFICANT AND SUBSTANTIAL CONSIDERATIONS OF THE ENVIRONMENTAL IMPACTS OF TRANSPORTATION BY TRUCK THROUGH THE FOUR COUNTIES

> Applicant failed to effectively address key issues in the Final Supplemental Environmental Impact Statements regarding the transportation by truck of Spent Nuclear Fuel (SNF) and High Level Radioactive Waste (HLW), as required by the National Environmental Policy Act (NEPA), as applied in the Nuclear Waste Policy Act. 42 U.S.C. § 4321 et seq. (2006) (setting out the requirements of NEPA); 42 U.S.C. § 10247 (2006) (applying NEPA to the NRC process). Because transportation by truck has the potential for significant and substantial effects on the human environment, DOE must provide an analysis of the proposed action and means to mitigate harmful impacts in the EIS. See 40 C.F.R. § 1502.1 (2008). In addition, the Nuclear Regulatory Commission may adopt the EIS only if the document is complete, meaning significant and substantial new considerations do not render the EIS inadequate. 10 C.F.R. §51.109(c)(2) (2008). Because the Final SEIS, as submitted by DOE, is inadequate with respect to the transportation of SNF and HLW by truck, NRC erred in adopting the Final SEIS.

4NC Petition at 4. In 4NC-NEPA-1, the Counties argue that DOE must provide an analysis of the impacts resulting from possible overweight truck shipments through the Counties and the means to mitigate any harmful impacts. *Id.* The contention focuses primarily on impacts from increased traffic such as wear on roadways and congestion. *See id*. at 7.

Staff Response

Because the contention does not comply with 10 C.F.R. § 2.326(a)(3), does not demonstrate a material dispute with respect to DOE's NEPA analysis or the Staff's ADR, is not adequately supported by facts or expert opinion, and has not established a genuine dispute on the proposed action, 4NC-NEPA-1 is not admissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to

adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, the Counties have not explicitly addressed any of the motion to reopen criteria in 10 C.F.R. § 2.326. For these reasons, this contention is inadmissible. Nor can it be implied from this contention itself that the issue the Counties raise is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v.*

Weinberger, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

In 4NC-NEPA-1, the Counties argue that DOE's NEPA analysis is inadequate because it does not consider the impacts of large numbers of truck shipments through the Counties. 4NC Petition at 4. This assertion is based on the premise that the number of truck shipments through the Counties will be higher than that previously analyzed by DOE because the rail line identified as the preferred alternative will be significantly delayed or never built. However, as discussed below, the Counties offer no support for this assertion. Assertions and speculation are not sufficient to meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For this reason, 4NC-NEPA-1 is inadmissible. In addition, as discussed further below, the contention does not meet all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

4NC-NEPA-1 does not demonstrate that the issue raised in the contention is material to the findings the NRC must make as required by 10 C.F.R. § 2.309(f)(1)(iv), and, therefore is inadmissible. The Counties argue that because NEPA requires DOE to prepare an EIS considering the impacts of the proposed action as well as means to mitigate adverse environmental impacts, DOE must consider environmental impacts and appropriate mitigation measures connected to a theoretical plan to sent large numbers waste shipments via overweight trucks through the Counties. 4NC Petition at 5 (citing 42 U.S.C. § 4331 et seq. and 10 C.F.R. § 1502.14). However, the requirement to consider potential

environmental impacts is not absolute. Rather, the requirement is tempered by a "rule of reason." *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992); *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative'" impacts. *LES*, LBP-06-08, 63 NRC at 258.

Here, the Counties' contention is predicated on assumption without any support. As stated in the FSEIS, the mostly rail alternative is the preferred alternative included in the proposed action. Nevertheless, the contention states repeatedly that it is likely that DOE will have to ship large amounts of waste via overweight truck through the Counties, either in an effort to avoid shipping waste through Las Vegas, or because the rail line identified as the preferred alternative will be significantly delayed or never built. However, as discussed below, the Counties have not provided any support for its assertion that either of these assumptions is likely. Thus, 4NC-NEPA-1 does not demonstrate that waste transportation via overweight trucks through the Counties is a reasonably foreseeable impact that must be analyzed under NEPA, and, therefore, does not demonstrate that the issue raised is material to the findings the NRC must make. 4NC-NEPA-1 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must include a concise statement of the alleged facts or expert opinion supporting the position taken in the contention. 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

As discussed above, the Counties predicate their contention on two assumptions that allegedly will result in a large number of overweight truck shipments through the Counties: that the rail line will not be constructed or that DOE will send shipments through the Counties to avoid shipping high-level waste through Las Vegas. But the Counties provide no support for these assumptions. With respect to the assumption that the rail line may not be constructed, the Counties state that, "DOE has absolutely no way of knowing or depending on the timely completion of a rail line." 4NC Petition at 10. Although the contention is supported by affidavits from Engelbrecht von Tiesenhausen, Rex Massey, and Roger Patton that describe the potential impacts of truck transportation, neither the contention nor the affidavits adequately explain the basis for the assertion that such truck transportation is likely. Nor does the contention or the affidavits why it is unlikely that the rail line will be constructed, other than a basic uncertainty over the availability of rail resources over time. *Id.* With respect to the assumption that DOE will avoid shipping waste through Las Vegas, 4NC-NEPA-1 cites historic agreements between DOE and Las Vegas regarding shipment of low level waste, *id.*, but does not provide any evidence that a future agreement regarding high-level waste is forthcoming. The Counties have failed to supply the required factual support or expert opinion for the two assumptions underpinning 4NC-NEPA-1. Thus, the contention does not comply with 10 C.F.R. § 2.309(f)(1)(v) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must provide sufficient information to show that a genuine dispute exists on a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). 4NC-NEPA-1 does not address this requirement, and, therefore, is inadmissible. Moreover, because the contention, as discussed above, does not demonstrate that the issues raised in the contention require further analysis under NEPA, it cannot be said that the contention raises a genuine dispute with either DOE or the Staff on either the sufficiency of the FSEIS or the EISADR.

4NC-NEPA-2 – INSUFFICIENT ANALYSIS IN THE ENVIRONMENTAL IMPACT STATEMENT OF SIGNIFICANT AND SUBSTANTIAL NEW CONSIDERATIONS RELATED TO EMERGENCY RESPONSE CAPACITY WITHIN THEIR FOUR NEVADA COUNTIES

> Applicant failed to adequately address significant and substantial considerations in the Final Supplemental Environmental Impact Statement (Final SEIS) regarding assessing local emergency response capacity related to the transportation of Spent Nuclear Fuel (SNF) and High Level Radioactive Waste (HLW), by truck, through the Nevada Counties of Churchill, Esmeralda, Lander and Mineral, as required by the National Environmental Policy Act (NEPA), as applied in the Nuclear Waste Policy Act (NWPA). 42 U.S.C. §4321 et seq. (2006) (setting out the requirements of NEPA); 42 U.S.C. §10247 (2006) (applying NEPA to the NRC process). A transportation incident involving SNF/HLW has the potential for significant and substantial effects on the human environment; DOE must provide an analysis of this proposed action and means to mitigate harmful impacts to the human environment in the EIS. *See* 40 C.F.R. § 1502.1 (2008). In addition, the Nuclear Regulatory Commission may adopt the EIS only if the document is complete and in compliance with NEPA and implementing regulations. 10 C.F.R. §51.109(a)(l)(2008). Because the Final SEIS, as submitted by DOE, is not complete with respect to the analysis of emergency response training, NRC erred in adopting these sections of the Final SEIS.

4NC Petition at 14. The Four Nevada Counties contend that the analysis of potential actions and mitigation measures in the FSEIS is insufficient because DOE has not adequately assessed local emergency response capacity related to transportation of wastes by truck through the Counties. *Id.* 14-15. The Four Counties state that DOE must address "full emergency response capability, including acquisition of equipment, hiring of and providing for the ongoing personnel and underwriting related costs concerning truck transportation" in order to adequately address mitigation measures. *See id.* at 15. The Four Counties argue that DOE's discussion regarding emergency planning fails to provide concrete details and analysis required by NEPA, and therefore the NRC cannot adopt the FSEIS. *Id.* at 22.

Staff Response

The Staff opposes admission of 4NC-NEPA-2 because, as set forth below, it does not meet the heightened contention admissibility standards in 10 C.F.R. §§ 2.326 and 51.109(a)(2). In addition, the contention does not meet the contention admissibility criteria of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private*

Fuel Storage, LLC (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape.'" *Id*. (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, the Four Counties have not explicitly addressed the motion to reopen criteria in 10 C.F.R. § 2.326. Further, a review of the Four Counties' contention indicates that they have not met these criteria. The Four Counties allege that the FSEIS fails to adequately address a significant and substantial consideration, i.e. local emergency response capacity related to the transportation of waste by truck through the Counties. 4NC Petition at 14. As discussed below, the Four Counties speculate, without supporting facts, "that there will be a concentration of overweight truck shipments" through the counties and that this will have a "coinciding burden on emergency response resources." *Id.* at 15 (citing 4NC Petition, Attachment 1, Affidavit of Engelbrecht von Tiesenhausen; 4NC Petition, Attachment 2, Affidavit of Rex J. Massey). Although this statement is supported by two affidavits, the affidavits simply speculate that DOE will have to ship large amounts of waste via overweight truck through the Counties, either in an effort to avoid shipping waste through Las Vegas or because the rail line identified as the preferred alternative may not be built, which in turn will have an exponential impact on emergency response capacity. *See* Tiesenhausen Affidavit at ¶ 7; Massey Affidavit at ¶ 7, 8. These assertions do not indicate that this contention raises

a significant safety or environmental issue nor do they demonstrate a materially different result would be likely if more consideration were given to impacts on the Four Counties' emergency response capabilities. *See* 10 C.F.R. § 2.326(a)(2) & (3). Similarly, the Four Counties discuss, with references to affidavits, that the majority of waste will be shipped on rural county roads, that the Counties do not have sufficient emergency response resources to deal with potential accidents, and that it will be costly for the Counties to acquire adequate resources. 4NC Petition at 18-20. Again, this information does not demonstrate that a materially different result would be or would have been likely had more detailed assessments of local emergency response capacities been included in the FSEIS. *See* 10 C.F.R. § 2.326(a)(3). The Four Counties have not shown that that if more information regarding emergency response and training had been considered, that this would "paint a 'seriously different picture of the environmental landscape.'" *See PFS,* CLI-06-3, 63 NRC at 28. Because the Four Counties have not shown that 4NC-NEPA-2 "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary," it has failed to meet the heighted admissibility requirements. *See id*. For this reason, 4NC-NEPA-2 is inadmissible. In addition, as discussed further below, the contention does not meet all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. These documents are intended

to satisfy the requirement that DOE take a “hard look” at all reasonably foreseeable environmental impacts. *See Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 87-88 (1998). Supplementation to correct an inadequate analysis is required only where any additional information would "paint a '*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28.

Here, the Four Counties contend that DOE’s FSEIS is inadequate because it does not include “significant and substantial considerations regarding emergency responders . . .” 4NC Petition at 22. The Four Counties argue that DOE “failed to provide a comprehensive analysis of mitigation in the form of emergency response availability in the FSEIS as required of the agency by NEPA and the NWPA.” *Id.* at 16. Section 180(f) of the NWPA requires that DOE provide technical assistance and funding to train state, tribal, and local governments. *See* Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,746 (Nov. 2, 2001). “[U]nder NEPA, the potential for (environmental) impacts due to transportation, including accidents, is the responsibility of DOE to assess and mitigate.” *Id.* NEPA does not, however, require that proposed mitigation measures for potential environmental impacts “be laid out to the finest detail,” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989), or that it “‘be legally enforceable, funded or even in final form” and it is “not improper for an EIS to describe ‘mitigating measures in general terms and rel[y] on general processes . . ." *See Hydro Resources, Inc.* (P.O. Box 777, Crownpoint, NM 87313), CLI-06-29, 64 NRC 417, 426-427 (2006) (citing *Robertson,* 490 US at 352) (internal citations omitted).

The Four Counties acknowledge that NEPA does not require a complete mitigation plan. *See* 4NC Petition at 17 (citing *Robertson,* 490 US at 352). Nonetheless, the Four Counties argue that NEPA requires “concrete analysis and reasonably complete mitigation plans” and that DOE’s analysis of emergency planning is insufficient because it does not describe how funding will be distributed, if there will be sufficient funding, how the needs of each County

will be assessed, or that communication interoperability will be provided. *See* 4NC Petition at 17.

DOE's FSEIS discusses emergency roles and responsibilities and coordination with the federal government in the event of a transportation emergency. *See* FSEIS Appendix H at H-16 to H-18. In addition, Appendix H, Section H-6 states that in accordance with NWPA Section 180(c), DOE will evaluate preparedness and provide technical assistance and funding of the training to ensure that state, tribal and local officials are prepared for shipments of spent nuclear fuel and high-level radioactive waste to the repository. *See* FSEIS at H-18 to H-19; *see also id.* at H-34 to H-35. DOE states that this funding is intended to supplement existing training programs for safe routine transportation and emergency preparedness. *See id.* at H-19. DOE also states that it anticipates making two types of grants to states and tribes, subject to the availability of appropriated funds, approximately three and four years prior to the first shipment and that states and tribes are expected to coordinate with local public safety officials. *See id.* As discussed above, NEPA does not require mitigation plans to be complete, detailed, or funded; general terms are sufficient. *See HRI,* CLI-06-29, 64 NRC at 426-27. Therefore, the Four Counties have failed to show additional information regarding mitigation is required.

In addition, the Four Counties have not shown that if more detailed plans were considered, this would "paint a '*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28. Therefore, the Four Counties have not shown that consideration of detailed, concrete emergency planning information for the Four Counties is material to the findings the NRC must make as required by 10 C.F.R. § 2.309(f)(1)(iv). Consequently, 4NC-NEPA-2 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must include a concise statement of the alleged facts or expert opinion supporting the position taken in the contention. 10 C.F.R. § 2.309(f)(1)(v). If parties rely on

expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

Here, the Four Counties state that "there will likely be a concentration of overweight truck shipments through the Four Counties and a coinciding burden on emergency response resources." 4NC Petition at 15 (citing 4NC Petition, Attachment 1, Affidavit of Engelbrecht von Tiesenhausen at ¶ 7; Attachment 2, Affidavit of Rex J. Massey at ¶ 7, 8). The supporting affidavits are premised on unsupported statements and speculation. The Affidavit of Engelbrecht von Tiesenhausen states that the number of truck shipments may be greater than projected by DOE because the rail line may not be constructed. *See* Tiesenhausen Affidavit at ¶ 7. Neither the contention text nor the affidavit explains why it is unlikely that the rail line will be constructed, other than a basic uncertainty over the availability of rail resources. *See id.* The Affidavit of Rex J. Massey states that based on the assumptions regarding increased truck traffic in the Affidavit of Engelbrecht von Tiesenhausen, there will be an exponential impact on emergency response capacity. *Id.* at ¶ 8. No additional information is provided to support this statement regarding exponential impact on emergency response capacity. *See id.* Absent a reasoned basis or explanation for these conclusions, these assertions cannot provide support for this contention. *See USEC,* CLI-06-10, 63 NRC at 472 (internal citation omitted).

Therefore, for the reasons set forth above, 4NC-NEPA-2 should be rejected.

4NC-NEPA-3 - INSUFFICIENT ANALYSIS IN ENVIRONMENTAL IMPACT STATEMENT OF SIGNIFICANT & SUBSTANTIAL NEW CONSIDERATIONS RELATED TO SELECTION OF SNF TRANSPORTATION CONTAINER, WHICH RENDERS ENVIRONMENTAL IMPACT STATEMENT INADEQUATE

> Applicant failed to effectively address significant and substantial new considerations in the Final Supplemental Environmental Impact Statement (Final SEIS) related to the differing impacts of alternative types of transportation canisters used upon worker safety estimates at the Yucca Mountain Repository as required by the National Environmental Policy Act (NEPA), as applied in the Nuclear Waste Policy Act. 42 U.S.C. § 4321 et seq. (2006) (setting out the requirements of NEPA); 42 U.S.C. §10247 (2006) (applying NEPA to the NRC process). Because the type of shipping canisters selected by commercial generators affects whether fuel must be repackaged before emplacement and repackaging can increase exposure to radiation, the varying effects of the alternative containers on the human environment must be considered. DOE must provide an analysis of this variable and means to mitigate harmful impacts to the human environment in the EIS. See 40 C.F.R. § 1502.1 (2008). Furthermore, the Nuclear Regulatory commission [sic] may adopt the EIS only if the document is complete and in compliance with NEPA and its implementing regulations. 10 C.F.R. § 51.1 09(a)(1) (2008). Because the Final SEIS, as submitted by DOE, is not complete with respect to the impacts of differing Spent Nuclear Fuel (SNF) canister utilization estimates and correlating impacts on worker safety, NRC erred in adopting these sections of the Final SEIS.

4NC Petition at 23. In this contention 4NC asserts that DOE failed to provide a sufficiently complete analysis of the risks to Yucca Mountain Repository worker health and safety resulting from DOE's proposal to transport SNF in transportation, aging, and disposal TAD canisters and dual-purpose canisters (DPCs). *See* 4NC Petition at 23. 4NC alleges that the number of DPCs that will be sent to Yucca Mountain with SNF that will require on-site unpacking and reloading into TADs was underestimated in the FSEIS. *See Id*.

Staff Response

Because the contention does not comply with 10 C.F.R. § 2.326(a)(3), does not demonstrate a material dispute with respect to DOE's NEPA analysis, is not adequately

supported by facts or expert opinion, and has not established a genuine dispute on the proposed action, 4NC-NEPA-3 is not admissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63029, 63031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, the Counties have not explicitly addressed any of the motion to reopen criteria in 10 C.F.R. § 2.326. For this reason, this contention is inadmissible. Nor can it be implied from this contention itself that the issue the Counties raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen

standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. 63 NRC at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

In 4NC-NEPA-3, the Counties argue that DOE's NEPA analysis underestimates the number of DPCs likely to be shipped to the repository that will require on-site unpacking and reloading into TADs, thus leading to potential harmful impacts to the “human environment” of the workers. 4NC Petition at 23. This assertion is based on the premise that the number of DPCs shipped to the repository will be higher than that previously analyzed by DOE, assuming that generators will not unload and repack many of the full DPCs that they will possess by the time TADs become available. *See* 4NC Petition at 25. In the attached affidavit from Engelbrecht von Tiesenhausen and in the body of the contention, the Counties cite to statements that NEI representative Rod McCullum made at the WIEB meeting on April 23, 2008. *See* 4NC Petition, Attachment 16, Affidavit of Engelbrecht von Tiesenhausen at 3; 4NC Petition at 27. From Mr. McCullum’s statements, the Counties conclude that “between present day and 2017, more than 25% of the SNF will already be loaded into DPCs.” 4NC Petition at 27. The Counties do not provide support or explanation for their conclusion that

more than 25% of SNF will be packaged in DPCs. The statements of Rod McCullum provide no basis for this conclusion. More importantly, however, the Counties do not present this information in the form of an affidavit specifically addressing the criteria of 2.326(a)(2). *See* 10 C.F.R. § 2.326(b). Moreover, the affidavit that the Counties do append to 4NC-NEPA-03 also fails to "separately address, with a specific explanation for why. . .the criteria of paragraph (a) of this section have been satisfied" specifically including the "factual/technical bases for the movant's claim." *Id*. Accordingly, the failure to comply with the elevated evidentiary standards, coupled with the reliance on unsupported assertions, causes the Counties to fall short of meeting the heavy burden required to demonstrate that a supplement to the FSEIS is warranted. For this reason, 4NC-NEPA-3 is inadmissible. In addition, as discussed further below, the contention does not meet all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised therein "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

As discussed above, the Counties argue that DOE should include a more detailed analysis of the effect that the potential increased transportation of SNF in DPCs will have on the human environment, particularly on Yucca Mountain repository workers because such information is necessary for DOE to comply with its NEPA obligations. *See* 4NC Petition at 23. However, "it is well settled that the court will not 'flyspeck' an agency's environmental

analysis, looking for any deficiency no matter how minor." *Nevada v. NEI*, 457 F.3d 78, 93 (D.C. Cir. 2005), *citing Fuel Safe Wash. v. FERC,* 389 F.3d 1313, 1323 (10th Cir.2004). Nor, as in the present instance, where a federal agency would be asked to supplement an environmental impact statement, need the agency take action every time an additional consideration is raised. Rather, supplementation is required where any additional information would "paint a '*seriously* different picture of the environmental landscape.'" 63 NRC at 28; see also *Hydro Resources, Inc*. (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999), citing *Sierra Club v. Froehlke,* 816 F.2d 205, 210 (5th Cir. 1987).

Here, the Counties offer only speculative statements to demonstrate the likelihood that the increased level of DPC shipments will occur. The Counties provide no support to demonstrate that the DOE analysis, with the assumptions as stated in its 90% and 75% scenarios, has not bounded the likely impacts to worker health and safety resulting from different canisterization scenarios. While the Counties purport to rely on Rod McCullum's statements in Attachment 15 for the proposition that more than 25% of SNF will be shipped in DPCs, there is nothing in the presentation that provides a basis for this conclusion. Thus, the Counties have not shown that inclusion of further detail would materially affect the FSEIS to such an extent that the supplemented document would "paint a 'seriously different picture of the environmental landscape." *Id*. For this reason, the contention does not demonstrate that the issue raised is material to the findings the NRC must make. Accordingly, 4NC-NEPA-3 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must include a concise statement of the alleged facts or expert opinion supporting the position taken in the contention. 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998).

As noted above, the references that the Counties cite to support the proposition that an increase in the number of DPCs do not provide anything other than a speculative alternative to DOE's canister transportation plans as laid out in the FSEIS. The reference to NEI's Rod McCullum, who states that "utilities do not intend to reload to TADs for shipment" is not demonstrated to be any more than a speculative, bare assertion. 4NC Petition at 27. Moreover, Nevada fails to address the comment to DOE's FSEIS submitted by NEI representative Rodney McCullum which states that the "objective of receiving no less than 75 percent, and perhaps up to 90 percent of the commercial used nuclear fuel in TADs is achievable." FSEIS Volume III Comment 1.6.3.2 (1744) at CR-291. The Counties also provide no explanation or analysis that the DOE analysis, with the assumptions as stated, has not bounded the likely impacts to worker health and safety resulting from different canisterization scenarios. Thus, the contention does not comply with 10 C.F.R. § 2.309(f)(1)(v) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must provide sufficient information to show that a genuine dispute exists on a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). 4NC-NEPA-3 does not address this requirement, and, therefore, is inadmissible. Moreover, because the contention, as

discussed above, does not demonstrate that the issues raised in the contention require further analysis under NEPA, it cannot be said that the contention raises a genuine dispute with either DOE or the Staff or the sufficiency of the FSEIS. For the reasons stated above, 4NC-NEPA-3 is not admissible.

CAL-NEPA-1 - DOE'S NEPA DOCUMENTS IMPERMISSIBLY SEGMENT THE PROJECT BY DEFERRING ANALYSIS OF THE ENVIRONMENTAL IMPACTS OF TRANSPORTATION OF SPENT NUCLEAR FUEL AND HIGH LEVEL WASTE THROUGH CALIFORNIA TO YUCCA MOUNTAIN

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that these NEPA documents segment the Yucca Mountain repository project by failing to analyze and disclose the possible and reasonably foreseeable significant route-specific environmental impacts on California – as DOE's NEPA documents purport to do for Nevada -- of transport of spent nuclear fuel and high-level radioactive waste through California, do not analyze or disclose the reasonably foreseeable non-radiological environmental impacts of such transport, and do not compare the alternative routes through California that would need to be used to connect to the Mina or Caliente rail routes in Nevada.

CAL Petition at 19. CAL-NEPA-1 alleges that DOE has impermissibly segmented its consideration of transportation impacts, and, as a result, DOE's NEPA documents fail to adequately analyze specific impacts in California. CAL Petition at 19.

Staff Response

Although not specifically identified as a legal contention, this contention raises primarily legal rather than factual issues. As discussed below, this contention does not meet the requirements of 10 C.F.R. § 2.326. In addition, the contention does not comply with 10 C.F.R. § 2.309(f)(1) because it does not demonstrate that the issue raised is material to the findings the NRC must make and is not supported by adequate facts or expert opinion. For these reasons, CAL-NEPA-1 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to

adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id*. However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or

demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*. Here, California makes a series of assertions regarding the sufficiency of DOE's NEPA analysis. CAL Petition at 21-22. However, California does not explain the basis of these assertions. CAL-NEPA-1 is associated with an affidavit from Fred Dilger, Ph.D., but as discussed further below, Dr. Dilger's affidavit is not sufficient. In addition, neither his affidavit nor the contention explain the basis for his opinions. Without further

technical details and explanation, the information submitted by California is not enough to support an assertion that the issue raised in CAL-NEPA-1 is significant or, if true, would be likely to lead to a materially different result with respect to DOE's NEPA analysis.

Moreover, an issue very similar to the one that California raises has already been considered by the Court of Appeals for the D.C. Circuit. *Nevada v. DOE*, 457 F.3d 78 (D.C. Cir. 2006). The court found that DOE's approach to considering the environmental impacts of rail corridor alignment, first completing a programmatic EIS followed by a rail corridor selection EIS and finally a rail corridor alignment EIS, was "well within [DOE's] discretion in following the tiered approach regarding rail corridor selection and alignment" as permitted pursuant to Council on Environmental Quality regulations at 40 C.F.R. § 1508.28. *Id*. at 92. Completion of a national program like the repository "involves many separate sub-projects and will take many years;" tiering the analysis recognizes this reality. *Id*. California does not address why, in light of the D.C. Circuit's decision, it is inappropriate for DOE to consider representative rail routes as part of the programmatic 2002 FEIS or FSEIS, while considering more specific impacts from particular routes at a later date when concrete information about actual routes is available. Nor does California put forth any new information since the court's decision in 2006 that would "demonstrate that a materially different result would be or would have been likely" had it been considered. Thus, the Contention does not comply with the motion to reopen standard as required by 10 C.F.R. §§ 2.326 and 51.109(a)(2).

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181

(1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-1 appears to be associated with an affidavit from Fred Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so

the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Dr. Dilger's *curriculum vitae* is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-1 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-1 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998).

To specifically address 10 C.F.R. § 2.309(f)(1)(iv), California argues that DOE's environmental documents are inadequate because "they fail to fully identify, analyze, and disclose the potential significant route-specific, non-radiological, and route-comparative

environmental impacts of transportation of radioactive materials through California," and because DOE has not selected or engaged in final planning for specific transportation routes and has not made a commitment to perform NEPA analyses when it does. CAL Petition at 20-21. However, California does not explain why these issues are material to the finding the NRC must make to issue a construction authorization. California fails to show how this alleged inadequacy in DOE's NEPA documents would result in a significant difference in the NEPA analysis. Further, in the contention, California raises other issues: (1) DOE has segmented its NEPA analysis by deferring identification and analysis of actual transportation routes through California; (2) DOE's NEPA documents omit analysis of route-specific environmental impacts in California because the documents discuss transportation impacts at only a general, programmatic level; (3) DOE has not analyzed non-radiological California-specific environmental impacts; (4) DOE does not compare routes through California connecting to the Mina or Caliente rail corridors; and (5) DOE does not analyze the choice of transport modes and routes from Humboldt Bay and Diablo Canyon. CAL Petition at 21-22. However, California provides no explanation as to why any of these issues render DOE's NEPA analysis inadequate. Without a demonstration that the NEPA analysis is inadequate, Nevada has not demonstrated that the issue raised in the contention would have a material effect on the NRC's finding under 10 C.F.R. § 63.31(c).

Moreover, with respect to the issue of segmentation, which, based on the title of the contention appears to be the main issue of the contention, California has not demonstrated that DOE's approach of tiering from a more programmatic to more project specific analysis is inappropriate. "Tiering" an environmental analysis is acceptable under NEPA. 40 C.F.R. §§ 1502.20 and 1508.28. Tiering is appropriate when the analysis follows from "a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis" as well as "when it helps the lead agency to focus on the issues which are ripe for decision and exclude from

consideration issues already decided or not yet ripe." *Id.* Because definite information about actual rail routes that will be used to transport spent nuclear fuel from reactor sites to the repository is not yet available, DOE completed a broad, programmatic analysis of national rail transportation using representative routes, with narrower analyses as more details become available. *See Nevada*, 457 F.3d at 91-92. California has provided no explanation as to why tiering in this instance was inappropriate and DOE's NEPA analysis is deficient. California does not demonstrate that the issue raised in CAL-NEPA-1 is material to the findings the NRC must make to authorize construction of the repository, and the contention, therefore, is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of this contention California makes a series of statements regarding DOE's NEPA analysis, discussed above with respect to materiality. There is no explanation of the source of these statements, nor is there any explanation of the significance of any of these statements. As discussed above, the contention is allegedly supported by an affidavit from Dr. Dilger, but this affidavit is not sufficient to meet the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2). Even if the affidavit were sufficient, neither it nor the contention explains

the basis for Dr. Dilger's opinions. California has not provided adequate support for CAL-NEPA-1, and the contention is inadmissible.

CAL-NEPA-2 - DOE'S NEPA DOCUMENTS IMPERMISSIBLY SEGMENT THE PROJECT AS TO ROUTE SELECTION AND ROUTE-SPECIFIC IMPACT ANALYSIS

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. Part 51, in that these NEPA documents segment and piecemeal the NEPA analysis of the Yucca Mountain project by postponing the identification and disclosure of reasonably foreseeable transportation routes within and through California until an unspecified time in the future, and do not analyze or disclose the possible and reasonably foreseeable significant route-specific impacts on the environment of California of the transportation of spent nuclear fuel or of high-level radioactive waste over these routes through California.

CAL Petition at 24. CAL-NEPA-2 alleges that the by basing its analysis of the impacts of rail transportation on representative rail routes rather than the actual routes that will be used to transport waste to the repository, DOE has impermissibly segmented its analysis of potential rail impacts. *Id.* at 24.

Staff Response

Although not specifically identified as a legal contention, this contention raises primarily legal rather than factual issues. As discussed below, this contention does not meet the requirements of 10 C.F.R. § 2.326. In addition, the contention does not comply with 10 C.F.R. § 2.309(f)(1) because it does not demonstrate that the issue raised is material to the findings the NRC must make and is not supported by adequate facts or expert opinion. For these reasons, CAL-NEPA-2 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10

C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id*. However, California has not offered any explanation as to why CAL-NEPA-2 or any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's

FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from the contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC at __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*. Here, California makes a series of assertions regarding the sufficiency of DOE's NEPA analysis and alleging that DOE has impermissibly segmented its NEPA analysis. CAL Petition at 26-27. However, California does not explain the basis of these assertions. CAL-NEPA-2 is associated with an affidavit from Fred Dilger, Ph.D., but as discussed further below, Dr. Dilger's affidavit is not sufficient. In addition, neither his affidavit

nor the contention explains the basis for his opinions. Without further technical details and explanation, the information submitted by California is not enough to support an assertion that the issue raised in CAL-NEPA-2 is significant or, if true, would be likely to lead to a materially different result with respect to DOE's NEPA analysis.

Moreover, an issue very similar to the one that California raises has already been considered by the Court of Appeals for the D.C. Circuit. *Nevada v. DOE*, 457 F.3d 78 (D.C. Cir. 2006). The court found that DOE's approach to considering the environmental impacts of rail corridor alignment, first completing a programmatic FEIS followed by a rail corridor selection EIS and finally a rail corridor alignment EIS, was "well within [DOE's] discretion in following the tiered approach regarding rail corridor selection and alignment" as permitted pursuant to Council on Environmental Quality regulations at 40 C.F.R. § 1508.28. *Id.* at 92. Completion of a national program like the repository "involves may separate sub-projects and will take many years;" tiering the analysis recognizes this reality. *Id.* at 92. California does not address why, in light of the D.C. Circuit's decision, it is inappropriate for DOE to consider representative rail routes as part of the programmatic FEIS or FSEIS, while considering more specific impacts from particular routes at a later date when concrete information about actual routes is available. Nor does California put forth any new information since the court's decision in 2006 that would "demonstrate that a materially different result would be or would have been likely" had it been considered. Thus, the Contention does not comply with the motion to reopen standard as required by 10 C.F.R. §§ 2.326 and 51.109(a)(2). In addition, California's challenge is not a "new consideration" pursuant to 10 C.F.R. § 51.109(c)(2). The D.C. Circuit's ruling that parties could raise challenges to the sufficiency of the DOE's NEPA before the NRC was premised on the assumption that such issues would not have already been raised on judicial review. However, this particular issue has already been reviewed by the D.C. Circuit, and, therefore, is not a new consideration appropriate for review in an NRC adjudicatory proceeding. For these reasons, CAL-NEPA-2 is inadmissible.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-2 appears to be associated with an affidavit from Fred Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the FEIS, the FSEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Dr. Dilger's curriculum vitae is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-2 meet the heightened admissibility requirements of 10 C.F.R. § 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-2 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against

environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998).

California argues that DOE's environmental documents are inadequate because

> they segment and piecemeal the project by postponing the identification and full analysis of the significant environmental impacts of transportation in and through California of radioactive materials to Yucca Mountain until a time that DOE predicts will be several years after the Licensing Proceeding begins, and probably after it concludes.

CAL Petition at 25. However, it appears instead that by moving from a programmatic to more project-specific EISs, DOE has "tiered" its environmental analysis, which is acceptable under NEPA. 40 C.F.R. §§ 1502.20 and 1508.28. Tiering is appropriate when the analysis follows from "a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis" as well as "when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe." *Id.* Because definite information about actual rail routes that will be used to transport spent nuclear fuel from reactor sites to the repository is not yet available, DOE completed a broad analysis of rail transportation using representative routes, with plans to complete narrower analyses as more details become available. *Nevada,* 457 F.3d at 91-92. California has provided no explanation as to why tiering in this instance was inappropriate and DOE's NEPA analysis is deficient. California does not demonstrate that the issue raised in CAL-NEPA-2 is material to the findings the NRC must make to authorize construction of the repository, and the contention, therefore, is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

Here, California provides evidence that DOE has not yet considered particular routes outside of Nevada. CAL Petition at 26. This fact is not in dispute. California, however, does not provide any support for the assertion that DOE must assess the impacts of particular routes at this time. As discussed above, the contention is allegedly supported by an affidavit from Dr. Dilger. However, neither the affidavit nor the contention explains the basis for Dr. Dilger's opinion that DOE must analyze actual transportation routes at this time. Moreover, California has provided no support for the assertion that the D.C. Circuit's determination that tiering the environmental analysis is appropriate. California has not provided adequate support for CAL-NEPA-2, and the contention is inadmissible.

CAL-NEPA-3 - DOE'S NEPA DOCUMENTS IMPERMISSIBLY FAIL TO ANALYZE AND DISCLOSE DIFFERENT ENVIRONMENTAL IMPACTS FROM THE MINA AND CALIENTE ROUTES

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that the NEPA documents do not analyze or disclose the possible and reasonably foreseeable significant impacts on the environment of California of the choice between rail transportation in Nevada of spent nuclear fuel and high-level radioactive waste using the Mina route, as opposed to the Caliente rail route.

CAL Petition at 28. CAL-NEPA-3 alleges that DOE's NEPA analysis is inadequate because it fails to consider the potential environmental impacts on California from the use of the Mina rail line, as opposed to the use of the Caliente rail line. *Id.*

Staff Response

As discussed further below, this contention does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include the required affidavit. In addition, the contention does not meet the requirements of 10 C.F.R. § 2.309(f)(1) because it does not demonstrate that the issue raised is material to the findings the NRC must make and because the contention does not contain sufficient factual or expert opinion support. For these reasons, CAL-NEPA-3 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criteria, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criteria, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why CAL-NEPA-3 or any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's

EIS or the Staff's adoption would result based on the information in the contention.

Nor can it be inferred from the contention that the issue California raises is significant and would have lead to a materially different result if it had been considered previously. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Although California argues that DOE should have considered impacts from the Mina rail corridor, California presents no evidence that the asserted deficiency is significant or that considering such impacts would have painted a seriously different picture from what DOE has presented. DOE has issued a Record of Decision (ROD) stating that it will construct a new rail line to the repository along the Caliente corridor. "Record of Decision and Floodplain

Statement of Findings—Nevada Rail Alignment for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV," 73 Fed. Reg. 60,247 (Oct. 10, 2008). Thus it does not appear that the Mina rail corridor will ever be used for shipments to the repository. California fails to explain how analyzing impacts along the Mina corridor would enhance DOE's NEPA analysis. The contention is associated with an affidavit from Fred Dilger, Ph.D. However, as discussed further below, this affidavit is deficient. Moreover, nothing in the contention or Dr. Dilger's affidavit explains the reasons or support for his opinion that DOE must include a more detailed analysis of barge transportation. Without further details and analysis, California has not met the "deliberately heavy" evidentiary burden encompassed by the motion to reopen criteria. *See Oyster Creek,* CLI-08-28, 68 NRC at __ (slip op. at 22). California has not met the burden of showing that the issue raised in CAL-NEPA-3 is significant and, if true, would lead to a materially different result, as required by 10 C.F.R. §§ 2.326 and 51.109(a)(2) and for that reason the contention is not admissible.

In addition, sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the

NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

CAL-NEPA-13 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Dilger Affidavit ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents

or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-3 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-3 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

An admissible contention must "demonstrate that the issue raised . . . is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1). Here, that finding is that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements, including the Repository SEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998). The requirement to examine environmental impacts is tempered by a "rule of reason." S*ee, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992); *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative'" impacts. *LES*, LBP-06-08, 63 NRC at 258.

California argues that DOE's "NEPA documents are inadequate and not practicable for adoption because they fail to fully identify, analyze, and disclose the potential significant

environmental impacts on California of the choice of rail routes for transportation of nuclear waste within Nevada." CAL Petition at 29. California offers no explanation for this assertion in the section of its petition that purports to address 10 C.F.R. § 2.309(f)(1)(iv), but does discuss elsewhere in the contention the differences between the Caliente and Mina routes and appears to allege that the use of the Mina route would lead to potentially greater impacts within California. *See* CAL Petition at 29-31. However, California does not explain why, after DOE published its ROD selecting the Caliente corridor, impacts from the construction and use of a track on the Mina corridor remain reasonably foreseeable and therefore would be required for DOE's NEPA analysis. *See* 73 Fed. Reg. 60,247 (Oct. 10, 2008). California has not demonstrated that the issue raised in CAL-NEPA-3, impacts from the construction and use of a rail line in the Mina corridor, is material with regard to the finding the NRC must make to issue a construction authorization for the repository. The contention does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of CAL-NEPA-3, California presents evidence that impacts in California would

be greater if the Mina corridor were constructed and used to transport waste within Nevada than if the Caliente corridor were constructed and used to transport waste within Nevada. CAL Petition at 29-31. For example, California notes that trains connecting with the Caliente corridor would travel through the Imperial Valley, the Coachella Valley, San Bernardino, and the Mojave Desert, while trains connecting with the Mina corridor would travel through the more populous and agriculturally important Central Valley and the Sierra Nevada range. *Id.* at 30-31. California also argues that it would be difficult to retrieve a dropped cask in the Sierra Nevada, and that such an accident could have an impact on traffic through the range. *Id.* at 31. California also cites the fact that DOE, in its most recent Project Decision Schedule, has not set a firm date for detailed planning of transportation routes for waste outside of Nevada. *Id.* However, California never explains what relation any of this information has to the assertion that DOE must include an analysis of impacts from the Mina corridor even though DOE has published a ROD selecting the Caliente corridor. The contention is also associated with an affidavit from Fred Dilger. As discussed above, the affidavit is deficient. Regardless, to the extent the contention is based on Dr. Dilger's expert opinion, neither the contention nor the affidavit explains the basis for Dr. Dilger's opinions. California has not provided adequate facts or expert opinion to support CAL-NEPA-3 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

CAL-NEPA-4 - DOE'S NEPA DOCUMENTS FAIL TO ADEQUATELY DISCUSS OR ANALYZE MITIGATION IN CALIFORNIA

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that the NEPA documents' discussion of mitigation is internally inconsistent and inadequate: they analyzes, discusses, and provides mechanisms for mitigating the hazards of spent nuclear fuel shipments and high-level radioactive waste shipments through Nevada, but fail to do so for the same types of hazards from shipments in and through California.

CAL Petition at 33. CAL-NEPA-4 alleges that DOE's NEPA analysis is inadequate because it does not consider California-specific mitigation measures for spent nuclear fuel shipments and high-level waste shipments. CAL Petition at 33.

Staff Response

As discussed further below, the contention does not meet the requirements of 10 C.F.R. § 2.326 and therefore is inadmissible. In addition, the contention does not raise a genuine dispute on a material issue of fact or law, as required by 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at

Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id*. However, California has not offered any explanation as to why CAL-NEPA-4 or any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention. Further, it cannot be implied from the contention itself that California has raised a significant safety or environmental issue that is likely to result in a materially different outcome.

In the context of an EIS, the third criterion of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC*

(Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). Although California argues that DOE should have discussed mitigation measures for the transportation of waste within California specifically, CAL Petition at 33, the contention does not explain how such a discussion would have painted a "seriously different picture of the environmental landscape" from the picture painted by DOE's discussion of national mitigation measures. *See* FSEIS at 9-12 to 9-13.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc. (*American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on

personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-4 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 FEIS, the FSEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention mention any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-4 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-4 does not comply with 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a “genuine dispute exists with the applicant/licensee on a material issue of law or fact”, identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner’s position. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "'bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" Millstone, CLI-01-24, 54 NRC at 358 (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), review declined, CLI-94-2, 39 NRC 91 (1994).California argues that DOE ought to have considered mitigation of hazards related to shipment of spent fuel and high-level radioactive waste through California. CAL Petition at 33. However, DOE does discuss mitigation measures for national transportation. FSEIS Chapter 9 at 9-12 through 9-13. California does not address why DOE's discussion of national mitigation is inadequate to address mitigation in California. Without further discussion of the mitigation analysis that is included in the FSEIS, California has not shown that there is a genuine dispute on a material issue of law or fact. CAL-NEPA-4 does not comply with 10 C.F.R. § 2.309(f)(1)(vi) and therefore is inadmissible.

CAL-NEPA-5 - DOE'S NEPA DOCUMENTS ARE BASED ON AN INCOMPLETE AND INACCURATE PROJECT DESCRIPTION, SINCE A DOUBLING OR TRIPLING OF YUCCA MOUNTAIN'S CAPACITY IS REASONABLY FORESEEABLE DUE TO DOE'S REQUEST TO CONGRESS TO AUTHORIZE SUCH A CAPACITY INCREASE

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that they present an incomplete and inaccurate project description that describes Yucca Mountain as having only a capacity of 70,000 metric tons heavy metal being stored and/or disposed of at Yucca Mountain (e.g., Repository SEIS at S-7), with only that amount being transported (including transportation through California), while it is now reasonably foreseeable that Congress, at DOE's request and upon DOE's recommendation (DOE/RW-0595, LSN CEC000000613), may authorize the storage and/or disposal of up to four times that total, or even more; in the alternative, the NEPA documents impermissibly segment the project if DOE plans to issue a supplement to the NEPA documents addressing this reasonably foreseeable capacity increase, either during or after the completion of the Licensing Proceeding.

CAL Petition at 37. CAL-NEPA-5 alleges that DOE's NEPA documents are inadequate because they do not consider the environmental impacts resulting from doubling the capacity of the repository. *Id*.

Staff Response

As discussed further below, this contention does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include an affidavit as required. In addition, California has not demonstrated that the issue in this contention is material to the findings the NRC must make to issue a construction authorization for the repository and has not provided adequate support for the contention. 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-5 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R.

§ 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criteria, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criteria, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete

information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22).

Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

The text of the contention itself does not offer sufficient information to infer that California raises a significant safety or environmental issue because, as discussed further below, CAL-NEPA-5 is based purely on conjecture about future actions which California has not shown are likely to occur. California cites DOE's report to Congress that recommended that Congress remove the existing limit Yucca Mountain's capacity, CAL Petition at 37, but cites no evidence that Congress is likely to act on that report. The contention is associated with an affidavit from Fred Dilger, but, as discussed further below, Dr. Dilger's affidavit is deficient. Moreover, neither the affidavit nor the contention explains the reasoning behind the opinion that an increase in Yucca Mountain's capacity is likely. Without further details and analysis, the contention cannot meet the "deliberately heavy" evidentiary burden associated with reopening criteria. *See Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Therefore, CAL-NEPA-5 does not comply with the motion to reopen standards in 10 C.F.R. § 2.326 and is inadmissible.

Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. This affidavit is part of the required demonstration that this issue raised is significant and would lead to a materially different result. *See Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 13). The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity,"

indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-5 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so

the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions.

California has not attached the required affidavit, nor does CAL-NEPA-5 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-5 is inadmissible because it does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

An admissible contention must assert an issue of law or fact that is “material to the findings the NRC must make to support the action that is involved in the proceeding.” 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements, to the NRC in conjunction with its license application. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998).

Here, California claims that the FEIS is incomplete because it does not contain an analysis of the environmental consequences of doubling the legal waste capacity for the repository. Currently, the Nuclear Waste Policy Act of 1982, as amended, limits disposal capacity to 70,000 metric tons of heavy metal (MTHM), 42 U.S.C. § 10134(d) (2005), as does the Commission's regulations. 10 C.F.R. § 63.42(d). Accordingly, the present LA is for

a repository with a capacity of 70,000 MTHM, and the purpose and need statement in the FEIS reflects the legal capacity. Nevertheless, California claims that because DOE has submitted to Congress a report recommending that Congress remove the limit on the capacity of Yucca Mountain, disposal of a larger amount of waste is a reasonably foreseeable and therefore must be included in the EIS.

However, California has not shown that an increase in capacity at the repository is a reasonably foreseeable action requiring analysis in the EIS. Although DOE has recommended to Congress an increase in the legal capacity of the repository, California has offered no evidence that Congress will enact the necessary legislation increasing the capacity of the repository, or that, if such legislation in enacted, DOE will amend the LA accordingly. Under NEPA, "the mere 'contemplation' of certain action is not sufficient to require an impact statement." *Kleppe v. Sierra Club*, 427 U.S. 390, 404 (1976). Rather, "the moment at which an agency must have a final statement ready 'is the time at which it makes a recommendation or report on a *proposal* for federal action,'" bearing in mind that "the contemplation of a project and accompanying study thereof do not necessarily result in a proposal for a major federal action." *Id.* at 406 (citing *Aberdeen & Rockfish R.C. v. SCRAP*, 422 U.S. 289, 320 (1975)) (emphasis in original). Here, DOE merely contemplates increasing the repository's capacity, which does not trigger the requirement for a NEPA analysis. Thus, California's claim that such a requirement must be included in the present NEPA analysis is not material, and CAL-NEPA-5 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58

NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). Here, California has provided no evidence beyond DOE's recommendation to Congress that disposal of a quantity of spent fuel greater than 70,000 MTHM is likely or even possible. Although CAL-NEPA-5 relies on an affidavit from Dr. Dilger, as discussed above, Dr. Dilger's affidavit is deficient. However, even if the affidavit were sufficient, neither the affidavit nor the contention explains the basis for Dr. Dilger's opinion. The contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). For this reasons, CAL-NEPA-5 is inadmissible.

CAL-NEPA-7 - DOE'S NEPA DOCUMENTS FAIL TO ADEQUATELY DESCRIBE TRANSPORTATION IMPACTS ON EMERGENCY SERVICES IN SAN BERNARDINO COUNTY

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that the Repository SEIS, in Chapter 6 and in Appendices A and G, fails to analyze impacts associated with repository transportation on emergency management agencies, fire services, police departments, emergency medical services, hospitals, emergency communications centers, public health and public works in San Bernardino County, California.

CAL Petition at 42. California contends that the failure to assess impacts associated with repository transportation, including accidents, on San Bernardino County's emergency management agencies and services renders the FSEIS inadequate. *See id.* at 45. Specifically, California challenges FSEIS Chapter 6 and Appendices A and G. *Id.*

Staff Response

The Staff opposes admission of CAL-NEPA-7 because, as discussed below, CAL-NEPA-7 does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include the required affidavit. In addition, CAL-NEPA-7 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy*

(High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 10, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape.'" *Id*. (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the 10 C.F.R. § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period

established by the Notice of Hearing and, therefore, is timely in accordance with Section 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why this particular contention, CAL-NEPA-7, addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's EIS or the Staff's adoption would result based on the information in the contention.

Nor can it be inferred from the text of this contention that California has satisfied the heighted contention admissibility standards in Sections 2.326(a) and 51.109(a)(2). California states that "[a]n attack on DOE's NEPA documents based on substantial and significant new information is a new consideration", but California does not show that the impacts associated with repository transportation on San Bernardino emergency services is a "significant safety or environmental issue" in accordance with 10 C.F.R. § 2.326(a)(2). *See* CAL Petition at 43. While California asserts that San Bernardino County's emergency planning and response "will be heavily strained by the confluence of rail and highway routes in" Barstow and through San Bernardino and that any accident could have "enormous environmental consequences that could overwhelm the County's emergency agencies and first-responders," California does not provide support for these assertions. *See* CAL Petition at 44. California does not provide specific information regarding emergency response

capabilities and other than stating that these services may be strained or overwhelmed, it does not discuss the impacts of repository transportation on emergency services. *See id.* Nor does California discuss the “enormous environmental impacts” that could overwhelm San Bernardino County’s emergency services. *See id.* In addition, California has not shown that a materially different result would have been likely because California has not shown that had the impacts on San Bernardino County’s emergency services been analyzed, it would have "paint[ed] a '*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28. California has not provided sufficient information to show that CAL-NEPA-7 “raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Therefore, CAL-NEPA-7 does not meet the heightened contention admissibility requirements.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep’t of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that

would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

CAL-NEPA-7 appears to be associated with an affidavit from Fred Dilger. *See* CAL Petition, Attachment 1, Affidavit of Fred C. Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the FEIS, FSEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

Therefore, because California has not attached the required affidavit and does not meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2), CAL-NEPA-7 is inadmissible. In addition, CAL-NEPA-7 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must include a concise statement of the alleged facts or expert opinion supporting the position taken in the contention. 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

While California submitted the affidavit of Dr. Dilger, neither Dr. Dilger's affidavit nor the contention explains the basis for conclusions in CAL-NEPA-7, as required. *See USEC*, CLI-06-10, 63 NRC at 472. For example, California asserts that San Bernardino County's emergency planning and response "will be heavily strained by the confluence of rail and highway routes in" Barstow and through San Bernardino. CAL Petition at 44. Based on estimated populations in these areas, California concludes, that "any accident or terrorist incident could have enormous environmental consequences that could overwhelm the County's emergency agencies and first-responders" which DOE has not analyzed. *Id.* California does not however, provide any information regarding the San Bernardino's emergency response capabilities nor does it describe the type of accidents and consequences that may overwhelm these capabilities. *See id.* Rather, California speculates that "any accident or terrorist incident" could have enormous consequences and could overwhelm emergency responders. *See id.* These assertions, even if made by an expert

cannot support the admission of this contention absent support or a reasoned basis for these conclusions. *See Fansteel*, CLI-03-13, 58 NRC at 203; *USEC,* CLI-06-10, 63 NRC at 472. Consequently, CAL-NEPA-7 fails to satisfy 10 C.F.R. § 2.309(f)(1)(v).

For the reasons set forth above, CAL-NEPA-7 should be rejected.

CAL-NEPA-8 - DOE'S NEPA DOCUMENTS FAIL TO DESCRIBE THE MAXIMUM REASONABLY FORESEEABLE ACCIDENT

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. Part 51, in that the NEPA documents do not contain project-specific estimates of the costs of cleanup of the release of radioactive materials resulting from the maximum reasonably foreseeable accident during transport of spent nuclear fuel or high-level radioactive waste in and through California on its way to Yucca Mountain (calculations DOE's computerized models are capable of producing), but instead present cost estimates based on reports on and analyses of hypothetical releases, not directly related to or calculated for Yucca Mountain or the maximum reasonably foreseeable accident, making the NEPA documents' analysis inadequate and not practicable for adoption by NRC.

CAL Petition at 46. California alleges in CAL-NEPA-8 that DOE should have included site-specific estimates of the cost to clean up radioactive materials released during a truck or rail transportation accident. *Id*.

Staff Response

As discussed below, the contention does not adequately address the criteria in 10 C.F.R. § 2.326. In addition, California has not demonstrated that the issue raised in the contention is material to the findings the NRC must make to issue a construction authorization for the repository, nor has California provided adequate support for the contention. 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-8 is not admissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve

disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why CAL-NEPA-8 or any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from the contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC at __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*.

With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*. The contention alleges that DOE's NEPA analysis does not adequately describe the clean-up cost from the maximum reasonably foreseeable accident in California. CAL Petition at 47. In support of this assertion, California suggests two alternative analyses that it alleges would provide a more reasonable estimate of clean-up costs. CAL Petition at 48. However, the contention does not account for the very low probability of an accident occurring at any specific location

or of all the factors in California's suggested bounding analysis occurring at one time and location, and therefore, does not explain why either of its suggested analyses would provide a more reasonable estimate of clean-up costs than the estimate in the FSEIS. Attachment B, Affidavit of Earl P. Easton ¶ 5. In addition, the contention is also allegedly supported by an affidavit from Fred Dilger, Ph.D. As discussed further below, Dr. Dilger's affidavit is deficient. Moreover, neither the affidavit nor the contention explains the basis for Dr. Dilger's opinion. Without further technical details and explanation, the information submitted by California is not enough to support an assertion that the issue raised in CAL-NEPA-8 is significant or, if true, would be likely to lead to a materially different result with respect to DOE's NEPA analysis. Thus, the contention has not met the heightened admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2), and, for that reason, is inadmissible.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the

affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-8 appears to be associated with an affidavit from Fred Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-8 meet the

heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-8 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). Consequently, DOE has submitted environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. Although federal agencies are required to take a "hard look" at the potential environmental consequences of proposed actions in their NEPA analyses, *see, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992), the requirement is tempered by a "rule of reason." *Id*; *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative'" impacts. *LES*, LBP-06-08, 63 NRC at 258.

Here, California asserts without further explanation that DOE's NEPA analysis is inadequate and not practicable for adoption because it does not "analyze or provide an adequate appraisal of the cost of cleaning up the releases of radioactive material in California that DOE concedes may occur following the maximum reasonably foreseeable accident, despite DOE's technical ability to present such cleanup cost estimates." CAL Petition at 47. Elsewhere in the contention, California argues that DOE is capable of conducting a site-specific analysis of clean-up costs following transportation accidents and ought to carry out a bounding analysis accounting for the following alleged potential impacts:

(1) contamination of critical transportation system components; (2) contamination of urban or suburban areas that can only be decontaminated by razing and interdiction; (3) contamination of natural resources; or (4) rendering of public lands unavailable for use. *Id.* at 49. However, California does not explain why an analysis assuming that all four potential impacts occur simultaneously is reasonable rather than remote and speculative. Attachment B, Affidavit of Earl P. Easton at ¶¶ 4, 5. California has not demonstrated that the analysis it suggests is necessary for DOE to comply with its duty under NEPA to take a hard look at all reasonably foreseeable impacts. Therefore, California has not demonstrated that the issue raised in CAL-NEPA-8 is material to the finding the NRC must make, and the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). If a party relies on expert opinion, it must provide "something more than suspicions or bald assertions as the basis for any purported material factual disputes." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-99-35, 50 NRC 180, 194 (1999).

In support of CAL-NEPA-8, California states that DOE did not include the conclusions of two reports related to clean up costs in the FSEIS for the repository, and that DOE "also failed to consider the consequences of the Chernobyl accident, which provide information about cleanup costs, extent of contamination and the mechanics of cleanup itself." CAL Petition at 48. However, California did not explain why any of these considerations are necessary for an adequate consideration of reasonably foreseeable impacts. In addition,

California asserts that, due to the "route on which [the] shipments [of waste] will travel, it is possible that, should the maximum reasonably foreseeable accident occur in California or anywhere else, it will cause:" (1) contamination of critical transportation system components; (2) contamination of urban or suburban areas that can only be decontaminated by razing and interdiction; (3) contamination of natural resources; or (4) rendering of public lands unavailable for use. *Id.* at 49. There is no attribution for this assertion in the contention, although an attachment to an affidavit from Dr. Dilger references this contention. However, neither the contention nor Dr. Dilger's affidavit explains the basis for the assertion that such impacts are the possible result of a maximum reasonably foreseeable accident in California, nor is there any explanation as to why an analysis taking into account these potential impacts is necessary for an adequate consideration of reasonably foreseeable impacts. Because California has not explained the significance of its supporting references and opinions, the contention is not adequately supported as required by 10 C.F.R. § 2.309(f)(1)(v) and, therefore, is inadmissible.

CAL-NEPA-9 - DOE FAILED TO COMPLY WITH NEPA'S PROCEDURAL REQUIREMENTS FOR FULL PUBLIC REVIEW AND OPPORTUNITY FOR COMMENTS IN CALIFORNIA

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that DOE refused to hold public hearings in California on the Repository SEIS in areas of maximum population and potential environmental impacts, despite explicit and specific requests from California that it hold such public hearings.

CAL Petition at 50. CAL-NEPA-9 alleges that DOE's EISs are inadequate and not practicable for adoption because DOE did not hold public meetings in the areas of California requested by the state. CAL Petition at 50.

Staff Response

As discussed further below, this contention does not meet the motion to reopen standard of 10 C.F.R. § 2.326(a) and does not include a legally sufficient affidavit as required by §§ 2.326(b) and 51.109(a)(2). For these reasons CAL-NEPA-9 is inadmissible. In addition, the contention does not meet all of the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for

Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criteria, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id*. However, California has not offered any explanation as to why CAL-NEPA-9 or any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual

and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

California alleges that DOE did not comply with NEPA and the Staff should not have recommended that the FSEIS be adopted because DOE did not hold public meetings on the FEIS in the requested locations in California. CAL Petition at 50. In support of this assertion, California provides information regarding the population in areas of California through which transportation may occur. CAL Petition at 52. The contention is also associated with an affidavit from Fred Dilger, Ph.D., but, as discussed below, Dr. Dilger's affidavit is deficient. Based on this information, California argues that, pursuant to NEPA, DOE should have held public meetings in higher-population areas, rather than holding a public meeting close to the repository in Lone Pine, California and soliciting written comments other members of the

public. CAL Petition at 52. California does not explain why this alleged failure is significant. Nor does California explain how remedying this alleged failure by holding additional public meetings in California would "paint a '*seriously* different picture of the environmental landscape'" from the current FEIS, especially since DOE solicited written comments nationwide. CAL-NEPA-9 does not meet the heightened contention admissibility standards in 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is not admissible.

Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-9 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific

> contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Dr. Dilger's *curriculum vitae* is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-9 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-9 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1) because the contention does not demonstrate that the issue raised is material to the finding the NRC must make to issue a construction authorization for the repository and the contention is not adequately supported by fact or expert opinion.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, including the FEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

California alleges that DOE has not complied with NEPA because "DOE failed to provide a full and adequate opportunity for public comment through public hearings that were reasonably accessible and available to the affected public, including those members of the affected public for whom it is a great hardship to travel hundreds of miles to a remote location on the other side of the Sierra Nevada Mountains from where transportation impacts will be felt." CAL Petition at 51. Although California alleges that this action may not comply with

"NEPA, the CEQ regulations and the NRC NEPA regulations," *id.* at 50, California does not specify which provisions of NEPA, the CEQ regulation's or the NRC's NEPA implementing regulations are violated, and does not cite a single specific statutory or regulatory requirement with which DOE did not comply.

With respect to public meetings, CEQ regulations state that agencies shall "[h]old or sponsor public hearings or public meetings whenever appropriate or in accordance with statutory requirements applicable to the agency," but the regulations do not specify the number or location of public meetings. 40 C.F.R. § 1506.6. The NRC's regulations do not specifically address public meetings, but relevant NRC guidance states that, after publishing a draft environmental impact statement, the Staff "usually conducts a public meeting or meetings near the site of the proposed action to receive public comments." NUREG-1748, *Environmental Review Guidance for Licensing Actions Associated with NMSS Programs*, 4-17 (2003). In addition, NUREG-1748 encourages public scoping meetings, while noting that such meetings are not required by NRC or CEQ regulations. *Id.* at 4-7. DOE solicited written public comments and held a public meeting in Lone Pine, California, which the contention acknowledges. CAL Petition at 51. However, California does not explain why DOE's actions fail to meet applicable statutes and regulations. California also does not explain how any alleged failure will affect the required finding pursuant to 10 C.F.R. § 63.31(c). Thus, CAL-NEPA-9 does not demonstrate that the issue raised is material to the findings the NRC must make as required by 10 C.F.R. § 2.309(f)(1)(iv), and the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R.§ 2.309(f)(1)(v). A “mere ‘notice pleading’ is insufficient” and

the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of the contention, California makes a series of statements regarding the alleged impacts in areas of California other than the area around Lone Pine, California, where the public meeting was held. CAL Petition at 51-52. California states that Lone Pine is "a town of about 2,000 people with no commercial airport and which is a four hour drive from Los Angeles and six hours from Sacramento." *Id.* at 52. According to the contention, the California Energy Commission, as well as other unnamed parties, requested that at least one public meeting be held in Sacramento. *Id.*

California does not explain the significance of not holding meetings in Sacramento. Moreover, to the extent that this information consists of expert opinion, it is inadequate. Neither Dr. Dilger's affidavit nor the contention explains the basis for Dr. Dilger's opinions. California has not provided adequate support for CAL-NEPA-9 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

CAL-NEPA-10 - FAILURE TO ANALYZE IMPACTS OF INTERMODAL TRANSFERS

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that DOE failed to analyze the public health and safety and other environmental impacts from the handling of intermodal transportation containers.

CAL Petition at 54. CAL-NEPA-10 alleges that DOE's NEPA documents are deficient because DOE has not provided a detailed description and analysis of how DOE will use intermodal transportation to handle and ship spent nuclear fuel from California reactors to Yucca Mountain. CAL Petition at 54.

Staff Response

As discussed further below, the contention does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include the required affidavits. In addition, the contention does not meet all the requirements of 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-10 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen

standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape.'" *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). Here, California raises information regarding potential shipments of spent nuclear fuel form California reactors that will require intermodal transfers from one form of transportation, such as heavy haul truck or barge, to another, such as rail. CAL Petition at 55-56. However, as California acknowledges in the contention, DOE has recognized that such transfers may be necessary and has stated that the issue will be further evaluated when details regarding shipment are clearer. FSEIS Comment Response Document at CR-228 to CR-229. California has presented no new information that would demonstrate a significantly different picture of impacts from the current programmatic FSEIS. California has not met the heightened admissibility criteria of 10 C.F.R. §§ 2.326 and 51.109(a)(2).

Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. This affidavit is part of the required demonstration that this issue raised is significant and would lead to a materially different result. *See Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 13). The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her

opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-10 appears to be associated with an affidavit from Fred Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr.

Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Dr. Dilger's *curriculum vitae* is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions.

California has not attached the required affidavit, nor does CAL-NEPA-10 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-10 is inadmissible because it does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements to the NRC in conjunction with its license application, including the FSEIS. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998).

Supplementation to correct an inadequate analysis is required only where any additional information would "paint a 'seriously different picture of the environmental landscape.'" *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (quoting *Nat'l Comm. for the New River, Inc. v. Fed. Energy Reg. Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (internal citations omitted) (emphasis in original).

To address the materiality requirement, California argues that that the FSEIS is inadequate and not practicable for adoption because it does not "asses the public health and safety and other environmental impacts from the handling of intermodal transportation containers. Beyond vague claims that DOE's environmental analysis has been improperly segmented and that "NEPA requires an analysis of all reasonably foreseeable impacts," CAL Petition at 55 and 57, California does not state with specificity at any point in the contention any regulatory requirement that has not been met that would render DOE's environmental documents inadequate to support the findings the NRC must make pursuant to 10 C.F.R. § 63.31(c).

California also discusses the potential need for intermodal transfer facilities to transfer shipments from Humboldt Bay or Diablo Canyon from an initial mode of transportation, such as heavy haul truck or barge, to rail. CAL Petition at 56. However, California does not demonstrate that a discussion of these facilities is material to the adequacy of DOE's NEPA analysis. As California recognizes, DOE discusses programmatic impacts from loading spent fuel at reactor sites into casks and onto transport mechanisms, but will discuss more detailed transportation impacts as routes are firmly selected closer to the date that transportation will begin. *See* FSEIS Ch. 6 at 6-11 to 6-14 and App. G at G-2 to G-4. California alleges, without further explanation, that DOE's plan to move from a programmatic to more specific EIS "constitutes an inappropriate segmenting of the project." CAL Petition at 55. On the contrary, it seems apparent that DOE has "tiered" its environmental analysis, which is permitted under NEPA. 40 C.F.R. §§ 1502.20 and 1508.28. Tiering is appropriate

when the analysis follows from "a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis" as well as "when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe." *Id.* Here, DOE has completed a programmatic EIS, followed by more detailed EISs and supplements as more site-specific transportation information becomes available. This approach has been met with approval with regard to rail corridor assessment. *Nevada v. DOE*, 457 F.3d 78, 92 (D.C. Cir. 2006). Although California points out issues that DOE has not yet addressed, California does not present any evidence that DOE's tiering approach is inappropriate or that the approach has lead to a deficient FEIS for this stage of the national transportation program.

California does not demonstrate that the issue raised in CAL-NEPA-10 is material to the findings the NRC must make to authorize construction of the repository, as required by 10 C.F.R. § 2.309(f)(1)(iv). CAL-NEPA-10, therefore, is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

CAL-NEPA-10 names several issues that have not been analyzed in-depth in the FSEIS.

However, California presents no evidence that such issues must be the subject of detailed discussion at this point. The contention appears to rely on an affidavit from Fred Dilger, so it seems that the statements in offered in support of the contention represent his expert opinion. However, neither the affidavit nor the contention explains the basis for Dr. Dilger's opinion. The contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). For this reasons, CAL-NEPA-10 is inadmissible.

CAL-NEPA-11 - FAILURE TO EVALUATE IMPACTS WITHIN ALL RADIOLOGIC REGIONS OF INFLUENCE

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that they fail to evaluate the environmental impacts within all radiological regions of influence (ROI) for transportation in California and nationally.

CAL Petition at 59. CAL-NEPA-11 alleges that DOE's NEPA analysis is deficient because it "fails to assess the environmental impacts of the ROI anywhere outside the State of Nevada." CAL Petition at 59.

Staff Response

As discussed further below, California has not met the heightened environmental contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and has not included a sufficient affidavit as required. In addition, the contention does not meet all the contention admissibility criteria of 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-11 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at

Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with

evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

California alleges that DOE did not comply with NEPA and the Staff should not have recommended that the FSEIS be adopted because DOE did not "evaluate the environmental impacts within all radiological [ROIs] for transportation in California and nationally." CAL Petition at 59. However, DOE did provide radiological dose impacts along the radiological ROIs for all impacted states, including California. FSEIS App. G at G-60 to 150. This information also included vehicle emission fatalities and traffic fatalities. *Id.* DOE's analysis related to nationwide transportation focused on potential impacts to human health and safety and the potential for impacts along the representative routes "[b]ecause there would be no new land acquisition or construction to accommodate national transportation." FSEIS Chapter 3 at 3-94. Despite this, California alleges that DOE should have included more

detailed analysis of impacts along the radiological ROIs, but does not offer any support for this assertion beyond information regarding the populations in the radiological ROIs in California. CAL Petition at 60. The contention is also allegedly supported by an affidavit from Fred Dilger, Ph.D. However, as explained further below, that affidavit is legally deficient, and therefore cannot provide proper support for the assertions in the contention. Moreover, neither the contention nor Dr. Dilger's affidavit adequately explains the reasons for his opinions. Without further details and explanation, Dr. Dilger's affidavit is not sufficient to support an assertion that the alleged failure is significant. *See Oyster Creek,* CLI 08-28, 68 NRC at __ (slip op. at 16). Nor is the information offered by California sufficient to demonstrate that remedying this alleged failure by including more detailed information in the FSEIS would "paint a '*seriously* different picture of the environmental landscape'" from the current FSEIS. *Private Fuel Storage*, CLI-06-3, 63 NRC at 28. CAL-NEPA-11 does not meet the heightened contention admissibility standards in 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is not admissible.

Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of

Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-11 appears to be associated with an affidavit from Fred Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Dr. Dilger's curriculum vitae is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the

affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions.

California has not attached the required affidavit, nor does CAL-NEPA-11 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-11 is inadmissible because it does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised in the contention "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

California argues that DOE's "NEPA documents are inadequate and not practicable for adoption because they fail to assess the environmental impacts of the proposed Yucca Mountain Repository, namely they have not considered the [regions of influence] for transportation impacts . . . outside of Nevada." CAL Petition at 60. However, as discussed above, DOE presents an analysis of impacts along the radiological regions of influence nationwide in Appendix G of the FSEIS. This includes an analysis of dose rates and fatalities

from vehicle emissions and traffic fatalities in California. FSEIS App. G at G-67 to 68. California does not allege that these calculations were inadequate. Nor does California present any additional information that would "paint a '*seriously* different picture of the environmental landscape'" such that a supplement to the FSEIS would be required. *Private Fuel Storage*, CLI-06-3, 63 NRC at 28; see also *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (citing *Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987)).

Based on the above, California has not demonstrated that further detailed information on impacts along the radiological regions of influence in California is necessary for the NRC to make the appropriate findings prior to issuing a construction authorization for the repository. For this reason, CAL-NEPA-11 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv). The contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of CAL-NEPA-11, California cites information regarding the population within the radiological regions of influence in California. CAL Petition at 60. The contention also

cites FEMA databases showing the locations of facilities such as schools, medical centers, and police stations within the radiological regions of influence. *Id.* at 60-61. California, however, does not explain the link between this information and the contentions assertion that DOE must include information regarding *impacts* in the radiological regions of influence in California. Nor does California present any facts regarding the adequacy of the impacts analysis presented in Appendix G of the FSEIS.

As discussed above, this contention is associated with an affidavit from Fred Dilger. However, neither the affidavit nor the contention explains the basis for Dr. Dilger's opinions. The affidavit does reference a "technical memo" prepared by Dr. Dilger. Memorandum from Fred C. Dilger to Susan Durbin (Dec. 18, 2008) (Attachment C to Dilger Affidavit). This report consists of calculations and maps showing the location of facilities such as schools, medical centers, and police stations within the radiological regions of influence in California. *Id.* However, the technical memo does not explain the relationship between the calculations contained therein and the contention's assertion that DOE has not assessed impacts within California. California has not provided adequate support for CAL-NEPA-11 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a “genuine dispute exists with the applicant/licensee on a material issue of law or fact”, identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner’s position. 10 C.F.R. § 2.309(f)(1)(vi). Here, California alleges an omission: that DOE has not assessed potential impacts on populations in the radiological regions of influence in California. However, DOE presents impacts in Appendix G of the FSEIS. California does not address this assessment or allege that it is inadequate. Thus, California has not raised a genuine dispute with DOE on a material issue of law or fact, and CAL-NEPA-11 is inadmissible.

10 *C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application*

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "'bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), review declined, CLI-94-2, 39 NRC 91 (1994).

CAL-NEPA-11 alleges that the FSEIS is deficient because, although it defines the radiological regions of influence for incident-free transportation and accident/sabotage scenarios nationwide, it does not assess the environmental impacts in the radiological regions of influence outside of Nevada. CAL Petition at 59. The FSEIS does, in fact, assess national impacts in the radiological regions of influence in Appendix G, but CAL-NEPA-11 does not discuss these calculations. It is not possible to discern from the contention whether California alleges that these calculations are incorrect or otherwise deficient or that California alleges some other error in DOE's assessment. Without clarifying the asserted error, it is not possible to determine whether California actually disputes any portion of DOE's NEPA analysis. Thus, California has not demonstrated a genuine dispute on a material issue of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi). For this reason, CAL-NEPA-11 is

inadmissible.

CAL-NEPA-12 - FAILURE TO DISCUSS AND ANALYZE COLLOCATION RISKS

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that the Repository SEIS's analysis of accident risks and consequences does not discuss or analyze the collocation of essential facilities on the possible routes to the repository.

CAL Petition at 62. CAL-NEPA-12 alleges that the analysis of transportation accident risks in the Repository SEIS is inadequate because if fails to consider unique local conditions, including potential risks from the collocation of essential facilities and spent fuel transportation routes. *Id*.

Staff Response

As discussed further below, the contention does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and is not supported by a sufficient affidavit as required. In addition, California fails to demonstrate that the issue raised in the contention is material to the findings the NRC must make to issue a construction authorization for the repository and fails to provide adequate support for the contention as required by 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA 12 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy*

(High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from the contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual

and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Although California argues that DOE should have considered site-specific impacts from collocated facilities in its analysis of transportation risks, California does not provide any support for an assertion that such an omission is significant or that, had DOE considered such information, a "*seriously* different" picture of the impacts would have emerged. California presents information related to a gas-pipeline accident during clean-up after a train derailment, but does not explain how this information supports an argument that the issue raised in the contention is significant or, if true, would be likely to lead to a materially different result in DOE's NEPA analysis. The contention is also associated with an affidavit from Fred Dilger, Ph.D. However, as discussed further below, Dr. Dilger's affidavit is deficient.

Moreover, even if the affidavit were sufficient, neither the affidavit nor the contention explains the basis for Dr. Dilger's opinions. Without further technical details and explanation, the information submitted by California is not enough to support an assertion that the issue raised in CAL-NEPA-12 is significant or, if true, would be likely to lead to a materially different result with respect to DOE's NEPA analysis. CAL-NEPA-12 does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) or 51.109(a)(2), and, for that reason, is inadmissible.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

CAL-NEPA-12 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised

> of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-12 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-12 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998).

Here, California argues that DOE's FSEIS is "inadequate and not practicable for adoption because [it] fail[s] to assess all of the environmental impacts of the proposed Yucca Mountain repository, namely, it does not describe or analyze public health and safety and other environmental impacts of the collocation of routes with essential facilities." CAL Petition at 63. California does not explain, though, why this alleged failure impacts the adequacy of the FSEIS. Although, as discussed below, California presents evidence that there are location-specific risks and collocated essential facilities along rail shipment routes, California has not provided a link between this information and the sufficiency of the "hard look" at reasonably foreseeable impacts in the FSEIS. The purpose of challenging the adequacy of an EIS is not to "flyspeck" the EIS, "looking for any deficiency no matter how minor," but rather to identify deficiencies significant enough to defeat the informed decision-making envisioned under NEPA. *Nevada v. U.S. Dep't of Energy*, 457 F.3d 78, 94 (D.C. Cir. 2006) (citing *Fuel Safe Wash. v. FERC*, 389 F.3d 1313, 1323 (10th Cir. 2004)). Without understanding how the alleged deficiency will affect the adequacy of the EIS, the impact of the deficiency on the NRC's ability to make the finding required by 10 C.F.R. § 63.31(c) is

unclear. California has not demonstrated that the issue raised in CAL-NEPA-12 is material to the finding the NRC must make, and the contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Here, California has presented a variety of statements regarding the alleged site-specific risks in California that DOE failed to consider in the FSEIS. For example, California cites a 1989 train derailment in the San Bernardino County's El Cajon Pass. CAL Petition at 63. During the clean-up following this accident, a bulldozer pierced a pipeline, causing a fire. *Id.* However, California never explains the impact that considering such an impact would have on the FSEIS. Similarly, California cites a National Academy of Science study that discussed 12 severe accidents in the United States, including four in California. *Id.* at 64 (citing National Research Council of the National Academies, Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States (2006)). Thus, the contention concludes, "[d]espite the fact that California may have unique risks, the FSEIS treats accidents and their consequences in a generic manner that ignores local conditions that may contribute to an accident or amplify the environmental consequences of an accident." CAL Petition at 64. However, California never presents any evidence that such local conditions would actually result in reasonably foreseeable impacts different or greater than those already considered in the FSEIS. Therefore, the factual support proffered by California is insufficient to meet the requirement in 10 C.F.R. § 2.309(f)(1).

CAL-NEPA-12 is also purported supported by an affidavit from Dr. Dilger. As discussed above, the affidavit is deficient. However, even if that were not the case, the affidavit offers no explanation of the basis for any of the statements in the contention that may be supported by Dr. Dilger's affidavit as required. *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). The contention does not provide adequate support from either fact or expert opinion. Therefore, CAL-NEPA-12 does not comply with 10 C.F.R. § 2.309(f)(1) and is not admissible.

CAL-NEPA-13 - FAILURE TO DISCUSS AND ANALYZE BARGE RISKS

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that Repository SEIS Chapter six and Appendix G provide the estimated numbers of shipments and the distances and modes that shipments of spent nuclear fuel must travel from California reactors to intermodal sites and suggests multiple alternative modes of transportation for several California sites, including the use of barges, without assessing the environmental or public health impacts of the barge shipments in California.

CAL Petition at 66. CAL-NEPA-13 alleges that the FSEIS is deficient because it does not include a detailed description and analysis of DOE's plans to ship spent nuclear fuel from Humboldt Bay and Diablo Canyon to Yucca Mountain, including the potential use of barges. *Id.*.

Staff Response

As discussed further below, the contention does not meet the heightened admissibility criteria of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and is not supported by the required affidavit. In addition, the contention does not demonstrate that the issue raised is material to the findings the NRC must make to issue a construction authorization for the repository and is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-13 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve

disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criteria, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criteria, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why

any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id*. (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, California alleges that DOE has not adequately considered the impacts from using barges to ship spent fuel from Humboldt Bay or Diablo Canyon to railheads and then ultimately to Yucca Mountain. CAL Petition at 67. The FEIS presented an analysis of the

impacts of using barges to transport spent fuel from generator sites lacking rail access to nearby railheads. FEIS App. J at J-76 to J-87. This analysis was updated in the FSEIS, and DOE found that the impacts remained similar to those presented in the 2002 FEIS. FSEIS App. G at G-58. Nevertheless, the contention alleges the DOE should have included "information about how large numbers of intermodal handling operations will be performed at Diablo Canyon, Port Hueneme, or Humboldt Bay and the Port of Oakland due to the use of barges." CAL Petition at 68. The contention also alleges that DOE should describe "the health and safety implications at the specific locations where spent fuel handling will occur, and how it will be done at transfer locations that do not currently have the capacity to transfer the heavy TAD canisters." *Id.* The contention does not provide any support for these assertions. There is no documentary evidence that DOE must include detailed information about potential barge shipments from Diablo Canyon or Humboldt Bay. The contention is associated with an affidavit from Fred Dilger. As explained further below, that affidavit is deficient, and therefore cannot provide proper support for the assertions in the contention. Moreover, nothing in the contention or Dr. Dilger's affidavit explains the basis for his opinion that DOE must include a more detailed analysis of barge transportation. Without an explanation of the basis for the opinion the expert opinion is merely "[b]are assertions and speculations" and insufficient to demonstrate that the additional analyses California suggests would "paint a 'seriously different picture of the environmental landscape'" than the barge transportation information already analyzed by DOE. CAL-NEPA-13 does not meet the heightened admissibility criteria of 10 C.F.R. §§ 2.326 and 51.109(a)(2), and, therefore, the contention is inadmissible.

In addition, Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting

affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

CAL-NEPA-13 appears to be associated with an affidavit from Fred Dilger, Ph. D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Dilger Affidavit ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the

list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-13 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-13 is inadmissible because it does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

California alleges that the "Repository SEIS fails to describe or analyze how DOE will fulfill its obligations to safely ship spent nuclear fuel from Humboldt Bay and Diablo Canyon . . . including how it will safely use barges as an alternative means of transporting spent nuclear fuel to railheads." CAL Petition at 66. However, California does not explain why this analysis is required. Although federal agencies are required to take a "hard look" at the potential environmental consequences of proposed actions in their NEPA analyses, *see, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992), the requirement is tempered by a "rule of reason." *Id.*; *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative'" impacts. *LES*, LBP-06-08, 63 NRC at 258. In addition, an agency need not complete a full, detailed analysis of all environmental impacts from a large program-level action at once. "Tiering" an environmental analysis is acceptable under NEPA. 40 C.F.R. § 1508.28. Tiering is appropriate when the analysis follows from "a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis" as well as "when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe." *Id.* Although not ruling specifically on this issue of analyzing impacts from barge transportation, the D.C. Circuit already found that DOE's tiered approach to analyzing transportation impacts is acceptable under NEPA. *Nevada v. U.S. Dep't of Energy*, 457 F.3d 78, 93 (D.C. Cir. 2006).

California has not established that the impact of transportation of spent fuel from Diablo Canyon and Humboldt Bay via barge is a reasonably foreseeable impact whose analysis is required at this time in order for DOE to meet its NEPA obligations. Nor has California demonstrated that such an analysis is required for the NRC to make the finding required by

10 C.F.R. § 63.31(c) prior to issuing a construction authorization. CAL-NEPA-13 does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of the contention, California does not cite any documentary evidence. Rather, it appears that the contention rests solely on the opinion of Dr. Dilger. As discussed above, the affidavit from Dr. Dilger is deficient. Even if the affidavit were sufficient, however, neither it nor the contention explains the reasons for Dr. Dilger's opinions. California has not provided adequate support for CAL-NEPA-13 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

CAL-NEPA-14 - FAILURE TO DESCRIBE AND ANALYZE WASTE ACCEPTANCE CRITERIA

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. Part 51, in that the Repository SEIS fails to describe and analyze under what conditions the nuclear waste will be accepted for shipping from generator sites, or upon delivery at Yucca Mountain and has impermissibly deferred such analysis to a later date.

CAL Petition at 69. CAL-NEPA-14 alleges that the FSEIS is deficient because it does not consider the impacts of accepting spent fuel at California sites in a variety of conditions. CAL Petition at 69. According to the contention, some waste "may have been damaged or so brittle that it will require special handling and may cause higher exposure to workers." *Id.*

Staff Response

As discussed further below, this contention does not address the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include a sufficient supporting affidavit as required. In addition, the contention does not demonstrate that the issue raised is material to the finding the NRC must make to issue a construction authorization and is not adequately supported by fact or expert opinion. For these reasons, the contention is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id*. However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's EIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from CAL-NEPA-14 itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC at __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, California asserts that DOE must provide detailed information regarding waste acceptance criteria. CAL Petition at 69. However, California offers no explanation as to the significance of this issue or whether consideration of this issue would result in a material difference in the NEPA analysis. In support of the assertion in this contention, California offers a comparison to the waste acceptance criteria for the Waste Isolation Pilot Plan

(WIPP), CAL Petition at 71, but does not explain how the waste acceptance criteria for the WIPP relates to the current issue. The remaining support for the contention appears to derive from an affidavit from Fred Dilger, Ph.D. However, as discussed below, that affidavit is deficient, and therefore cannot provide proper support for the assertions in the contention. Moreover, neither the contention nor Dr. Dilger's affidavit explains the reason for his opinion that DOE must include a more detailed analysis of barge transportation. Without an explanation of the basis for the opinion the expert opinion is merely "[b]are assertions and speculations" and insufficient to demonstrate that the additional analyses California suggests would "paint a 'seriously different picture of the environmental landscape'" from the current analysis in DOE's NEPA documents. CAL-NEPA-14 does not meet the heightened admissibility criteria of 10 C.F.R. §§ 2.326 and 51.109(a)(2), and, therefore, the contention is inadmissible.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on

personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-14 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-14 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-14 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements to the NRC in conjunction with its license application, including the Repository SEIS. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998). Supplementation to correct an inadequate analysis is required only where any additional information would "paint a '*seriously* different picture of the environmental landscape.'" *Private Fuel Storage*, CLI-06-3, 63 NRC at 28.

To address the materiality requirement, California argues that that the Repository SEIS is inadequate and not practicable for adoption because it does "not adequately describe how DOE will verify the condition of the spent nuclear fuel that will by accepted for shipments from California generator sites or for nuclear waste that will traverse California on its way to the Yucca Mountain repository." CAL Petition at 70. Further in the contention, California notes that "DOE appears to have decided to address [this] issue at a later time," and alleges that, therefore, "DOE has unacceptable segmented and piecemealed its NEPA analysis by postponing any identification and environmental analysis, and by deferring any discussion of the environmental impacts arising from its waste acceptance decisions." CAL Petition at 70-

71. California, however, has not demonstrated that this alleged error must be addressed via supplementation in order for the NRC to make the required findings to issue a construction authorization for the repository.

In its analysis of transportation impacts, DOE states that the "Repository SEIS assumes that at the time of shipment the spent nuclear fuel and high-level radioactive waste would be in a form that met approved acceptance and disposal criteria for the repository." FSEIS Chapter 2 at 2-44 to 2-45. Waste acceptance criteria for transportation will be determined when the NRC certifies shipping casks pursuant to 10 C.F.R. Part 71. "Tiering" an environmental analysis is acceptable under NEPA. 40 C.F.R. §§ 1502.20 and 1508.28. Tiering is appropriate when the analysis follows from "a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis" as well as "when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe." *Id.* Here, DOE has completed a programmatic EIS, followed by more detailed EISs and supplements as more site-specific transportation information becomes available. This approach has been met with approval with regard to rail corridor assessment. *Nevada v. DOE*, 457 F.3d 78, 92 (D.C. Cir. 2006). Similarly, it seems that DOE will analyze details of waste packaging once waste acceptance criteria become available. California has not demonstrated that this tiered approach is inappropriate.

California does not demonstrate that the issue raised in CAL-NEPA-14 is material to the findings the NRC must make to authorize construction of the repository, as required by 10 C.F.R. § 2.309(f)(1)(iv). CAL-NEPA-14, therefore, is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to

support its position." 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of the CAL-NEPA-14, California cites the Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WIPP) as an example of the type of criteria DOE should include in the Repository SEIS. CAL Petition at 71. However, California does not provide any support for the assertion that this type of information must be considered now for the Repository SEIS to take an adequate hard look at environmental consequences. Because the contention is associated with an affidavit from Fred Dilger, it seems that the remaining statements in offered in support of the contention represent his expert opinion. However, neither the affidavit nor the contention explains the basis for Dr. Dilger's opinion. The contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). For this reasons, CAL-NEPA-14 is inadmissible.

CAL-NEPA-15 - BY USING REPRESENTATIVE ROUTES, DOE HAS FAILED TO ANALYZE ENVIRONMENTAL IMPACTS OF PROBABLE ROUTES RAILROADS WOULD USE

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), in that the Repository SEIS proposes to let the railroads, rather than DOE or other governmental entity, choose the routes over which spent nuclear fuel and high level radioactive waste will be shipped to the Yucca Mountain repository, including routes through California, yet in its analysis of environmental impacts it ignores routes that the railroads have suggested they will actually use and instead bases its environmental analysis on historic rail industry practices (See Section A3, Page A-5), thereby failing to analyze the true potential environmental impacts of the proposed action.

CAL Petition at 73. CAL-NEPA-15 alleges that the DOE has not complied with NEPA because DOE based its environmental analysis of rail shipments on representative routes selected based on historic rail industry practice rather than information on potential routes submitted by the rail industry. *Id*.

Staff Response

As discussed further below, CAL-NEPA-15 does not comply with 10 C.F.R. § 2.326. In addition, this contention does not comply with 10 C.F.R. § 2.309(f)(1) because it does not demonstrate that the issue raised is material to the findings the NRC must make, and is not adequately supported by facts or expert opinion. For these reasons, CAL-NEPA-15 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve

disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __, (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, as discussed below, California has not offered any

explanation as to why this particular contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention. California's contention should be rejected on this basis alone.

Nor can it be implied from CAL-NEPA-15 itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id*. (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

California argues that DOE should have based its analysis of impacts from rail transportation on information from rail companies instead of representative rail routes based

historic data. CAL Petition at 73. In support, California cites a study from the National Academy of Sciences that "indicated that there may be individual routes that could have risks that are significantly higher." CAL Petition at 75 (citing National Research Council of the National Academies, Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States (2006)). The Petition also references statements calling for more detailed analysis of rail routes. *Id.* However, none of this shows that using different rail route data would actually impact the analysis in DOE current NEPA documents. There is not sufficient support provided for the contention to meet the "deliberately heavy" evidentiary standard for a motion to reopen. *See Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). The contention is also allegedly supported by an affidavit from Fred Dilger, Ph.D. However, as discussed below, this affidavit is deficient and does not adequately explain the reason for his opinions. This affidavit is not sufficient to support an assertion that the alleged deficiency is significant or to demonstrate that a materially different result with respect to DOE's NEPA analysis would be likely, as required by 10 C.F.R. § 2.326. *See also id.* (slip op at 16). Because CAL-NEPa-15 does not meet the heightened contention admissibility standards at 10 C.F.R §§ 2.326 and 51.109(a)(2), the contention is inadmissible.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the

affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

CAL-NEPA-15 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Dilger Affidavit ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable

to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. There is an attachment to Dr. Dilger's affidavit that purports to explain Dr. Dilger's position. CAL Petition, Attachment 1, Dilger Affidavit, Attachment E, Memorandum to Susan Durbin from Fred Dilger, " Technical Memo Supporting California's Contention on Rail Industry Routes," (Dec. 18, 2008). However this memo presents only a map of alternate rail routes and unsupported statements that "[t]he FSEIS may substantially understate the numbers of shipments through California" and "[t]he UPRR has suggested alternative routes, which could increase the impacts on California." *Id.* at 4. Neither the affidavit nor the contention discusses any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-15 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-15 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455.

California states that the contention is material to the findings the NRC must make because DOE's use of a representative rail route based on historic rail use fails "to adequately analyze the environmental impacts along the actual routes that will be utilized in shipping nuclear waste to the Yucca Mountain repository, including routes through California." CAL Petition at 74. However, California does not cite to any legal requirement

that DOE consider actual rail routes rather than representative rail routes. Nor does California argue that, had DOE analyzed these routes, the impacts presented would have been any greater than the impacts currently analyzed by DOE. Therefore, California has not shown that the analysis it urges is material to the adequacy of the FEIS, and CAL-NEPA-15 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). As support for this contention, California cites to documents dating from 2002 to 2007 calling for early rail route selection and delegation, including a National Academy of Sciences study that "indicated that there may be individual routes that could have risks that are significantly higher or lower than estimated in DOE's 2002 Yucca Mountain FEIS." CAL Petition at 75 (citing National Research Council of the National Academies, Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States (2006)). However, California does not provide a link between the National Academies report and the specific routes the state alleges should be considered by DOE. California also states without explanation that Union Pacific Railroad provided its preferred routes to DOE in 2003, but DOE did not include these routes in its representative route analysis. *Id.* However, there is no information provided that evidences that the representative routes provided in the FSEIS do not provide a reasonable estimate of the environmental impacts from shipments to the proposed repository or that the routes developed based on specific route selections from railroads or affected states would result in a different or more exact calculation of impacts. The contention also includes anecdotal statements regarding the types of environmental damage that could occur at specific sites or on specific routes, for example, economic damage due to disruptions at the

Ports of Los Angeles and Long Beach. *Id.* at 76. The contention does not, however, provide any specific evidence of the size of these impacts or any evidence that these site-specific risks would be greater than or different from the risks already calculated by DOE for the representative rail route. The contention is allegedly supported by an affidavit from Dr. Dilger. However, as discussed above, this affidavit is deficient. Moreover, neither the affidavit nor the contention explains the reason behind Dr. Dilger's opinions. There is a technical memo attached to the affidavit. Dilger Affidavit, Attachment D. However, while this memo contains information regarding rail routes suggested by Union Pacific Rail Road, it does not explain the reasons for Dr. Dilger's assertions that "[t]he FSEIS may substantially understate the numbers of shipments through California" and "[t]he UPRR has suggested alternative routes, which could increase the impacts on California." *Id*. at 4. CAL-NEPA-15 lacks the requisite factual or expert opinion support and therefore is inadmissible.

CAL-NEPA-16 - DOE HAS IGNORED THE NAS RECOMMENDATION OF INDEPENDENT EXAMINATION OF THE SECURITY OF SHIPMENTS

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the California Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51 in that the NEPA documents fail to include essential security and environmental information required by the NRC regulations, to wit, there is no independent review of security arrangements by an organization independent of the government, as recommended by the National Academy of Scientists (NAS).

CAL Petition at 78. CAL-NEPA-16 alleges that because there was no "independent" examination of security arrangements, "there has not been a full and adequate analysis of security and environmental impacts . . . namely, the potential risks of acts of sabotage or terrorism." *Id.*

Staff Response

As discussed further below, this contention does not comply with the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not present affidavits as required by regulation. In addition, this contention does not demonstrate that the issue presented is material to the finding the NRC must make to issue the construction authorization and does not show a genuine dispute regarding the Application, as required by 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-16 is inadmissible.

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented."

Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). Section 2.326(b) also requires supporting affidavits.

Here, California has not explicitly addressed the section 2.326 criteria and thus, CAL-NEPA-16 should be rejected on this basis. Further, it appears that California is arguing that the failure of DOE to conduct an independent review of security arrangements renders DOE's SEIS inadequate. However, nothing in CAL-NEPA-16 demonstrates that this is a significant safety or environmental issue. *See* CAL Petition at 79-80. California has not demonstrated that including the suggested security review in the Repository SEIS would

"paint a '*seriously* different picture of the environmental landscape'" from the currently submitted SEIS. California has not alleged that an independent analysis of the security arrangements would result in impact that would be any different than that included in the Repository SEIS. That is, California has failed to show that the NAS-recommended independent security review would “or would have been likely” to yield “a materially different result.” *See* 10 C.F.R. § 2.326(a). Therefore, CAL-NEPA-16 does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326(a) and is inadmissible.

Moreover, California fails to meet the requirements of sections 2.326(b) and 51.109(a)(2) which require that a NEPA contention be supported by an affidavit. This affidavit is part of the required demonstration that this issue raised is significant and would lead to a materially different result. *See Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 13). Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep’t of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-16 appears to be associated with an affidavit from Fred Dilger. CAL Petition,

Attachment 1, Affidavit of Fred C. Dilger. Dr. Dilger's affidavit states:

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

Dilger Affidavit ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Because CAL-NEPA-16 fails to meet the requirements of 2.326, it should be rejected. In addition, as discussed below, CAL-NEPA-016 does not meet the requirements of 10 CF.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. " 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). To that end, DOE has submitted environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

As discussed above, California argues that since DOE failed to adopt "the recommendation of the NAS that an independent examination of the security of spent fuel and high-level waste transportation" be conducted, "the Repository SEIS is not practicable for adoption." CAL Petition at 79. However, while NEPA requires DOE to take a "hard look" at all potential environmental consequences, *see Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 87 (1998), this examination "is subject to a 'rule of reason,' meaning that the assessment need not include every environmental effect that could potentially result from the action, but rather 'may be limited to the effects which are shown to have some likelihood of occurring.'" *Hydro Resources, Inc*, (PO Box 777, Crownpoint, New Mexico 87313), LBP-04-23, 60 NRC 441, 447 (2004), citing *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 & 2), ALAB-455, 7 NRC 41, 48 (1978). Nor, as in the present instance, where a federal agency would be asked to supplement an environmental impact statement, need the agency take action every time an additional consideration is raised. Rather, supplementation is required where any additional information would paint a '*seriously* different picture of the environmental landscape.'" *Private Fuel Storage*, CLI-06-3, 63 NRC at 28; *see also Hydro Resources, Inc*. (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999), citing *Sierra*

Club v. Froehlke, 816 F.2d 205, 210 (5th Cir. 1987). Here, the analysis California seeks (an independent review of security arrangements) is not a requirement by any NRC or NEPA regulation, nor has California demonstrated it to be such. Rather, an independent review of security arrangements is but a recommendation from the NAS. Even if DOE has cited to the NAS's Findings and Recommendations in its Repository SEIS, any such reference to analysis by NAS does not therefore bind DOE to the substance contained therein. Nor has California demonstrated that including this information would seriously alter the analysis of security arrangements of spent fuel and high-level waste transportation. For the above reasons, California has not demonstrated that the issue raised in CAL-NEPA-16 is material to the findings the NRC must make to issue a construction authorization for the repository. Therefore, CAL-NEPA-16 does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

CAL-NEPA-16 fails to show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact." 10 C.F.R. § 2.309(f)(1)(vi). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), *review declined*, CLI-94-2, 39 NRC 91 (1994). A petitioner must submit more than "' bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted). California alleges that "[t]he failure to include this independent analysis of environmental impacts does not meet the NRC regulatory requirements; therefore the Repository SEIS is not practicable for

adoption." CAL Petition at 80. However, other than noting that the NAS recommended such a study, California provides no basis for its assertion that the failure to include such a study would render the EIS inadequate. Such unsupported allegations do not support the admission of this contention. *See Millstone*, CLI-01-24, 54 NRC at 358.

For the reasons set forth above, CAL-NEPA-16 fails to meet the requirements 10 C.F.R. §§ 2.326, 51.109(a)(2), 2.309(f)(1)(iv), and 2.309(f)(1)(vi). Accordingly, CAL-NEPA-16 should be rejected.

CAL-NEPA-17 - ENVIRONMENTAL IMPACTS FROM THE USE OF HEAVY HAUL TRUCKS AT LOCAL SITES

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that the Repository SEIS' analysis fails to adequately describe how DOE will mitigate the impacts from large numbers of heavy haul truck shipments from Diablo Canyon to San Luis Obispo; therefore DOE has failed to assess the environmental impacts of the proposed action.

CAL Petition at 82. CAL-NEPA-17 alleges that the Repository SEIS is inadequate because "it does not assess the consequences of using roads and highways in the area around the reactor for large numbers of heavy-haul shipments of spent nuclear fuel over an extended period of time." CAL Petition at 82.

Staff Response

As discussed further below, this contention does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is not accompanied by the required affidavit. In addition, the contention does not demonstrate that the issue raised is material to the findings the NRC must make to issue a construction authorization for the repository and is not adequately supported by facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-17 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these requirements is on the proponent of the contention. *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (2008) (slip op. at 23). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id*. However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's

adoption decision would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*. California alleges that DOE did not comply with NEPA and the Staff should not have recommended that the FSEIS be adopted because DOE did not assess the consequences of using heavy-haul trucks for shipments of spent nuclear fuel from Diablo Canyon. CAL Petition at 82. California argues that the routes that may be used to ship spent fuel from Diablo Canyon via heavy-haul trucks are "minor arterials" not designed for regular heavy haul traffic and, therefore, use of the these roads "may require substantial

improvements or increased amounts of maintenance." *Id.* at 83. However, California does not explain why this alleged failure is significant. Nor does California explain how remedying this alleged failure by including the analysis in the FSEIS would "paint a '*seriously* different picture of the environmental landscape'" from the current FSEIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). For these reasons, CAL-NEPA-17 does not meet the heightened contention admissibility standards in 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is not admissible.

Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (June 20, 2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-17 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr.

Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Dilger Affidavit ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-17 meet the heightened admissibility requirements of 10 C.F.R. § 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-17 is inadmissible because it does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

California alleges that DOE's "NEPA documents are inadequate and not practicable for adoption because they fail to assess the environmental impacts of the proposed Yucca Mountain repository, namely they do not analyze the impacts of heavy haul trucks" used in transporting spent fuel from Diablo Canyon. CAL Petition at 83. However, California does not explain why this analysis is required. Although federal agencies are required to take a "hard look" at the potential environmental consequences of proposed actions in their NEPA analyses, *see, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992), the requirement is tempered by a "rule of reason." *Id.*; *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative'" impacts. *LES*, LBP-06-08, 63 NRC at 258. In addition, an agency need not complete an analysis of all

environmental impacts at once. "Tiering" an environmental analysis is acceptable under NEPA. 40 C.F.R. § 1508.28. Tiering is appropriate when the analysis follows from "a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis" as well as "when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe." *Id.*

California has not established that the impact of heavy-haul trucks to be used specifically to transport shipments of spent fuel from Diablo Canyon must be considered at this time in order for DOE to meet its NEPA obligations. Nor has California demonstrated that such an analysis is required for the NRC to make the finding required by 10 C.F.R. § 63.31(c) prior to issuing a construction authorization. DOE considered national transportation impacts in the FSEIS. FSEIS Chapter 6 at 6-15 to 6-32. These impacts were based on representative transportation routes, rather than the actual roads and highways that will specifically be used for spent fuel shipments and have not yet been determined. *Id.* at 6-17 to 6-20. This seems to be consistent with DOE's general tiered approach to its NEPA analysis, which is to create a programmatic FEIS and subsequent more detailed EISs as more specific information becomes available. Although not ruling directly on the issue of heavy-haul truck transportation, a court previously found DOE's tiered approach to analyzing transportation impacts acceptable. *Nevada v. U.S. Dep't of Energy*, 457 F.3d 78, 93 (D.C. Cir. 2006). CAL-NEPA-17 does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel,*

Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of this contention, California cites a map in the FSEIS that "*suggests* that DOE intends to use [two minor arterial roads] as the overweight truck route from Diablo Canyon to an intermodal handling facility." CAL Petition at 83 (emphasis supplied). According to the contention, this route "will require crossing San Luis Obispo Creek and may require substantial improvements or increased amount of maintenance due to these shipments," which, according to California's interpretation of the DOE plan could total "perhaps five shipments per year." *Id.* The FSEIS, however, states only that there will be 122 casks shipped from Diablo Canyon on a total of 41 rail shipments. FSEIS Appendix G, Table G-10. As discussed above, DOE has based its analysis on representative routes, and the actual route or method to be used to transport casks from Diablo Canyon to the nearest rail line has not been determined. California does not explain the significance of any of the information offered in support of the contention and, in particular, why this information supports the assertion that DOE must include an analysis of the impacts of heavy haul trucks to transport shipments of spent fuel from Diablo Canyon to an intermodal transfer facility at this time.

Moreover, to the extent that this information consists of expert opinion, it is inadequate. As discussed above, the affidavit from Dr. Dilger is insufficient. Even if the affidavit were sufficient, however, neither it nor the contention explains the basis for Dr. Dilger's opinions. As discussed above Dr. Dilger simply asserts that if DOE utilizes "minor arterial" roads for heavy haul shipments, those routes "may require substantial improvements or increased amount of maintenance," but does not explain why he believes these routes will be used or

why he believes this extra up-keep will be required. California has not provided adequate support for CAL-NEPA-17 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

CAL-NEPA-18 - FAILURE TO ANALYZE IMPACTS FROM THE USE OF CALIFORNIA STATE ROUTE 299

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that DOE failed to analyze the environmental impacts, including those to the Trinity National Wild and Scenic River and other unique natural resources, from use of California State Route 299 as a transportation route for heavy haul trucks to a railhead in Redding for ultimate rail shipment to the Yucca Mountain repository.

CAL Petition at 85. CAL-NEPA-18 alleges that DOE's NEPA analysis is inadequate because it does not include an analysis of impacts from the use of California State Highway 299 as a heavy haul route for spent fuel shipments from Humboldt Bay. CAL Petition at 85.

Staff Response

As discussed further below, this contention does not meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2), nor does it include the required affidavit. In addition, the contention does not demonstrate that the issue raised is material to the findings the NRC must make to issue a construction authorization for the repository and is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-18 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criteria, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why

any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's FEIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

California alleges that DOE did not comply with NEPA and the Staff should not have recommended that the FSEIS be adopted because DOE did not assess impacts resulting from the use heavy-haul trucks on California State Highway 299 for shipments of spent

nuclear fuel from Humboldt Bay. CAL Petition at 85. As documentary support for this assertion, California offers only generic information regarding highway standards and information related to an accident on a separate highway. *Id.* at 86-87. California's assertions are also allegedly supported by an affidavit from Fred Dilger, Ph.D. As explained further below, that affidavit is deficient, and therefore cannot provide proper support for the assertions in the contention. Moreover, nothing in the contention or Dr. Dilger's affidavit explains the basis for his opinions. Without further technical information or explanation, California has not shown that the issue raised in the contention is significant. Nor does California demonstrate how remedying this alleged failure by including the assessment in the FSEIS would "paint a '*seriously* different picture of the environmental landscape'" from the current FSEIS. CAL-NEPA-18 does not meet the heightened contention admissibility standards in 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is not admissible.

Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on

personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

CAL-NEPA-18 appears to be associated with an affidavit from Fred Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Dr. Dilger's curriculum vitae is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the

contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-18 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-18 is inadmissible because it does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

In addressing materiality, California alleges that DOE's "NEPA documents are inadequate and not practicable for adoption because they fail to assess the impacts on public health and safety and the unique natural resources from the use of heavy haul trucks on California State Route 299." CAL Petition at 86. In support of this, California cites generic guidelines for highways and argues that California State Route 299 is suitable only for use by vehicles with standard weight and size restrictions. CAL Petition at 87. The contention also states that California State Route 299 "crosses difficult terrain [and] parallels a national scenic river for much of the distance," as support for the assertion that DOE should complete an analysis of impacts from the use of the highway. However, California does not take into

account DOE's statement that any heavy haul transportation "would require special permits issued by a state transportation agency [that] would normally restrict the times of operation (typically daylight, non-rush-hour), operating speeds, and highways used." FEIS, Chapter 6 at 6-12. Nor does California explain why this analysis is required so far in advance of the selection of the actual route from Humboldt Bay to a rail line.

Although agencies must take a "hard look" at impacts from major federal actions, this requirement is tempered by a "rule of reason." *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992); *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative'" impacts. *LES*, LBP-06-08, 63 NRC at 258. In addition, an agency need not complete an analysis of all environmental impacts at once. "Tiering" an environmental analysis is acceptable under NEPA. 40 C.F.R. § 1508.28. Tiering is appropriate when the analysis follows from "a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis" as well as "when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe." *Id*. DOE previously analyzed heavy haul transportation impacts for Nevada transportation, 2002 FEIS at 6-16 to 6-32, and reported possible heavy haul truck route distances for Diablo Canyon in the 2002 FEIS. 2002 FEIS App. J, Table J-11. However, DOE has not fully analyzed all potential transportation impacts because, "[a]t this time, . . . years before shipments could begin, DOE has not determined the specific routes it would use to ship spent nuclear fuel and high-level radioactive waste to the proposed repository." 2002 FEIS App. J at J-23. Rather, DOE "used current regulations governing highway shipments and historic rail industry practices to select existing highway and rail routes to estimate potential environmental impacts of national transportation," and

committed to identifying preliminary shipment routes about 4 years before shipments begin. *Id.* This approach appears to be consistent with DOE's tiered approach to another transportation impacts analysis, rail corridor selection and alignment, which was found appropriate to be appropriate after judicial review. *Nevada v. U.S. Dep't of Energy,* 457 F.3d 78, 92 (2006).

Nevertheless, California alleges that transportation of spent fuel via heavy haul trucks on California State Highway 299 "will cause significant disruption of traffic and pose significant problems." CAL Petition at 86-87. California also alleges that any accident on the highway would endanger the Trinity National Wild and Scenic River and other natural resources. *Id.* at 87. However, California has not established that, in light of the fact that DOE has not selected its primary transportation routes, these alleged impacts are reasonably foreseeable impacts that must be considered at this time in order for DOE to meet its NEPA obligations related to the construction authorization for the repository. Nor has California demonstrated that such an analysis is required for the NRC to make the finding required by 10 C.F.R. § 63.31(c) prior to issuing a construction authorization. CAL-NEPA-18 does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R.§ 2.309(f)(1)(v). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472

(2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

Based on a figure included in the FSEIS, California alleges that California State Highway 299 will be the route used to ship spent fuel via heavy haul truck from Humboldt Bay. CAL Petition at 86 (citing Repository SEIS Figure G-6). The contention states that this route "is suitable for use by vehicles with standard weight and size restriction," *id.*, but, although the document cited by the contention discusses standards for highways in general, it does not explicitly support any conclusion for this particular highway. This statement also does not take into account DOE's statement in the 2002 FEIS that heavy-haul transportation "would require special permits issued by a state transportation agency [that] would normally restrict the times of operation (typically daylight, non-rush-hour), operating speeds, and highways used." 2002 FEIS, Chapter 6 at 6-12. In addition California also cites to an August 30, 2008 accident on a different road, State Highway 36, that involved a new dry storage cask being transported to Humboldt Bay, and argues that the large size of the shipment contributed to the accident, although the newspaper article about the accident cited by California includes no conclusion about the cause of the accident. CAL Petition at 87. The contention also alleges that "any accident along State Route 299 would endanger the Trinity Scenic Byway . . . , the Trinity National Wild and Scenic River, Whiskeytown Lake, and the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National Recreation Area," but does not explain the basis for this assertion.

Moreover, to the extent that this information consists of expert opinion, it is inadequate. As discussed above, the affidavit from Dr. Dilger is deficient. Even if the affidavit were sufficient, however, neither it nor the contention explains the basis for Dr. Dilger's opinions. California has not provided adequate support for CAL-NEPA-18 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

CAL-NEPA-19 - FAILURE TO ANALYZE USE OF TAD CANISTERS

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that the Repository SEIS fails to assess the environmental impacts of, and the costs and ability to use, Transportation, Aging and Disposal (TAD) canisters at California generator sites.

CAL Petition at 88. In this contention California asserts that DOE has failed to assess environmental impacts, including the costs of and the ability to use safely TAD containers at California generator sites.

Staff Response

As discussed below, the contention does not adequately address the criteria in 10 C.F.R. § 2.326 and does not include the required affidavit. In addition, California has not demonstrated that the issue raised in the contention is material to the findings the NRC must make to issue a construction authorization for the repository, nor has California provided adequate support for the contention. 10 C.F.R. § 2.309(f)(1). For these reasons, CAL-NEPA-19 is not admissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008)

(slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id.* In order to meet the second criteria, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criteria, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's EIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from the contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with

evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

The contention alleges that DOE's NEPA analysis does not adequately assess the environmental impacts, costs, and use feasibility of TAD canisters at California waste generator sites. CAL Petition at 88. In support of this assertion, California expresses “concerns” about the safety impact to workers from the TAD program and the feasibility of incorporating the TAD program into existing generator infrastructure. CAL Petition at 90-91. These “concerns” are not sufficient to “demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially” as required by § 2.326(a)(3). California also relies on information presented by NEI representative Rod McCullum for the proposition that SNF generators will not repackage

spent fuel in dry casks into TADs for shipment to Yucca Mountain. *See* CAL Petition at 90. However, this information is not presented in compliance with the requirements of § 2.326(b), which prescribes that affidavits be presented to "set forth the facts and/or technical bases for the movant's claim that the criteria of paragraph (a) . . . have been satisfied." Because California does not present Mr. McCullum's statements in an affidavit, but rather cites to documents published on the LSN, the statements do not meet the elevated requirements of § 2.326(b).

This contention is allegedly supported by an affidavit from Fred Dilger, Ph.D. As discussed further below, Dr. Dilger's affidavit is deficient. Moreover, neither the affidavit nor the contention explains the basis for Dr. Dilger's opinion. Without further technical details and explanation, the information submitted by California is not enough to support an assertion that the issue raised in CAL-NEPA-19 is significant or, if true, would be likely to lead to a materially different result with respect to DOE's NEPA analysis. Thus, the contention has not met the heightened admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2), and, for that reason, is inadmissible.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10,

67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

CAL-NEPA-19 appears to be associated with an affidavit from Fred Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Dilger Affidavit ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents

or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

California has not attached the required affidavit, nor does CAL-NEPA-19 meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, CAL-NEPA-19 does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

An admissible contention must assert an issue of law or fact that is “material to the findings the NRC must make to support the action that is involved in the proceeding.” 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). Consequently, DOE has submitted several environmental impact statements, including the Repository SEIS, to the NRC in conjunction with its license application. Although federal agencies are required to take a "hard look" at the potential environmental consequences of proposed actions in their NEPA analyses, *see, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992), the requirement is tempered by a "rule of reason." *Id*; *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *PFS*, CLI-06-3, 63 NRC at 28 (2006) (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are]

required." *Id*.

California raises issues on safety and environmental impact from TAD loading operations at the California generator site, and, thus, claims that the FSEIS is inadequate. A generic assessment of impacts at generator sites was made in Appendix G, including the estimated average radiation dose for loading spent nuclear fuel into canisters for workers in Section G.1.2 and industrial safety impacts to workers from loading in G.1.3. *See* FSEIS, Appendix G at G-2 – G-4. California does not specifically address these assessments and thus has not demonstrated that its assertions paint a "*seriously* different picture of the environmental landscape" such that NRC must require a supplement before it can decide to adopt the FSEIS. *PFS*, CLI-06-3, 63 NRC at 28 (2006) (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). Therefore, the issues raised by California are not demonstrated to be material to the findings that NRC must make to support the action involved in this proceeding.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). Here, California states that DOE's impact assessment for generators of SNF was inadequate and because DOE has not assessed potential impacts on the health and safety due to the additional spent fuel handling required by the TAD canister system. *See* CAL Petition at 89. However, DOE presents a generic impact analysis for these in Appendix G of the FSEIS. California does not address this assessment or allege that it is inadequate. Thus, California has not raised a genuine dispute with DOE on a material issue of law or fact, and CAL-NEPA-19 is inadmissible.

CAL-NEPA-20 - FAILURE TO ADEQUATELY ANALYZE IMPACTS ON LOCAL EMERGENCY MANAGEMENT RESPONSIBILITIES

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS, the Repository SEIS, or the Nevada Rail Corridor SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51 in that the NEPA documents fail to adequately describe how DOE intends to fund and train local, state and tribal public safety officials to respond to emergencies during transportation of spent nuclear fuel and high level radioactive waste through their jurisdictions, as required by section 180(c) of the NWPA, nor does it even attempt to analyze what would be an adequate level of funding for this purpose, or what kind of training would be needed.

CAL Petition at 93. California contends that DOE's NEPA documents fail to analyze or disclose how adequate funding and training will be ensured for state and local governments to respond to accidents or sabotage to shipments of high-level waste. *Id.* Specifically, California challenges Chapter 6, Appendix H, and Appendix L of the FSEIS. *Id.* at 98.

Staff Response

As discussed further below, CAL-NEPA-20 does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include the required affidavit. In addition, the contention does not meet the 10 C.F.R. § 2.309(f)(1) contention admissibility requirements. For these reasons, the Staff opposes admission of CAL-NEPA-20.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that

are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape.'" *Id*. (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the 10 C.F.R. § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with Section 2.326(a)(1). *Id.* In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id.* In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id.* In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why this particular contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's EIS or the Staff's adoption would result based on the information in the contention.

Nor can it be inferred from the text of this contention that California has satisfied the heighted contention admissibility standards in Sections 2.326(a) and 51.109(a)(2). Here Nevada argues that DOE failed to adequately describe how it intends to fund and train local, state and tribal public safety officials to respond to transportation emergencies as required by Section 180(c) of the NWPA. CAL Petition at 93. California argues that it is crucial to have responsibilities for managing these incidents described in advance, but California does not show that the absence of a specific plan for funding and training state, local, and tribal governments for future waste shipments is a significant health or environmental issue. *Id.* at 97. In addition, California has not shown that if specific training and funding plans for local, state and tribal public safety officials had been included in the FSEIS, that a materially

different result would have been likely. *See* CAL Petition at 43. Because California has not shown that consideration of specific training and funding plans would "paint a 'seriously different picture of the environmental landscape,'" it has failed to meet the heighted admissibility standards. *See PFS,* CLI-06-3, 63 NRC at 28. For this reason, CAL-NEPA-20 is inadmissible.

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

CAL-NEPA-20 appears to be associated with an affidavit from Fred Dilger. *See* CAL Petition, Attachment 1, Affidavit of Fred C. Dilger. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the State of California will assign

> unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

CAL Petition, Attachment 1, Affidavit of Fred C. Dilger at ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the FEIS, the FSEIS, the Rail Corridor SEIS, the Rail Alignment EIS, California's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger, and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of Dr. Dilger's opinions. Nor does the affidavit or the contention discuss any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

Therefore, because California has not attached the required affidavit and does not meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2), CAL-NEPA-20 is inadmissible. In addition, as discussed below, CAL-NEPA-20 does not comply with the requirements of 10 C.F.R. § 2.309(f)(1)(iv).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

To be admissible, a contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *See Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 87-88 (1998). Supplementation to correct an inadequate analysis is required only where any additional information would "paint a '*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28.

Here, California contends that DOE's NEPA documents "are incomplete and inadequate" because they "fail to provide adequate description and analysis as to how it [DOE] intends to carry out its responsibilities under NWPA section 180(c)" for ensuring adequate funding and training is provided to the state, tribes, and local governments. CAL Petition at 94.

California has not shown that information regarding future funding and training for state, tribal, and local emergency response programs raises a material issue regarding NEPA determinations. DOE discusses emergency response and technical assistance and funding for state, local and tribal governments in Appendix H of the FSEIS. *See* FSEIS at H-16 to H-18. Section 180(c) of the Nuclear Waste Policy Act requires DOE to provide technical assistance and funding for training states, tribes, and local governments for safe routine transportation and emergency response. *See* Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, NV, 66 Fed. Reg. 55,732, 55,746 (Nov. 2, 2001). Appendix H states that in accordance with NWPA Section 180(c), DOE will

evaluate preparedness and provide technical assistance and funding to ensure that state, tribal and local officials are prepared for shipments of spent nuclear fuel and high-level radioactive waste to the repository. *See* FSEIS Section H.6 at H-19; *see also id.* at H-18, H34 to H-35. This funding, as stated by DOE, is intended to supplement existing training programs for safe routine transportation and emergency preparedness. *See id.* at H-19. DOE also states that it anticipates making two types of grants to states and tribes, subject to the availability of appropriated funds, approximately three and four years prior to the first shipment and that states and tribes are expected to coordinate with local public safety officials. *See id.* While DOE is required to assess and mitigate the potential for environmental impacts due to transportation accidents, DOE is not required under NEPA to provide "a fully developed plan that will mitigate environmental harm before an agency can act" nor does it require "a detailed explanation of specific measures which will be employed to mitigate the adverse impacts of a proposed action." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 353-54 (1989). Thus, contrary to California's assertions, DOE is not required to show final, detailed plans with funding information to satisfy its NEPA obligations. *See* CAL Petition at 93. In addition, California has not shown that if more detailed plans were considered, this would "paint a '*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28. Therefore, California has not shown that consideration of these impacts is material to the finding the NRC must make as required by 10 C.F.R. § 2.309(f)(1)(iv).

In addition, California alleges that DOE's analysis is deficient because it does not consider the environmental impacts of the situation where adequate funding and training is not received. *Id.* at 94-95. California discusses past episodes of radiological contamination which required expensive and complex resources. *Id.* at 95. California does not, however, show how consideration of the impacts of the situation where adequate funding and training is not received would "paint a '*seriously* different picture of the environmental landscape'"

such that a supplement to the Repository SEIS would be required. *See PFS*, CLI-06-3, 63 NRC at 28 (internal citation omitted) (emphasis in original).

Finally, California does not explain how its assertion that the NEPA documents cannot be adopted because they fail to analyze or discuss how DOE will comply with CERCLA, its responsibilities under the National Contingency Plan, and the NRC's rules regarding shipments, is relevant to the issues raised by this contention, *see* CAL Petition at 94, i.e., adequacy of the description of NWPA Section 180(c) requirements, including consideration of the adequate level of funding and type of training needed, *see id.* at 93, nor does California provide a link between this information and the sufficiency of the "hard look" at reasonably foreseeable risks in the Repository SEIS. *See LES,* CLI-98-3, 47 NRC at 87-88. Finally, California has not shown that consideration of this information is "material to the findings the NRC must make to support the action that is involved in the proceeding." *See* 10 C.F.R. § 2.309(f)(1)(iv).

Therefore, for the reasons set forth above, CAL-NEPA-20 should be rejected.

CAL- NEPA-21 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION ON THE NATURE AND EXTENT OF THE REPOSITORY'S CUMULATIVE IMPACT ON GROUNDWATER IN THE LOWER CARBONATE AQUIFER

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS or the Repository SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that DOE failed to analyze the cumulative environmental impacts on groundwater in the lower carbonate aquifer.

CAL Petition at 99. CAL-NEPA-21 asserts that the FEIS and FSEIS fail to adequately analyze the nature and extent of the repository's cumulative impact on groundwater in the lower carbonate aquifer. *Id.* CAL-NEPA-21 contends, therefore, that adoption of these two documents by the NRC is not practicable. *Id*.

Staff Response

As discussed below, CAL-NEPA-21 does not comply with 10 C.F.R. § 2.326 and should therefore be rejected on that basis. In addition, CAL-NEPA-21 does not raise a genuine issue of material issue of law or fact with respect to the FEIS, FSEIS, or the Staff's adoption decision. Therefore, CAL-NEPA-21 should be rejected.

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of NEPA-related contentions. These requirements exist in addition to the NRC's generic admissibility requirements for all contentions, located at 10 C.F.R. § 2.309(f)(1). NEPA contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic

Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. at 63,029, 63,031 (Oct. 22, 2008). Section 2.326 requires, in the context of the present proceeding: (1) the issue must be timely raised; (2) the contention "must address a significant safety or environmental issue"; and (3) the contention "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all its NEPA contentions. *See* CAL Petition at 8. California purports to address criterion (2) by its blanket statement that all of its contentions "address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. California purports to address criterion (3) with its statement that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that it, "and the public at large[,] would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* CAL-NEPA-21 also contains a statement that the deficiency it alleges "is significant and, if it were to be addressed in a satisfactory manner, the disclosure of overall impacts on groundwater would be materially different." CAL Petition at 99. However, California has not offered any explanation as to why CAL-NEPA-21 in particular addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's

FEIS, FSEIS, or the Staff's adoption would result based on the information it raises.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. CAL-NEPA-21 alleges that DOE did not comply with NEPA and 10 C.F.R. Part 51 because DOE did not assess the proposed repository's cumulative impact on groundwater in the lower carbonate aquifer. CAL Petition at 99. However, California does not explain why this alleged failure is significant. Nor does California explain how remedying this alleged failure by including the assessment in the FSEIS would paint a "seriously different picture of the environmental landscape" from the current FSEIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). CAL-NEPA-21 does not meet the heightened contention admissibility standards in 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is not admissible. Therefore, CAL-NEPA-21 should be rejected.

In addition, Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the

NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

Here, the affidavit of Jan Stepak set forth the affiant's professional qualifications, notes that the affiant has reviewed the EISs and CAL-NEPA-21, and purports to adopt the factual and technical statements contained within paragraph 5 of CAL-NEPA-21, as well as incorporate certain comments previously submitted to DOE. CAL Petition, Attachment 2, Affidavit of Jan Stepak at 2-3. However, it does not contain any other information or basis for any statements in CAL-NEPA-21. As stated above, paragraph 5 sets forth argument related to what California believes is DOE's failure to adequately assess the impacts of the proposed repository on the lower carbonate aquifer, but no discussion regarding why these impacts are likely to be significant, why the scenario described by California is likely to occur, or why discussion of such impacts would materially change the overall environmental picture. CAL Petition at 100-103. The Staff's submits that the Stepak affidavit is not a legally effective or sufficient affidavit "in support of" CAL-NEPA-21 as 51.109(a)(2) and 2.326 require. Therefore, California has not complied with the sections 51.109(a)(2) and 2.326 requirements to file an affidavit in support of CAL-NEPA-21 and it should be rejected for that reason in addition to those stated above.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the

construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

CAL-NEPA-21 argues that DOE's FEIS and FSEIS do not adequately evaluate the repository's cumulative impact on groundwater in the lower carbonate aquifer below the proposed repository. CAL Petition at 99. CAL-NEPA-21 argues that, therefore, it is not practicable for the NRC to adopt the two EIS documents. *Id. at* 99-100. CAL-NEPA-21 argues that because the lower carbonate aquifer serves as a potential pathway by which radionuclide contamination from the proposed repository could reach Death Valley springs, DOE did not comply with NEPA when it did not adequately address the proposed repository's impacts on the lower carbonate aquifer. *Id*. at 101-103.

However, as the Repository EIS states, "[w]ater from beneath Yucca Mountain could contribute to the Death Valley springs whether or not it reaches the carbonate aquifer in the area of Yucca Mountain." FSEIS, Vol. 3, p. CR-324, Response to Comment – RRR000091/0002. The FSEIS does consider the possibility that groundwater from the proposed repository contaminated with radionuclides could migrate to Death Valley springs, and evaluates those impacts. *Id*; FSEIS Sections 3.1.4.2.1, 5.4. CAL-NEPA-21 does not present any information that would indicate that these impacts would be significantly different if the groundwater in question were to reach Death Valley springs via the lower carbonate aquifer, as opposed to via these other potential sources. Therefore, CAL-NEPA-21 has not demonstrated that the analysis that it urges is material to the adequacy of the EIS under NEPA or 10 C.F.R. Part 51, and CAL-NEPA-21 is therefore inadmissible.

Therefore, for all the foregoing reasons, CAL-NEPA-21 should be rejected.

CAL-NEPA-22 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION OF THE NATURE AND EXTENT OF THE REPOSITORY'S CUMULATIVE IMPACT ON GROUNDWATER IN THE VOLCANIC-ALLUVIAL AQUIFER

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS or the Repository SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that DOE failed to analyze the cumulative environmental impacts on groundwater in the volcanic-alluvial aquifer.

CAL Petition at 105. CAL-NEPA-22 asserts that the FEIS and FSEIS fail to adequately analyze the nature and extent of the repository's cumulative impact on groundwater in the volcanic-alluvial aquifer. *Id.* CAL-NEPA-22 contends, therefore, that adoption of these two documents by the NRC is not practicable. *Id*.

Staff Response

CAL-NEPA-22 raises the same issue raised in NEV-NEPA-20, INY-NEPA-3, and the Staff's EISADR. NEV Petition at 1124; INY Petition at 70; EISADR at 3-10 – 3-11. DOE has undertaken to supplement its existing NEPA environmental impact statements by assessing the proposed repository's impacts on the volcanic-alluvial aquifer. *See* "Supplement to the Environmental Impact Statements for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV," 73 Fed. Reg. 63,463 (Oct. 24, 2008). However, in order to be admissible, CAL-NEPA-22 must still comply with the NRC's generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1) as well as the special requirements applicable to NEPA-related contentions in this proceeding at 10 C.F.R. §§ 51.109(a)(2) and 2.326. As discussed below, CAL-NEPA-22 does not comply with 10 C.F.R. §§ 51.109(a)(2) and 2.326, nor with 10 C.F.R. § 2.309(f)(1)(v), and should therefore be rejected.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R.

§ 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 18, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14), citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criteria, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criteria, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base

its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had [sic] been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's EIS or the Staff's adoption would result based on the information in the contention. Although the Staff's EISADR concluded that additional analysis was needed regarding the proposed repository's cumulative impact on groundwater in the volcanic-alluvial aquifer, and DOE has agreed to supplement its EISs to address these impacts, the Staff's conclusion that further information on or analysis of a subject is necessary does not, standing alone, demonstrate California's compliance with 10 C.F.R. §§ 51.109(a)(2) and 2.326 or support the admissibility of a contention. *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 336-37 (1999). California itself must demonstrate that these requirements are met, and it has not done so.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal

in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.,* quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, CAL-NEPA-22 alleges that DOE did not comply with NEPA and 10 C.F.R. Part 51 because DOE did not assess the proposed repository's cumulative impact on groundwater in the volcanic-alluvial aquifer. CAL Petition at 106. However, California does not explain why this alleged failure is significant. Nor does California explain how remedying this alleged failure by including the assessment in the Repository SEIS would paint a "seriously different picture of the environmental landscape" from the current Repository SEIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006), quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004). In support of CAL-NEPA-22, California merely refers to the Staff's EISADR and the Staff's findings and conclusions therein and asserts that "[t]his deficiency is significant and, if it were to be addressed in a satisfactory manner, the disclosure of overall impacts on groundwater would be materially different." *See* CAL Petition at 106-109. However, as stated above, the Staff's conclusion, standing alone, that more information or discussion on a subject is needed is not sufficient to support the admission of a contention, and certainly not sufficient to meet the heightened requirements applicable to NEPA-related contentions in this proceeding. *Oconee*, CLI-99-11, 49 NRC at 336-337. CAL-NEPA-22 does not meet the heightened contention admissibility standards in

10 C.F.R. §§ 2.326(a) and 51.109(a)(2). Therefore, CAL-NEPA-22 should be rejected.

In addition, Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

Here, the affidavit of Jan Stepak set forth the affiant's professional qualifications, notes that the affiant has reviewed the EISs and CAL-NEPA-22, and purports to adopt the factual and technical statements contained within paragraph 5 of CAL-NEPA-22, as well as incorporate certain comments previously submitted to DOE. CAL Petition, Attachment 2, Affidavit of Jan Stepak at ¶¶ 2-6. However, it does not contain any other information or basis for any statements in CAL-NEPA-22, nor does it establish any personal knowledge of the underlying facts contained within. As stated above, paragraph 5 merely sets forth the findings and conclusions of the Staff's Adoption Decision as it pertains to the proposed

repository's potential impacts on the volcanic-alluvial aquifer. CAL Petition at 106-109. As stated above, this is not sufficient to meet the standards of 10 C.F.R. §§ 51.109(a)(2) and 2.326, nor to support the admissibility of CAL-NEPA-22. *See Oconee*, CLI-99-11, 49 NRC at 336-37. The affidavit does not even indicate that the affiant has reviewed the Adoption Decision. Stepak Affidavit ¶ 4. Only a small portion of the comments purported to be incorporated address groundwater impacts, and they do not address the EISs' analysis of the proposed repository's impacts on the volcanic-alluvial aquifer. Stepak Affidavit, Additional Attachments at 20. In fact, to the extent that these comments mention the volcanic-alluvial aquifer at all, they contradict CAL-NEPA-22 in that they state that "[Death Valley National] Park will be potentially affected by contaminated discharge from the [lower carbonate aquifer] and **not** the volcanic aquifers." *Id.* (emphasis in original). Therefore, California has not complied with the sections 51.109(a)(2) and 2.326 requirements to file an affidavit in support of CAL-NEPA-22 and it should be rejected for that reason in addition to those stated above.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*., CLI-06-10, 63 at 472, quoting *PFS*, LBP-98-7, 47 NRC at 181.

In support of the contention, California does not cite to any documentary evidence other than the Staff's EISADR. As stated above, reference to a Staff position that further information or discussion of a subject is needed is not sufficient, standing alone, to support

the admission and litigation of a contention in this proceeding. *Oconee*, CLI-99-11, 49 NRC at 336-37. In addition, neither the contention nor the Stepak affidavit explains the basis for the opinions contained therein other than to refer to the Staff's position. Accordingly, California has not provided adequate fact or expert opinion support for CAL-NEPA-22 as required by section 2.309(f)(1)(v) and it must therefore be rejected.

Therefore, for all the foregoing reasons, CAL-NEPA-22 should be rejected.

CAL-NEPA-23 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION OF THE NATURE AND EXTENT OF THE REPOSITORY'S CUMULATIVE IMPACT FROM SURFACE DISCHARGE OF GROUNDWATER

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS or the Repository SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that DOE failed to analyze the public health and safety and other environmental impacts from the discharge of potentially contaminated groundwater to the surface.

CAL Petition at 111. CAL-NEPA-23 asserts that the FEIS and FSEIS fail to provide a complete and adequate discussion and analysis of the proposed repository's cumulative impact from the surface discharge of groundwater potentially contaminated with radionuclides and other contaminants from the proposed repository. *Id.* CAL-NEPA-23 contends, therefore, that adoption of these two documents by the NRC is not practicable. *Id*.

Staff Response

CAL-NEPA-23 raises the same issue raised in NEV-NEPA-21, INY-NEPA-4, and the Staff's EISADR. NEV Petition at 1128; INY Petition at 50; EISADR at 3-11 to 3-12. DOE has undertaken to supplement its existing NEPA environmental impact statements by assessing the proposed repository's impacts from the surface discharge of contaminated groundwater. *See* "Supplement to the Environmental Impact Statements for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV," 73 Fed. Reg. 63,463 (October 24, 2008). However, in order to be admissible, CAL-NEPA-23 must still comply with the NRC's generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1) as well as the special requirements applicable to NEPA-related contentions in this proceeding at 10 C.F.R. §§ 51.109(a)(2) and 2.326. As discussed below, CAL-NEPA-23 does not comply with 10 C.F.R. §§ 51.109(a)(2) and 2.326 and should therefore be rejected.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related

to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criteria, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criteria, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete

information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had [sic] been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's EIS or the Staff's adoption would result based on the information in the contention. CAL-NEPA-23 contains the assertion that "[t]his deficiency is significant and, if it were to be addressed in a satisfactory manner, the disclosure of overall impacts on groundwater would be materially different." CAL Petition at 111. However, this assertion is not explained or supported by any other information provided by California or by an expert affidavit. California must demonstrate, not simply state, that the admissibility requirements are met. It has not done so.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "mere showing of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. (internal citation omitted). With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the

proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)). This requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, CAL-NEPA-23 alleges that DOE did not comply with NEPA and 10 C.F.R. Part 51 because DOE did not adequately assess the proposed repository's cumulative impact from the discharge to the surface of contaminated groundwater. CAL Petition at 111. However, California does not explain why this alleged failure is significant. Nor does California explain how remedying this alleged failure by including the assessment in the FSEIS would paint a "seriously different picture of the environmental landscape" from the current FSEIS. *See PFS*, CLI-06-3, 63 NRC at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)). Rather, California references the NRC Staff's Adoption Determination Report and notes that it "agrees with the NRC staff conclusion that the NEPA documents have not provided a complete and adequate discussion of the impacts from surface discharges of contaminated groundwater." CAL Petition at 115. The Staff's conclusion that further analysis on a subject is necessary is not sufficient, standing alone, to demonstrate that the requirements of 10 C.F.R. §§ 51.109(a)(2) or 2.326 are met, nor to support the admissibility of a contention in this proceeding. *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 336-37 (1999). Neither California's assertion, nor anything else provided by California or in the affidavit filed by California, demonstrates that the heightened contention admissibility standards at 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) have been met. Therefore, CAL-NEPA-23 should be rejected.

In addition, Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

Here, the affidavit of Jan Stepek set forth the affiant's professional qualifications, notes that the affiant has reviewed the EISs and CAL-NEPA-23, and purports to adopt the factual and technical statements contained within paragraph 5 of CAL-NEPA-23, as well as incorporate certain comments previously submitted to DOE. CAL Petition, Attachment 2, Affidavit of Jan Stepek ¶ 2-6. However, it does not contain any other information or basis for any statements in CAL-NEPA-23. As stated above, paragraph 5 sets forth the findings and conclusions of the Staff's EISADR as it pertains to the proposed repository's potential impacts due to the surface discharge of contaminated groundwater. CAL Petition at 112-115. As stated above, this is not sufficient to demonstrate that the requirements of 10 C.F.R.

§§ 51.109(a)(2) and 2.326 are met. *See Oconee*, CLI-99-11, 49 NRC at 336-37. In addition, the Stepek affidavit does not even list the EISADR as a document that the affiant has reviewed and is familiar with. Stepek Affidavit ¶ 4. The Staff submits that the Stepek affidavit is not an effective or sufficient affidavit "in support of" CAL-NEPA-23 as 51.109(a)(2) and 2.326 require. Therefore, California has not complied with the sections 51.109(a)(2) and 2.326 requirements to file an affidavit in support of CAL-NEPA-23 and it should be rejected for that reason in addition to those stated above.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of the contention, California cites to the Staff's EISADR. As stated above, reference to a Staff position that further information or discussion of a subject is needed is not sufficient, standing alone, to support the admission and litigation of a contention in this proceeding. *Oconee*, CLI-99-11, 49 NRC at 336-37. Although CAL-NEPA-23 is based on an expert opinion that the EISs are insufficient for failure to adequately address the impacts of the surface discharge of contaminated groundwater, no basis is given for that opinion, as is required by 10 C.F.R. § 2.309(f)(1)(v). *USEC*, CLI-06-10, 63 NRC at 472. Accordingly,

California has not provided adequate fact or expert opinion support for CAL-NEPA-23 as required by section 2.309(f)(1)(v) and it must therefore be rejected.

Therefore, for all the reasons set forth above, CAL-NEPA-23 should be rejected.

CAL-NEPA-24 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION OF THE NATURE AND EXTENT OF THE NECESSARY MITIGATION AND REMEDIATION MEASURES FOR RADIONUCLIDES SURFACING AT ALKALI FLAT/FRANKLIN LA PLAYA

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS or the Repository SEIS, as is required by 10 C.F.R. § 51.109(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R. part 51, in that DOE failed to analyze the necessary mitigation and remediation measures to protect the public health and safety and other environmental impacts from radionuclides surfacing within California.

CAL Petition at 116. CAL-NEPA-24 asserts that the FEIS and FSEIS fail to provide a complete and adequate discussion and analysis of mitigation and remediation measures to protect public health and safety and other environmental impacts from radionuclides surfacing within California. *Id.* California argues that the two EIS documents do not adequately address the potential for radionuclides to travel through the Armargosa River Drainage and, instead, defer remediation and mitigation planning to such time that "any unusual conditions in groundwater" is detected. *Id.* California contends, therefore, that adoption of these two documents by the NRC is not practicable. *Id*.

Staff Response

CAL-NEPA-24 raises the same issue raised in INY-NEPA-5. INY Petition at 57. As discussed below, CAL-NEPA-24 does not comply with 10 C.F.R. §§ 51.109(a)(2) and 2.326. In addition, as discussed below, CAL-NEPA-24 does not raise a genuine dispute regarding the application and/or represents an impermissible challenge to Commission regulations. 10 C.F.R. §§ 2.335, 2.309(f)(1)(vi). Therefore, CAL-NEPA-24 must be rejected.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to

adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had [sic] been assured that NRC was basing its licensing

decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id*. However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's EIS or the Staff's adoption would result based on the information in the contention.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 67 NRC at __ (Nov. 6, 2008) (slip op. at 16). A "mere showing of a possible" error is not enough to satisfy the motion to reopen standard. Id. (internal citation omitted). With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, CAL-NEPA-24 alleges that DOE did not comply with NEPA and 10 C.F.R. Part 51 because DOE did not adequately assess mitigation and remediation measures for radionuclides surfacing at locations within California. CAL Petition at 116. However, California does not explain why this alleged failure is significant. Nor does California explain how remedying this alleged failure by including the assessment in the EIS documents would paint a “seriously different picture of the environmental landscape" from the existing EIS documents. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (internal citation omitted). California’s discussion in support of CAL-NEPA-24 is limited to a discussion about why California believes DOE was required to consider mitigation and remediation measures and has failed to adequately do so, but does not make any demonstration, nor even argument, that the issue raised is a significant one or that consideration of the mitigation and remediation measures would materially alter the results of the EISs or the Staff’s Adoption Decision. CAL Petition at 117-121. Accordingly, California has not demonstrated that the heightened admissibility requirements for NEPA-related contentions at 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) have been met. Therefore, CAL-NEPA-24 should be rejected.

In addition, Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (citing *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed

information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

Here, the affidavit of Jan Stepak sets forth the affiant's professional qualifications, notes that the affiant has reviewed the EISs and CAL-NEPA-24, and purports to adopt the factual and technical statements contained within paragraph 5 of CAL-NEPA-24, as well as incorporate certain comments previously submitted to DOE. CAL Petition, Attachment 2, Affidavit of Jan Stepak at 2-3. However, it does not contain any other information or basis for any statements in CAL-NEPA-24. As stated above, paragraph 5 sets forth argument related to what California believes is DOE's legal obligation to consider mitigation and remediation measures, but no discussion regarding why these measures or the impacts they address would be significant or why discussion of such mitigation and remediation measures would materially change the overall environmental picture. CAL Petition at 117-121. The Staff submits that the Stepak affidavit is not an effective or sufficient affidavit "in support of" CAL-NEPA-24 as 51.109(a)(2) and 2.326 require. Therefore, California has not complied with sections 51.109(a)(2) and 2.326 requirements to file an affidavit in support of CAL-NEPA-24 and it should be rejected for that reason in addition to those stated above.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

Here, while CAL-NEPA-24 alleges that DOE has failed to address mitigation and remediation measures related to radionuclides surfacing at locations within California, California has not demonstrated that such analysis is legally required or that it would appreciably alter the environmental landscape. This is insufficient to raise a genuine issue of material law or fact.

Additionally, CAL-NEPA-24 appears to assert that DOE has improperly deferred its mitigation analysis by failing to include its emergency plan in the LA. CAL Petition at 119-120. This argument is problematic for several reasons. First, it is not clear that the requirements regarding its emergency plan to deal with radiological accidents are relevant to whether the FEIS and FSEIS contain an adequate analysis of mitigation and remediation measures for radionuclides surfacing, via groundwater transport, to locations within Inyo County, which is the subject of CAL-NEPA-24. NEPA's requirement to assess and discuss the environmental impacts of a proposed action is procedural in nature and independent of the requirement to prepare an emergency plan to deal with radiological accidents. Therefore, this assertion, and, consequently, CAL-NEPA-24, fails to raise a genuine dispute regarding the application. Second, to the extent that CAL-NEPA-24 contends that DOE's LA is deficient for its failure to include a full emergency plan, CAL-NEPA-24 seeks to impose a requirement in addition to that mandated by 10 C.F.R. § 63.21(c)(21), which requires that the license application include "a description of" the emergency plan," and 10 C.F.R. § 63.161, which requires that DOE "shall develop and be prepared to implement a plan to cope with

radiological accidents . . . at any time before permanent closure," and therefore represents an impermissible challenge to those regulations in the guise of a NEPA contention. *See* 10 C.F.R. § 2.335; *see also Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-87-12, 26 NRC 383, 395 (1987); *Florida Power and Light Co.* (Turkey Point Nuclear Generating Station, Units 3 and 4), LBP-01-6, 52 NRC 138, 159 (2001). This argument therefore is both wholly irrelevant to the subject of CAL-NEPA-24 and presents an impermissible challenge to Commission regulations.

Therefore, for the reasons set forth above, CAL-NEPA-24 should be rejected.

CAL-NEPA-25 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION OF THE NATURE AND EXTENT OF THE REPOSITORY'S CUMULATIVE IMPACTS FROM GROUNDWATER PUMPING

> It is not practicable for NRC to adopt DOE's Yucca Mountain FEIS or the Repository SEIS, as is required by 10 C.F.R. § 51.09(c), because they are incomplete and inadequate pursuant to NEPA and NRC regulations at 10 C.F.R part 51, in that DOE failed to analyze the repository's cumulative environmental impacts from groundwater pumping.

CAL Petition at 122. In support of CAL-NEPA-25, California asserts that the FEIS and FSEIS fail to provide a complete and adequate analysis of the impacts of groundwater pumping and the effects that such pumping could have on the upward gradient in the lower carbonate aquifer. *Id.* Specifically, California argues that future groundwater pumping in the vicinity of the proposed repository could reduce or eliminate the upward gradient that, under current conditions, would prevent radionuclide contamination from the proposed repository from reaching the lower carbonate aquifer. *Id.* at 122-126. California further argues that elimination of this upward gradient would allow radionuclide contamination from the proposed repository to reach the lower carbonate aquifer and to migrate, via the lower carbonate aquifer, to locations in California. *Id.* California contends that because the EISs fail to address this possibility, adoption of these two documents by the NRC is not practicable. *Id*. CAL-NEPA-25 is similar to CAL-NEPA-21 as well as INY-NEPA-1 and INY-NEPA-2 in that all four contentions argue that future groundwater pumping could eliminate the upward gradient and allow radionuclides to enter the lower carbonate aquifer.

Staff Response

As discussed below, CAL-NEPA-25 does not comply with the requirements of 10 C.F.R. §§ 51.109(a)(2) and 2.326. In addition, CAL-NEPA-25 does not comply with the requirements of 10 C.F.R. § 2.309(f)(1)(iv) and (v). Accordingly, CAL-NEPA-25 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, California purports to address the § 2.326 standards generically for all contentions. CAL Petition at 8. California's petition was filed within the 60 day time period established by the Notice of Hearing and, therefore, is timely in accordance with § 2.326(a)(1). *Id*. In order to meet the second criterion, California argues that all of its "contentions address significant safety or environmental issues, as described in detail in each of the contentions." *Id*. In reference to the third criterion, California argues that "had DOE included in its environmental analysis the information that California's contentions state is lacking, a materially different

result would be or would have been likely in that NRC would have had more complete information, and, more specifically, information that complies with NEPA, upon which to base its decision on the license application." *Id*. In addition, California states that the State "and the public at large would have had been assured that NRC was basing its licensing decision on adequate environmental review and would have had the opportunity to comment and contribute to the same." *Id.* However, California has not offered any explanation as to why any particular individual contention addresses a significant safety or environmental issue or demonstrates that a materially different result with regard to DOE's EIS or the Staff's adoption would result based on the information in the contention, beyond asserting, without any support or explanation, that these requirements are met. CAL Petition at 122. This is insufficient to satisfy 10 C.F.R. §§ 51.109(a)(2) and 2.326.

Nor can it be implied from this contention itself that the issue California raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "mere showing of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. (internal citation omitted). With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee*

for the New River, Inc. v. Fed. Energy Regulatory Comm'n, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This requires more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, CAL-NEPA-25 alleges that DOE did not comply with NEPA and 10 C.F.R. part 51 because DOE did not adequately assess the "repository's cumulative environmental impacts from groundwater pumping." CAL Petition at 122. However, California does not explain why this alleged failure is significant. Nor does California explain how remedying this alleged failure by including the assessment in the EIS documents would paint a "*seriously* different picture of the environmental landscape" from the existing EIS documents. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (emphasis in original) (internal citation omitted). California's discussion in support of CAL-NEPA-25 is limited to a discussion about how California believes DOE failed to consider the possibility that groundwater pumping in the future could allow radionuclide contamination from the proposed repository to reach the lower carbonate aquifer and, via the aquifer, locations in California, but does not make any demonstration, nor even argument, that the issue raised is a significant one or that consideration of these impacts would materially alter the results of the EISs or the Staff's Adoption Decision. CAL Petition at 121-126. Accordingly, California has not demonstrated that the heightened admissibility requirements for NEPA-related contentions at 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) have been met. Therefore, CAL-NEPA-25 must be rejected.

In addition, Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that California has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting

affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

Here, the affidavit of Jan Stepak set forth the affiant's professional qualifications, notes that the affiant has reviewed the EISs and CAL-NEPA-25, and purports to adopt the factual and technical statements contained within paragraph 5 of CAL-NEPA-25, as well as incorporate certain comments previously submitted to DOE. CAL Petition, Attachment 2, Affidavit of Jan Stepak at 2-3. However, it does not contain any other information or basis for any statements in CAL-NEPA-25. As stated above, paragraph 5 sets forth argument related to what California believes is DOE's failure to adequately assess the cumulative impacts of groundwater pumping, but no discussion regarding why these impacts are likely to be significant or why discussion of such impacts would materially change the overall "picture of the environmental landscape," as is required. CAL Petition at 122-126. The Staff submits that the Stepak affidavit is not a sufficient affidavit in support of CAL-NEPA-25 as 51.109(a)(2) and 2.326 require. Therefore, California has not complied with the sections 51.109(a)(2) and 2.326 requirements to file an affidavit in support of CAL-NEPA-25 and it should be rejected for that reason in addition to those stated above.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, including the Repository SEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

California alleges that DOE has failed to analyze the “repository’s cumulative environmental impacts from groundwater pumping.” CAL Petition at 122. However, California does not explain why this analysis is required. Although federal agencies are required to take a "hard look" at the potential environmental consequences of proposed actions in their NEPA analyses, *see, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992), the requirement is tempered by a "rule of reason." *Id.*; *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine remote and speculative impacts. *LES*, LBP-06-08, 63 NRC at 258. (internal quotation omitted).

California has not established that the impact of groundwater pumping as it describes is a reasonably foreseeable impact whose analysis is required at this time in order for DOE to meet its NEPA obligations. Although California alleges that future groundwater pumping could eliminate the upward gradient and thus allow radionuclide contamination to reach the lower carbonate aquifer and, eventually, locations in California, California offers only its speculation that “local and regional groundwater pumping…could reduce or eliminate the

upper [sic] gradient," with no explanation or basis for why this would be the case. CAL Petition at 125. Nor does the Jan Stepak affidavit, or the comments it purports to incorporate by reference, set forth any basis for concluding that the impacts that are the subject of CAL-NEPA-25 are reasonably foreseeable. California has therefore not demonstrated that the impacts it alleges should have been considered by DOE are anything other than remote and speculative and, therefore, not required to be considered under NEPA. Nor has California demonstrated that such an analysis is required for the NRC to make the finding required by 10 C.F.R. § 63.31(c) prior to issuing a construction authorization. CAL-NEPA-25 does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

As stated above, California has not supported its assertions in CAL-NEPA-25 with fact or expert opinion. The contention makes assertions relating to potential effects of radionuclide contamination (e.g. impacts to pupfish and to public health), but offers no independent information to bound these impacts or show how they might differ from DOE analyses.

Rather, it appears that the contention rests solely on the opinion of Jan Stepak, and the comments purported to be incorporated therein, that DOE has not adequately addressed this issue. However, neither it nor the contention explains the basis for the stated opinion that future groundwater pumping "could reduce or eliminate the upper [sic] gradient," the *sine qua non* of CAL-NEPA-25. Accordingly, California has not provided adequate support for CAL-NEPA-25 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

Therefore, for all of the reasons stated above, CAL-NEPA-25 should be rejected.

CHS-NEPA-01 CALIENTE HOT SPRINGS RESORT -NEPA -IMPACTS ON LAND USE AND OWNERSHIP

> The DOE Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (July 2008)[68] (at 6-32), hereinafter referred to as the "Final SEIS", acknowledges that construction and operation of the proposed Caliente rail line would "adversely affect" the Caliente Hot Springs Resort (Final SEIS at 6-33), but defers the full analysis of impacts required under NEPA until some future date under a "longer-term, iterative process" proposed in Section 7.1 of the Final Environmental Impact Statement for a Rail Alignment, DOE/EIS 0369 (June 2008), incorporated by reference in the Final SEIS at 9-13, and hereinafter referred to as the "RA FEIS" *10 C.F.R. § 2.309(f)(1)(i): Specific Statement of the Legal or Factual Issue*

CHS Petition at 1. CHS-NEPA-01 contends that DOE's July 2008 Final SEIS fails to fully evaluate the impacts of construction and operation of the proposed Caliente rail line on the Caliente Hot Springs Resort (Resort). *Id.* at 4.

Staff Response

As discussed below, this issue is outside the scope of the present proceeding, because the sufficiency of DOE's evaluation of the impacts of the proposed Caliente rail line has already been determined. In addition, the contention does not include any supporting affidavits and it fails to address the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, CHS-NEPA-01 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to

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[68] The Repository SEIS was published in June 2008.

adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Proponents of a reopening motion bear the burden of meeting all of the requirements. *Id.* at 13-14. Section 2.326(b) also requires supporting affidavits that set forth the factual and/or technical bases for the petitioner's claim that the criteria of paragraph (a) of Section 2.326(b) have been satisfied. *See Amergen Energy Co. LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (November 6, 2008) (slip op. at 13). "Section 2.326(b) requires motions to reopen to be accompanied by affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant safety issue, together with evidence that satisfies our admissibility standards." *Id.* at 16

Without such a detailed discussion, the statements in the contention amount to "[b]are assertions and speculations" and are not sufficient to support a showing that the issue raised in the contention is significant or, if true, would result in a material difference in the environmental analysis. *See Oyster Creek,* CLI-08-28, 68 NRC at __ (slip op. at 22). Since CHS-NEPA-01 does not include any affidavits, Caliente Resort has not met the motion to reopen requirements of 10 C.F.R. § 2.326. On this basis, the contention is inadmissible.

In addition, nothing in the contention indicates that Caliente Resort has raised a significant safety or environmental issue or has demonstrated that a materially different result

would have been likely. Caliente Resort asserts that under DOE's analysis the Caliente rail line would run

> over the top of the Caliente Geothermal Field and Caliente Hot Springs Resort property, and through the very center of the populace of Caliente, Nevada, without: (a) DOE having considered and reported the impacts to or risks associated with the Caliente Geothermal Field and the full risks and impacts to the Caliente Hot Springs Resort and the 1,000 people residing in Caliente, Nevada; (b) without DOE making a full and adequate comparison of the Eccles Alternative Segment; and (c) without DOE compliance with EPA requirements concerning a detailed compensatory habitat restoration plan. Nowhere does Caliente Resort provide details of the reasons for its position or assert that a different result would have occurred as the result of consideration of these issues.

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that "the issue raised is within the scope of the proceeding." 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. Duke Power Co. (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); PPL Susquehanna LLC (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). The scope of the proceeding on DOE's application to seek a construction authorization for a geologic repository at a geologic repository operations area at Yucca Mountain is limited to contested safety, security, or technical issues. High-Level Waste Repository, CLI-08-25, 67 NRC at __ (slip op. at 9). The Commission's regulations in 10 C.F.R. Part 63 and the environmental regulations related to a construction authorization for a geologic repository under 10 C.F.R. Part 51 detail the specific matters that must be considered for the construction authorization to be granted. Although the Notice of Hearing stated that issues related to the sufficiency of DOE's NEPA analysis are within the scope of the proceeding, some such issues have already undergone judicial review.

Nevada previously challenged the sufficiency of DOE's rail corridor alternatives in the 2002 FEIS. Nevada v. U.S. Dep't of Energy, 457 F.3d 78, 92-93 (D.C. Cir. 2006). Nevada alleged that DOE did not take a sufficient "hard look" at the environmental consequences of each of the five alternatives considered in the 2002 FEIS. Id. The court of appeals found DOE's alternative analysis adequate, noting that the analysis of each of the five alternatives in the 2002 FEIS included "more than twelve different environmental factors: land use, air quality, hydrology, biological resources and soils, cultural resources, occupational and public health and safety, socioeconomic factors, noise and vibration, aesthetics, utilities, energy and material, wastes and environmental justice." Id. at 93. The court of appeals further found that "DOE's selection of the Caliente Corridor therefore was not arbitrary or capricious." Id.

Caliente Resort now seeks to challenge DOE's alternatives analysis in the Rail Alignment EIS, which considered in detail only the Caliente and Mina corridors. However, as discussed above, the court of appeals already determined that DOE adequately considered five alternatives in the 2002 FEIS and that DOE properly selected the Caliente corridor as the preferred alternative. CHS-NEPA-01 does not raise any new consideration that would differentiate the current contention from the issue previously litigated by Nevada.

The sufficiency of DOE's rail corridor analysis is not within the scope of the proceeding before the NRC. For this reason, CHS-NEPA-01 should be rejected for failure to raise an issue that its within the scope of the proceeding as required by 10 C.F.R. § 2.309(f)(1)(iii).

CLK-NEPA-001 – THE DOE FAILS TO EVALUATE IMPACTS ON EMERGENCY MANAGEMENT AND PUBLIC SAFETY

> DOE's final Supplemental Environmental Impact Statement ("FEIS") fails to provide meaningful analyses concerning the effects on emergency management and public safety impacts on Clark County associated with the siting of a high level radioactive waste and spent nuclear fuel repository, in violation of the NWPA and NEPA and their respective implementing regulations.

CLK Petition at 91. Clark County contends that NEPA requires lead agencies to provide an effective emergency management system including an assessment of emergency preparedness and response personnel and standards. *Id.* (internal citation omitted). The County argues that failure to include impacts on emergency management and public safety of Clark County renders the FSEIS inadequate. *See id.* at 91, 95.

Staff Response

As discussed further below, CLK-NEPA-001 does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2). In addition, the contention does not meet the contention admissibility criteria of 10 C.F.R. § 2.309(f)(1). For these reasons, the Staff opposes admission of CLK-NEPA-001.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The

motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape.'" *Id*. (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

CLK-NEPA-001 fails to address the motion to reopen criteria in 10 C.F.R. § 2.326(a), and is inadmissible on this basis alone. As discussed below, Clark County states without supporting references that the proposed action will have a “significant impact” on Clark

County's emergency resources and capacity. *See* CLK Petition at 93. Clark County does not provide any information to indicate that this raises a significant safety or environmental issue as required by 10 C.F.R. § 2.326(a)(2). In addition, CLK-NEPA-001 does not demonstrate that if impacts on Clark County's emergency resources and capacity had been considered, that would have or would likely have rendered a materially different result "such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *See PFS,* CLI-06-3, 63 NRC at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Clark County does not argue, nor does it show that if the impact on the County's emergency resources and capacity had been considered, that it would "paint a 'seriously different picture of the environmental landscape.'" *See id.* Without further detail and analysis, the contention does not meet the "deliberately heavy" evidentiary burden set by the motion to reopen criteria. *See Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 22). Therefore, because Clark County has not satisfied the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2), CLK-NEPA-001 is inadmissible. In addition, as discussed below, CLK-NEPA-001 also fails to satisfy 10 C.F.R. § 2.309(f)(1)(v).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

A contention must include a concise statement of the alleged facts or expert opinion supporting the position taken in the contention. 10 C.F.R. § 2.309(f)(1)(v). Bare assertions and speculation are not sufficient to support the admission of a contention. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Even experts must provide a reasoned basis or explanation for their conclusions. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

Here, Clark County states that "NEPA, in conjunction with the Council on Environmental Quality ("CEQ") policy, requires the lead agency for a proposed federal undertaking to provide an effective emergency management system ("EMS") inclusive of an assessment of emergency preparedness and response personnel and standards." CLK Petition at 91. To support this assertion, Clark County does not cite to NEPA or CEQ's policy, instead it references the NRC's regulations at 10 C.F.R. § 51.91 and 10 C.F.R. Part 51, Subpart A, Appendix A, neither of which refer to an "emergency management system." *See id.* at 91 n.103. Clark County has failed to explain why the NRC's regulations provide a basis for its assertion stating that CEQ policy requires an effective EMS. *See Fansteel*, CLI-03-13, 58 NRC at 203. Thus, Clark County has not provided support for its assertion that NEPA requires lead agencies to provide an "effective management system" that includes emergency preparedness and response personnel and standards. *See* 10 C.F.R. § 2.309(f)(1)(v).

In addition, Clark County makes a number of assertions that do not support admission of this contention. To support this contention, Clark County submitted the affidavit of Dr. Mushkatel. *See* CLK Petition, Attachment 1, Affidavit of Dr. Alvin Mushkatel at ¶8. However, neither Dr. Mushkatel's affidavit nor the contention explains the basis for Dr. Mushkatel's opinions and conclusions, as required. *See USEC*, CLI-06-10, 63 NRC at 472 (internal citation omitted). For example, Clark County states, without supporting references, that the proposed action "will have a significant impact on Clark County's emergency management and safety systems . . ." CLK Petition at 93; *see also id.* at 95. Clark County does not provide a basis for this statement and does not explain what this impact will be or why it will be significant.

Similarly, Clark County asserts that evaluating emergency response capability and safety needs "is essential to obtaining an accurate assessment as to whether such safety *can* be provided to the public," CLK Petition at 93 (emphasis in original), and that this information

should have been included "as part of a reasonable effort to identify impacts to Clark County's emergency management and safety systems, and whether such impacts can be avoided or mitigated." *See id.* at 95. Clark County does not show that this analysis is essential, why this is required for a "reasonable effort to identify impacts," or why the analysis in the FSEIS is not reasonable. Absent support or a reasoned basis, these assertions cannot support the admission of this contention. *USEC,* CLI-06-10, 63 NRC at 472 (internal citation omitted).

Consequently, for the reasons set forth above, CLK-NEPA-001 should be rejected for failure to comply with 10 C.F.R. §§ 2.326, 51.109, and 2.309(f)(1)(v).

CLK-NEPA-002 - THE DOE FAILS TO ANALYZE KNOWN AND FEASIBLE RAIL CORRIDOR ALTERNATIVES

> The DOE's evaluation of rail corridors is patently deficient in its failure to evaluate known alternatives to the Caliente Rail Corridor. The Rail EIS evaluates only two of five feasible known rail corridors, The Caliente Corridor and The Mina Rail Corridor, ultimately coining the Caliente Corridor as the "preferred alternative" to the Mina Rail Corridor. The DOE's analysis sets up a false choice between a feasible and non-feasible corridor, and to the exclusion of the consideration of three additional feasible corridors.

CLK Petition at 96. CLK-NEPA-002 alleges that DOE's alternatives analysis did not include sufficient discussion of rail corridor alternatives. *Id*.

Staff Response

As discussed further below, this issue is outside the scope of the present proceeding and is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1). In addition, the contention does not address the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, CLK-NEPA-002 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue

must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Clark County has not addressed any of the motion to reopen criteria in 10 C.F.R. § 2.326. On this basis, this contention is inadmissible. Moreover, nothing in the contention infers that Clark County has raised a significant safety or environmental issue or has demonstrated that a materially different result would have been likely. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id*. (quoting *National Committee for the New River, Inc.*

v. Fed. Energy Regulatory Comm'n, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, Clark County argues that DOE should have considered additional alternatives to the Caliente Rail Corridor. However, as discussed further below, the scope of DOE's rail corridor alternatives analysis has already been found adequate on judicial review. Clark County raises no new information that would call into question the court's prior decision. Therefore, Clark County has not made the showing required by 10 C.F.R. § 2.326(a). For this reason, CLK-NEPA-002 is inadmissible. In addition, as discussed further below, the contention does not meet all the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that “the issue raised is within the scope of the proceeding.” 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). The scope of the proceeding on DOE’s Application to seek a construction authorization for a geologic repository at a geologic repository operations area at Yucca Mountain is limited to contested safety, security, or technical issues. *High-Level Waste Repository*, CLI-08-25, 67 NRC at __ (slip op. at 9). The Commission’s regulations in 10 C.F.R. Part 63 and the environmental regulations related to a construction authorization for a geologic repository under 10 C.F.R. Part 51 detail the specific matters that must be considered for the construction authorization to be granted. Although the Notice of Hearing

stated that issues related to the sufficiency of DOE's NEPA analysis are within the scope of the proceeding, some such issues have already undergone judicial review.

Nevada previously challenged the sufficiency of DOE's rail corridor alternatives analysis in the FEIS. *Nevada v. U.S. Dep't of Energy*, 457 F.3d 78, 92-93 (D.C. Cir. 2006). Nevada alleged that DOE did not take a sufficient "hard look" at the environmental consequences of each of the five alternatives considered in the 2002 EIS. *Id.* The court of appeals found DOE's alternative analysis adequate, noting that the analysis of each of the five alternatives in the 2002 EIS included "more than twelve different environmental factors: land use, air quality, hydrology, biological resources and soils, cultural resources, occupational and public health and safety, socioeconomic factors, noise and vibration, aesthetics, utilities, energy and material, wastes and environmental justice." *Id.* at 93. The court of appeals further found that "DOE's selection of the Caliente Corridor therefore was not arbitrary or capricious." *Id.*

Clark County now seeks to challenge DOE's alternatives analysis in the Rail Alignment EIS, which considered in detail only the Caliente and Mina corridors. CLK Petition at 96. Clark County further claims that, because the Mina corridor was ultimately not available, there was no real choice between the two alternatives, and, therefore DOE's alternatives analysis was deficient. *Id.* The contention also suggests the DOE should have considered one of the remaining three alternatives already discussed in the 2002 EIS. *Id.* However, as discussed above, the court of appeals already determined that DOE adequately considered all five alternatives in the 2002 EIS and that DOE properly selected the Caliente corridor as the preferred alternative. Clark County does not raise any new consideration that would differentiate the current contention from the issue previously litigated by Nevada.

The sufficiency of DOE's alternatives analysis for the rail corridor is not within the scope of the proceeding before the NRC. For this reason, CLK-NEPA-002 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of this contention, Clark County cites to no documentary factual evidence. Therefore, it appears that Clark County relies entirely on an affidavit from Sheila Conway, Ph.D. However, neither Dr. Conway's affidavit nor the contention explains the basis for Dr. Conway's opinions, as required. CLK-NEPA-002 is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(vi). For this reason, the contention is inadmissible.

CLK-NEPA-003 - THE DOE IGNORES SOCIO-ECONOMIC IMPACTS

> The DOE ignored data and wrongly dismissed analyses of stigma related socioeconomic impacts resulting from the perceived and actual risks associated with potential accidents during the course of transporting high level nuclear waste. The DOE's assertion in the EIS that the relevant impacts of the Caliente Rail Corridor as the "preferred alternative" on property values and tourism cannot be measured and thus are irreducible ignores evidence and data proffered by Clark County.

CLK Petition at 101. CLK-NEPA-003 alleges that DOE's alternatives analysis did not include sufficient discussion of rail corridor alternatives, specifically with respect to socio-economic impacts. *Id*.

Staff Response

As discussed further below, this issue is outside the scope of the present proceeding, because the sufficiency of DOE's alternatives has already been determined. In addition, the contention does not address the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For these reasons, CLK-NEPA-003 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a

significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits that set forth the factual and/or technical bases for the petitioner's claim that the criteria of paragraph (a) of this section have been satisfied. *See Amergen Energy Co. LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (November 6, 2008) (slip op. at 13). "Section 2.326(b) requires motions to reopen to be accompanied by affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant safety issue, together with evidence that satisfies our admissibility standards." *Id.* at 16. Proponents of a reopening motion bear the burden of meeting all of the requirements. *Id.* at 13-14.

Here, although Clark County has included an affidavit in support of this contention, CLK-NEPA-003 does not address any of the motion to reopen criteria in 10 C.F.R. § 2.326. On this basis alone, this contention is inadmissible.

In addition, nothing in the contention indicates that Clark County has raised a significant safety or environmental issue or has demonstrated that a materially different result would have been likely. As discussed further below, CLK-NEPA-003 is also inadmissible because the issue raised in the contention is outside the scope of the proceeding.

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that "the issue raised is within the scope of the proceeding." 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 23 (2007). The scope of the proceeding on DOE's Application to seek a construction authorization for a geologic repository at a geologic repository operations area at Yucca

Mountain is limited to contested safety, security, or technical issues. *High-Level Waste Repository*, CLI 08-25, 67 NRC at _ (slip op. at 9). The Commission's regulations in 10 C.F.R. Part 63 and the environmental regulations related to a construction authorization for a geologic repository under 10 C.F.R. Part 51 detail the specific matters that must be considered for the construction authorization to be granted. Although the Notice of Hearing stated that issues related to the sufficiency of DOE's NEPA analysis are within the scope of the proceeding, some such issues have already undergone judicial review.

Nevada previously challenged the sufficiency of DOE's rail corridor alternatives in the 2002 FEIS. *Nevada v. U.S. Dep't of Energy*, 457 F.3d 78, 92-93 (D.C. Cir. 2006). Nevada alleged that DOE did not take a sufficient "hard look" at the environmental consequences of each of the five alternatives considered in the 2002 FEIS. *Id.* The court of appeals found DOE's alternative analysis adequate, noting that the analysis of each of the five alternatives in the 2002 FEIS included "more than twelve different environmental factors: land use, air quality, hydrology, biological resources and soils, cultural resources, occupational and public health and safety, <u>socioeconomic factors</u>, noise and vibration, aesthetics, utilities, energy and material, wastes and environmental justice." *Id.* at 93. (Emphasis added) The court of appeals further found that "DOE's selection of the Caliente Corridor therefore was not arbitrary or capricious." *Id.*

Clark County now seeks to challenge DOE's alternatives analysis in the Rail Alignment EIS, which considered in detail only the Caliente and Mina corridors. The county asserts that DOE's failure to evaluate the impacts of alternative routes to identify the socio-economic impacts of each, violates the requirements of 10 C.F.R. § 51.91(c) to identify alternatives. CLK Petition at 101. However, as discussed above, the court of appeals already determined that DOE adequately considered five alternatives in the 2002 FEIS and that DOE properly selected the Caliente corridor as the preferred alternative. Clark County does not raise any new consideration that would differentiate the current contention from the issue previously

litigated by Nevada.

Therefore, the sufficiency of DOE's rail corridor analysis is not within the scope of the proceeding before the NRC. For this reason, CLK-NEPA-003 should be rejected for failure to raise an issue that its within the scope of the proceeding as required by 10 C.F.R. § 2.309(f)(1)(iii).

INY-NEPA-1 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION OF THE NATURE AND EXTENT OF THE REPOSITORY'S DIRECT AND CUMULATIVE IMPACTS OF GROUNDWATER IN THE LOWER CARBONATE AQUIFER

> This Commission should not adopt DOE's Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, February 2002, ("Final EIS") or DOE's 2008 Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, June 2008, ("Final EIS") as is required by 10 CFR 51.109(c) because they are incomplete and inadequate pursuant to National Environmental Policy Act ("NEPA") and NRC regulations at 10 CFR 51, because those documents do not analyze the direct and cumulative environmental impacts of the proposed repository on groundwater in the lower carbonate aquifer.

INY Petition at 16. INY-NEPA-1 alleges that DOE's FEIS and FSEIS are inadequate because neither document adequately discusses the proposed repository's direct and cumulative impacts on groundwater in the lower carbonate aquifer. Inyo County contends that because of these deficiencies, these two documents do not meet the NEPA's requirements, nor those of the NRC's NEPA-implementing regulations at 10 C.F.R. Part 51. *Id.* Inyo County therefore asserts that the FEIS and FSEIS cannot be adopted by the NRC. *Id.*

Staff Response

Because INY-NEPA-1 does not comply with 10 C.F.R. §§ 51.109(a)(2) and 2.326 and because it has not demonstrated that it has raised a material issue and is not adequately supported by facts or expert opinion, as required by 10 C.F.R. §§ 2.309(f)(1)(iv) and (v), INY-NEPA-1 should be rejected.

10 C.F.R. § 51.109(a)(2) sets forth standards for the admission of NEPA-related contentions. These criteria are in addition to those that must be satisfied for all contentions, found at 10 C.F.R. § 2.309(f)(1). Part 51 requires that contentions be accompanied by "one

or more affidavits which set forth factual and/or technical bases for the claim that … it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The section 2.326 criteria, in the context of this proceeding, are: (1) the issue must be timely raised; (2) the contention "must address a significant safety or environmental issue"; and (3) the contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14), citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990). Section 2.326(b) also requires that affidavits support the contention.

Here, INY-NEPA-1 fails to address any of the mandatory requirements of §§ 51.109 and 2.326 in its text or supporting affidavits. Inyo County asserts that "[r]ecent research conducted for Inyo County" showing "a dramatic drawdown in both the volcanic-alluvial aquifer and the carbonate aquifer…is a significant new consideration that renders the NEPA documents inadequate." INY Petition at 18. However, INY-NEPA-1 never demonstrates, or even argues, that the issue that it raises is a "significant safety or environmental issue" as required by 10 C.F.R. § 2.326. In addition, INY-NEPA-1 asserts, without explanation, that the deficiency it alleges "is significant and, if it were to be addressed in a satisfactory manner, the disclosure of overall impacts on groundwater would be materially different." INY

Petition at 25. These conclusory and unsupported assertions, standing alone, do not satisfy the requirements of 10 C.F.R. § 2.326.

Nor can it be inferred from this contention itself that the issue Inyo County raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. 63 NRC at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, INY-NEPA-1 alleges that DOE did not comply with NEPA and 10 C.F.R. part 51 because DOE did not assess the proposed repository's cumulative impact on groundwater in the lower carbonate aquifer. INY Petition at 161. However, Inyo County does not explain why this alleged failure is significant. Indeed, DOE noted, in response to comment on this

very issue:

> This water from beneath Yucca Mountain could contribute to Death Valley springs whether or not it reaches the carbonate aquifer in the area of Yucca Mountain. Without the upward gradient in the carbonate aquifer in the area of Yucca Mountain, it is likely that contaminant migration would be on a slightly different pathway. Although DOE modeling of groundwater flow and contaminant migration did not include a scenario that involved the elimination of the upward gradient in the carbonate aquifer, the modeling to evaluate the long-term postclosure performance of the repository is not inconsistent with that scenario.

FSEIS, Vol. 3 at CR-324, Response to Comment – RRR000091/0002; *see also* SAR Section 2.4.4. Inyo County has not explained or demonstrated how remedying this alleged failure by including the assessment in the FSEIS would paint a *"seriously* different picture of the environmental landscape" from the current FEIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006), quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original).

In addition, Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that Inyo County has not complied with the requirement in 10 C.F.R. § 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 62 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In addition, the APAPO Board stated for this proceeding that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and were intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally

expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Federal Rules of Rules of Civil Procedure, Rule 56.

Of the two affidavits associated with this contention, neither affidavit complies with the requirements of sections 51.109 and 2.326. The Affidavit of Dr. John Bredehoeft states that he "adopt[s] as [his] own opinions the statements contained within Paragraph 5" of INY-NEPA-1. INY Petition, Attachment 1, Affidavit of John Bredehoeft at 2. However, this affidavit contains no other support or basis for the assertions in Inyo County's Petition, other than to state that Dr. Bredehoeft's opinions are "based upon research conducted by Hydrodynamics Group, LLC," Dr. Bredehoeft's place of employment. *Id.* at 1-2. Paragraph 5 of INY-NEPA-1 discusses the lower carbonate aquifer and the upward gradient between that body and the overlying volcanic aquifers, which, under current conditions, would prevent radionuclide contamination from the proposed repository from entering the lower carbonate aquifer. *See* INY Petition at 20-21. While Dr. Bredehoeft's report, which is cited in paragraph 5 of the contention, does mention the <u>possibility</u> that future groundwater pumping could alter the upward gradient, the subject of the report is the length of time contaminants would take to migrate to locations in Inyo County, assuming they were able to reach the lower carbonate aquifer. Bredehoeft and King, "The Potential for Contaminant Transport through the Carbonate Aquifer Beneath Yucca Mountain, Nevada," Hydrodynamics Group LLC, 2008 (LSN# CAL000000029 at 3, 17-18). As the report expressly states: "*We are making no assertions about the likelihood of contaminants migrating in the Carbonate Aquifer. We address one question only – should contaminants get to the Carbonate Aquifer, how long will they take them to reach the biosphere*." Bredehoeft and King, "The Potential for Contaminant Transport through the Carbonate Aquifer Beneath Yucca Mountain, Nevada," Hydrodynamics Group LLC, 2008 (LSN# CAL000000029 at 3) (emphasis in

original). In its summary, the report reiterates that "[w]e are in no way inferring that movement of contaminants from the repository through the Carbonate Aquifer is likely – only that it should be safeguarded from occurring." *Id.* at 18. Nor does Inyo County provide any other support, either in its contention or in Dr. Bredehoeft's affidavit or report, for the proposition that INY-NEPA-1 raises a significant issue with respect to whether future levels of groundwater pumping could reduce or eliminate the upward gradient, or that inclusion of such considerations would materially alter the overall environmental landscape. Dr. Bredehoeft's affidavit is therefore not a legally sufficient affidavit in support of INY-NEPA-1, as required by 10 C.F.R. §§ 2.326 and 51.109(a)(2).

In addition, INY-NEPA-1 does not reference the affidavit of Mr. Matthew Gaffney, nor does Mr. Gaffney's affidavit refer to any particular contentions to which it purports to lend support. *See* INY Petition, Attachment 2, Affidavit of Matthew Gaffney. Mr. Gaffney's affidavit states that "[t]he DOE's EIS and SEIS are inadequate [sic] regarding effects of facility on groundwater in lower carbonate acquifer [sic]," and purports to incorporate by reference EIS comments previously prepared and reviewed by Mr. Gaffney and transmitted to DOE, but provides no further analysis or explanation. *See* INY Petition, Attachment 2, Affidavit of Matthew Gaffney at 2.

The attached comments state that Inyo County's "scientific data supports" the conclusion that "the [upward] gradient will prevent migration of radionuclides from the repository to the [lower carbonate aquifer]." *See* Gaffney Affidavit, Attachment A at 2. However, the comments state that Inyo "believes that the upper [sic] gradient could be degraded by regional groundwater pumping." *Id.* Because it is not supported by any other information or explanation in the comments, this appears to be no more than speculation that, as Mr. Gaffney appears to acknowledge, is contradicted by Inyo County's own scientific data. Mr. Gaffney's affidavit, therefore, cannot be said to support INY-NEPA-1, and INY-NEPA-1 therefore does not comply with 10 C.F.R. §§ 2.326 or 51.109(a)(2).

In addition, while the Board does not ordinarily weigh the qualifications of a proffered expert in determining whether or not a contention is admissible, it is the petitioner's burden to demonstrate that its proffered expert possesses the requisite qualifications to offer expert testimony. *See, e.g.*, *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 & 2), CLI-04-21, 60 NRC 21, 27-28 (2004). In this case, the only qualification offered by Mr. Gaffney to establish his qualifications is that he has "[t]here years of environmental planning experience." Gaffney Affidavit at 1. This is not sufficient to demonstrate that Mr. Gaffney is qualified to offer expert opinion with respect to the subject matter of INY-NEPA-1, which concerns whether DOE's EIS documents contain an adequate analysis of the proposed repository's cumulative impacts from surface discharge of radioactively contaminated groundwater.

Nor does anything else in Inyo County's Petition, the affidavits of Dr. Bredehoeft or Mr. Gaffney, or the reports they cite or incorporate by reference support Inyo County's assertion that the issue it raises is significant or that a materially different result would be or would have been likely if the contention were proven to be true, as is required by section 2.326. INY-NEPA-1 therefore does not comply with the requirements applicable to NEPA contentions in this proceeding and should be rejected.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application.

These documents are intended to satisfy DOE's obligations under NEPA.

Inyo County contends that DOE has failed to evaluate the proposed repository's cumulative impacts on groundwater in the lower carbonate aquifer. INY Petition at 16. Inyo County claims that DOE has not considered the possibility that future groundwater pumping could reverse the upward hydraulic gradient that, under current conditions, would prevent radionuclide contamination from the proposed repository from reaching the lower carbonate aquifer. *Id.* at 22. However, Inyo County has not established that such an analysis would be required. Although federal agencies are required to take a "hard look" at the potential environmental consequences of proposed actions in their NEPA analyses, *see, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992), the requirement is tempered by a "rule of reason." *Id.*; *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-8, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative' " impacts. *LES*, LBP-06-8, 63 NRC at 258.

Inyo County has not established that the impact to the lower carbonate aquifer described in INY-NEPA-1 is a reasonably foreseeable impact whose analysis is required at this time in order for DOE to meet its NEPA obligations. Although Inyo County alleges that future groundwater pumping could eliminate the upward gradient and thus allow radionuclide contamination to reach the lower carbonate aquifer and, eventually, locations in Inyo County, Inyo County offers only its speculation that "a continuation of current levels of local groundwater pumping and/or additional regional groundwater pumping that is foreseeable in the future" could eliminate the upward gradient and allow contamination from the repository to reach the lower carbonate aquifer. INY Petition at 22-23. Inyo County does not point to any documentary support that demonstrates that such an event is likely or foreseeable. The report cited to by Inyo County flatly stats that "[w]e are in no way inferring that movement of contaminants from the repository through the Carbonate Aquifer is likely" and expressly

declines to take a position on its likelihood. Bredehoeft and King, 2008, LSN #CAL000000029 at 3, 18. The comments purported to be incorporated by reference into Mr. Gaffney's affidavit actually state that "DOE argues that the upper gradient will prevent migration of radionuclides from the repository to the [lower carbonate aquifer]" and that "Inyo's scientific data supports this conclusion." Gaffney Affidavit, Attachment A at 2. Inyo County offers no support for the proposition that the impacts that it alleges are anything other than hypothetical, remote and speculative possibilities that are not required to be considered under NEPA. Nor has Inyo County demonstrated that such an analysis is required for the NRC to make the finding required by 10 C.F.R. § 63.31(c) prior to issuing a construction authorization. INY-NEPA-1 does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998).

As discussed above, Inyo County has not offered any support for its or its experts' conclusion that future groundwater pumping in the vicinity of the proposed repository is likely to reverse the upward gradient in the lower carbonate aquifer, thereby allowing radionuclide

contamination from the proposed repository to reach the lower carbonate aquifer. Therefore, INY-NEPA-1 does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and must be rejected.

For all the reasons set forth above, INY-NEPA-1 should be rejected.

INY-NEPA-2 – FAILURE TO ADEQUATELY DESCRIBE AND ANALYZE THE CUMULATIVE IMPACT OF THE REPOSITORY IN COMBINATION WITH A CONTINUATION OF EXISTING LEVELS OF GROUNDWATER PUMPING ON THE POTENTIAL MIGRATION OF CONTAMINANTS FROM THE PROPOSED REPOSITORY

> This Commission should not adopt DOE's Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, February 2002, ("Final EIS") or DOE's 2008 Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, June 2008, ("Final EIS") as is required by 10 CFR 51.109(c) because they are incomplete and inadequate pursuant to National Environmental Policy Act ("NEPA") and NRC regulations at 10 CFR 51, because those documents do not analyze the direct and cumulative environmental impacts of a continuation of existing levels of groundwater pumping in the vicinity of the proposed repository on the flow path in the saturated zone through which contaminants can migrate from the proposed repository site to the biosphere including to areas within the County of Inyo.

INY Petition at 34. INY-NEPA-2 alleges that DOE's FEIS and Repository FSEIS are inadequate because neither document adequately discusses the effects of continued levels of groundwater pumping on the potential migration of contaminants from the proposed repository. *Id*. Inyo County contends that because of these deficiencies, these two documents do not meet the requirements of NEPA or NRC's NEPA-implementing regulations at 10 C.F.R. Part 51. *Id.* Inyo County therefore asserts that the FEIS and FSEIS cannot be adopted by the NRC. *Id.* INY-NEPA-2 is similar to INY-NEPA-1 in that both contentions allege that future groundwater pumping in the vicinity of the proposed repository could eliminate the upward gradient in the lower carbonate aquifer and therefore allow radionuclides from the proposed repository to migrate, via the saturated zone, to locations in Inyo County.

Staff Response

Because INY-NEPA-2 does not comply with the requirements of 10 C.F.R. §§

51.109(a)(2) and 2.326 and because it has not demonstrated it raises a material issue and is not adequately supported by facts or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(iv) and (v), INY-NEPA-2 should be rejected.

10 C.F.R. § 51.109(a)(2) sets forth standards for the admission of NEPA-related contentions. These criteria are in addition to those that must be satisfied for all contentions, found at 10 C.F.R. § 2.309(f)(1). For this proceeding, 10 C.F.R. Part 51 requires that NEPA-related contentions be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The section 2.326 criteria, in the context of this proceeding, are: (1) the issue must be timely raised; (2) the contention "must address a significant safety or environmental issue"; and (3) the contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) requires that affidavits support the contention.

Here, INY-NEPA-2 fails to address any of the mandatory requirements of §§ 51.109 and 2.326 in its text or supporting affidavits. Inyo County argues that "[t]his deficiency is

significant and, if it were to be addressed in a satisfactory manner, the disclosure of overall impacts on groundwater and contaminants entry into the biosphere would be materially different." INY Petition at 43. However, INY-NEPA-2 never demonstrates or explains why the requirements for admitting NEPA-related contentions in this proceeding are met, beyond merely asserting that they are. These conclusory and unsupported assertions, standing alone, do not satisfy the requirements of 10 C.F.R. § 2.326.

Nor can it be inferred from this contention itself that the issue Inyo County raises is either significant or would lead to a materially different result. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, INY-NEPA-2 alleges that DOE did not comply with NEPA and 10 C.F.R. Part 51 because DOE did not assess the cumulative impacts of groundwater pumping on the potential migration of contaminants from the proposed repository, via the saturated zone. However, Inyo County does not explain why this alleged failure is significant. Nor does Inyo County explain how remedying this alleged failure by including the assessment in the Repository SEIS would paint a *"seriously* different picture of the environmental landscape" from the current Repository SEIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). As discussed below, neither INY-NEPA-2 nor the associated affidavits provide any documentary support for the proposition that the impacts alleged in INY-NEPA-2 are other than remote and speculative, much less that they raise a significant environmental issue whose discussion would paint a "*seriously* different picture of the environmental landscape," as 10 C.F.R. §§ 51.109(a)(2) and 2.326 require. *Id.*

In addition, Sections 2.326(b) and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that Inyo County has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 62 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated for this proceeding that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and were intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although

not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

Of the two affidavits associated with this contention, neither affidavit complies with the requirements of sections 51.109 and 2.326. The Affidavit of Dr. John Bredehoeft states that he "adopt[s] as [his] own opinions the statements contained within Paragraph 5" of INY-NEPA-1. INY Petition, Attachment 1, Affidavit of John Bredehoeft at 2. However, this affidavit contains no other support or basis for the assertions in Inyo County's Petition, other than to state that Dr. Bredehoeft's opinions are "based upon research conducted by Hydrodynamics Group, LLC," Dr. Bredehoeft's place of employment. *Id.* at 1-2. While Dr. Bredehoeft's report, which is cited in paragraph 5 of the contention, does mention the <u>possibility</u> that future groundwater pumping could alter the upward gradient, the subject of the report is the length of time contaminants would take to migrate to locations in Inyo County, assuming they were able to reach the lower carbonate aquifer. Bredehoeft and King, "The Potential for Contaminant Transport through the Carbonate Aquifer Beneath Yucca Mountain, Nevada," Hydrodynamics Group LLC, 2008 (LSN# CAL000000029 at 3, 17-18). As the report expressly states: "*We are making no assertions about the likelihood of contaminants migrating in the Carbonate Aquifer. We address one question only – should contaminants get to the Carbonate Aquifer, how long will they take them to reach the biosphere*." Bredehoeft and King, "The Potential for Contaminant Transport through the Carbonate Aquifer Beneath Yucca Mountain, Nevada," Hydrodynamics Group LLC, 2008 (LSN# CAL000000029 at 3) (emphasis in original). In its summary, the report reiterates that "[w]e are in no way inferring that movement of contaminants from the repository through the Carbonate Aquifer is likely – only that it should be safeguarded from occurring." *Id.* at 18.

Nor does Inyo County provide any other support, either in its contention or in Dr. Bredehoeft's affidavit or report, for the proposition that INY-NEPA-2 raises a significant issue with respect to whether future levels of groundwater pumping could reduce or eliminate the upward gradient, or that inclusion of such considerations would materially alter the overall environmental landscape. Dr. Bredehoeft's affidavit is therefore not a sufficient affidavit in support of INY-NEPA-2, as required by 10 C.F.R. §§ 2.326 and 51.109(a)(2).

In addition, Mr. Gaffney's affidavit does not refer to any particular contentions to which it purports to lend support. *See* INY Petition, Attachment 2, Affidavit of Matthew Gaffney. Mr. Gaffney's affidavit states that "[t]he DOE's EIS and SEIS analysis are inadeuuate [sic] regarding effects of groundwater pumping," and purports to incorporate by reference EIS comments previously prepared and reviewed by Mr. Gaffney and transmitted to DOE, but provides no further analysis or explanation. *See* Gaffney Affidavit at 2.

The attached comments state that Inyo County's "scientific data supports" the conclusion that "the [upward] gradient will prevent migration of radionuclides from the repository to the [lower carbonate aquifer]." *See* Gaffney Affidavit, Attachment A at 2. However, the comments state that Inyo "believes that the upper [sic] gradient could be degraded by regional groundwater pumping." *Id.* As this statement is not supported by any further explanation or support in these comments, this appears to be no more than speculation that, as Mr. Gaffney appears to acknowledge, is not supported by Inyo County's own scientific data. Mr. Gaffney's affidavit, therefore, cannot be said to support INY-NEPA-2, and INY-NEPA-2 therefore does not comply with 10 C.F.R. §§ 2.326 or 51.109(a)(2).

In addition, while the Board does not ordinarily weigh the qualifications of a proffered expert in determining whether or not a contention is admissible, it is the petitioner's burden to demonstrate that its proffered expert possesses the requisite qualifications to offer expert testimony. *See, e.g.*, *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 27-28 (2004). In this case, the only qualification offered by Mr. Gaffney to

establish his qualifications is that he has “[t]hree years of environmental planning experience.” Gaffney Affidavit at 1. This is not sufficient to demonstrate that Mr. Gaffney is qualified to offer expert opinion with respect to the subject matter of INY-NEPA-2, which concerns whether DOE’s EIS documents contain an adequate analysis of the proposed repository’s cumulative impacts from surface discharge of radioactively contaminated groundwater.

Nor does anything else in Inyo County’s Petition, the affidavits of Dr. Bredehoeft or Mr. Gaffney, or the reports they cite or incorporate by reference support Inyo County’s assertion that the issue it raises is significant or that a materially different result would be or would have been likely if the contention were proven to be true, as is required by section 2.326. INY-NEPA-2 therefore does not comply with the requirements applicable to NEPA contentions in this proceeding and should be rejected. As discussed further below, the contention also does not meet the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding.” 10 C.F.R. § 2.309(f)(1)(iv). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

Inyo County contends that DOE has failed to evaluate the cumulative impacts of future groundwater pumping on the potential migration, via the saturated zone, of contaminants from the proposed repository. INY Petition at 34-35. Inyo County claims that DOE has not

considered the possibility that future groundwater pumping could reverse the upward hydraulic gradient that, under current conditions, would prevent radionuclide contamination from the proposed repository from reaching the saturated zone. *Id.* at 39. However, Inyo County has not demonstrated or provided any documentary support for the proposition that the impacts it alleges are reasonably foreseeable. Although federal agencies are required to take a "hard look" at the potential environmental consequences of proposed actions in their NEPA analyses, *see, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992), the requirement is tempered by a "rule of reason." *Id.*; *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative'" impacts. *LES*, LBP-06-08, 63 NRC at 258.

Inyo County has not established that the impacts of groundwater pumping as it describes is a reasonably foreseeable impact whose analysis is required at this time in order for DOE to meet its NEPA obligations. Although Inyo County alleges that future groundwater pumping could eliminate the upward gradient and thus allow radionuclide contamination to reach the saturated zone and, eventually, locations in Inyo County, Inyo County offers only its speculation of the “possibility that a continuation of current levels of local groundwater pumping and/or additional regional groundwater pumping that is foreseeable in the future could” eliminate the upward gradient and allow contamination from the repository to reach the saturated zone and to migrate, by way of the saturated zone, to locations in Inyo County. INY Petition at 39. Inyo County does not point to any documentary support that demonstrates that such an event is likely or foreseeable. As noted previously, the report cited to by Inyo County flatly states that “[w]e are in no way inferring that movement of contaminants from the repository through the Carbonate Aquifer is likely” and expressly declines to take a position on its likelihood. Bredehoeft and King, 2008, LSN

#CAL000000029 at 3, 18. The comments purported to be incorporated by reference into Mr. Gaffney's affidavit actually state that "DOE argues that the upper [sic] gradient will prevent migration of radionuclides from the repository to the [lower carbonate aquifer]" and that "Inyo's scientific data supports this conclusion." Gaffney Affidavit, Attachment A at 2. Inyo County offers no support for the proposition that the impacts that it alleges are anything other than hypothetical, remote and speculative possibilities that are not required to be considered under NEPA. Nor has Inyo County demonstrated that such an analysis is required for the NRC to make the finding required by 10 C.F.R. § 63.31(c) prior to issuing a construction authorization. INY-NEPA-2 therefore does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

As discussed above, Inyo County has not offered any support for its or its experts' conclusion that future groundwater pumping in the vicinity of the proposed repository is likely to reverse the upward gradient in the lower carbonate aquifer, thereby allowing radionuclide contamination from the proposed repository to reach the migrate via the saturated zone.

Therefore, INY-NEPA-2 does not comport with the requirements of 10 C.F.R. § 2.309(f)(1)(v) and must be rejected.

For all the reasons stated above, INY-NEPA-2 should be rejected.

INY-NEPA-3 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION OF THE NATURE AND EXTENT OF THE REPOSITORY'S CUMULATIVE IMPACT ON GROUNDWATER IN THE VOLCANIC-ALLUVIAL AQUIFER

> This Commission should not adopt DOE's Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, February 2002, ("Final EIS") or DOE's 2008 Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, June 2008, ("Final SEIS") as is required by 10 CFR 51.109(c), because they are incomplete and inadequate pursuant to National Environmental Policy Act ("NEPA") and NRC regulations at 10 CFR 51, because those documents do not analyze the cumulative environmental impacts of the proposed repository on groundwater in the volcanic-alluvial aquifer.

INY Petition at 44. INY-NEPA-3 alleges that the FEIS and FSEIS are deficient because DOE failed to analyze the proposed repository's cumulative environmental impacts on groundwater in the volcanic-alluvial aquifer. *Id.* INY-NEPA-3 argues that because of these deficiencies, the NRC cannot adopt the two EIS documents. *Id.* INY-NEPA-3 raises the same issues raised in CAL-NEPA-22 and NEV-NEPA-20 and in the NRC Staff's EISADR. *See* CAL Petition at 105; NEV Petition at 1124, NRC Adoption Decision at 3-10 to 3-11. DOE has undertaken to supplement the FSEIS to further analyze the proposed repository's impacts on the volcanic-alluvial aquifer. *See* "Supplement to the Environmental Impact Statements for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV," 73 Fed. Reg. 63,463 (October 24, 2008).

Staff Response

However, in order to be admissible, INY-NEPA-3 must still satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1), 2.326, and 51.109. Because INY-NEPA-3 does not comply with 10 C.F.R. §§ 2.326 or 51.109, INY-NEPA-3 should be rejected.

10 C.F.R. § 51.109(a)(2) sets forth standards for the admission of NEPA-related contentions. These criteria are in addition to those that must be satisfied for all contentions, found at 10 C.F.R. § 2.309(f)(1). Part 51 requires that contentions be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The section 2.326 criteria, in the context of this proceeding, are: (a) the issue must be timely raised; (2) the contention "must address a significant safety or environmental issue"; and (3) the contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Like section 51.109(a)(2), section 2.326(b) requires that affidavits support the contention.

Here, Inyo County fails to address any of the mandatory requirements of §§ 51.109 and 2.326 in its contention or supporting affidavits. INY-NEPA-3 does not refer to or identify any affidavits, nor do any of the three affidavits attached to INY Petition identify INY-NEPA-3 as a contention with which their affidavits are associated.

The Staff submits that Inyo County has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice

requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 62 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated for this proceeding that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and were intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

While the affidavit of Mr. Matthew Gaffney does not mention INY-NEPA-3 or, indeed, any specific contentions proffered by Inyo County, the affidavit asserts that "[t]he DOE's EIS and SEIS analysis are inadeuqate [sic] regrding [sic] the effects of facility [sic] on groundwater in [sic] volcanic alluvial aquifer." INY Petition, Attachment 2, Affidavit of Matthew Gaffney at ¶ 3. Mr. Gaffney's affidavit contains no explanation or support for this statement whatsoever, other than incorporating by reference comments on DOE's EIS documents prepared and reviewed by Mr. Gaffney and previously submitted to DOE. *Id.* These comments, however, do not address the volcanic-alluvial aquifer, but concern themselves with matters that are the subject of other Inyo County contentions. Neither this conclusory statement nor the documents that Mr. Gaffney purports to incorporate by reference demonstrate or even argue that a "materially different result would be or would have been likely" if INY-NEPA-3 were proven true, as section 2.326 requires.

In addition, INY-NEPA-3 discusses at some length the NRC Staff's rationale for requesting further analysis by DOE addressing the volcanic-alluvial aquifer, but neither the

contention nor Mr. Gaffney's affidavit support a finding that the contention raises a significant environmental issue, as required by section 2.326. The Staff's belief that further analysis is necessary does not, in and of itself, make INY-NEPA-3 an admissible contention in this proceeding. *See Duke Energy Corp*. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 336-37 (1999).

In addition, while the Board does not ordinarily weigh the qualifications of a proffered expert in determining whether or not a contention is admissible, it is the petitioner's burden to demonstrate that its proffered expert possesses the requisite qualifications to offer expert testimony. *See, e.g.*, *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 27-28 (2004). In this case, the only qualification offered by Mr. Gaffney to establish his qualifications is that he has "[t]hree years of environmental planning experience." Gaffney Affidavit at ¶ 2. This is not sufficient to demonstrate that Mr. Gaffney is qualified to offer expert opinion with respect to the subject matter of INY-NEPA-3, which concerns whether DOE's EIS documents contain an adequate analysis of the proposed repository's cumulative impacts on the volcanic-alluvial aquifer. Therefore, INY-NEPA-3 does not meet the requirements of §§ 2.326 or 51.109 and must be rejected.

INY-NEPA-4 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION OF THE NATURE AND EXTENT OF THE REPOSITORY'S CUMULATIVE IMPACT FROM SURFACE DISCHARGE OF GROUNDWATER

> This Commission should not adopt DOE's Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, February 2002, ("Final EIS" or DOE's 2008 Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, June 2008, ("Final SEIS") as is required by 10 CFR 51.109(c), because they are incomplete and inadequate pursuant to National Environmental Policy Act ("NEPA") and NRC regulations at 10 CFR 51, because those documents do not analyze the impacts to public health and safety and other cumulative environmental impacts the discharge of potentially contaminated groundwater to the surface.

INY Petition at 50. INY-NEPA-4 alleges that the FEIS and FSEIS are inadequate under NEPA and the NRC's regulations at 10 C.F.R. Part 51 because DOE failed to analyze the impacts resulting from the discharge of potentially contaminated groundwater to the surface. *Id.* INY-NEPA-4 raises the same issues raised in CAL-NEPA-23 and NEV-NEPA-21 and in the NRC Staff's EISADR. *See* CAL Petition at 111; NEV Petition at 1128, NRC EISADR at 3-11 to 3-12. DOE has undertaken to supplement the FSEIS to further analyze the proposed repository's impacts regarding the potential surface discharge of groundwater contaminated with radionuclides from the repository. *See* "Supplement to the Environmental Impact Statements for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV," 73 Fed. Reg. 63,463 (Oct. 24, 2008).

Staff Response

However, in order to be admissible in this proceeding, INY-NEPA-4 must still satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1), 2.326, and 51.109. Because INY-NEPA-4 does not comply with 10 C.F.R. §§ 2.326 and 51.109, INY-NEPA-4 should be rejected.

10 C.F.R. § 51.109(a)(2) sets forth standards for the admission of NEPA-related contentions. These criteria are in addition to those that must be satisfied for all contentions, found at 10 C.F.R. § 2.309(f)(1). Part 51 requires that contentions be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The section 2.326 criteria, in the context of this proceeding, are: (1) the issue must be timely raised; (2) the contention "must address a significant safety or environmental issue"; and (3) the contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Like section 51.109, section 2.326(b) requires that affidavits support the contention. Here, Inyo County fails to address any of the mandatory requirements of §§ 51.109 and 2.326 in its contention or supporting affidavits and therefore INY-NEPA-4 is not admissible.

The Staff submits that Inyo County has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 62 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC*

(Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated for this proceeding that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and were intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected form an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56. Neither Mr. Gaffney nor Dr. Smith's affidavit satisfies these criteria.

While the affidavit of Mr. Matthew Gaffney does not mention INY-NEPA-4 or, indeed, any specific contentions proffered by Inyo County, the affidavit asserts that "[t]he DOE's EIS and SEIS analysis are inadequate [sic] regarding effects from discharge of potentially contaminated groundwater from [sic] lower carbonate acquifer [sic] in California." INY Petition, Attachment 2, Affidavit of Matthew Gaffney ¶ 3. Mr. Gaffney's affidavit contains no explanation or support for this statement whatsoever, other than incorporating by reference comments on DOE's EIS documents prepared and reviewed by Mr. Gaffney and previously submitted to DOE. *Id.* ¶ 4. The comments do discuss surface discharge, but only in the context of DOE's mitigation plan, which is not mentioned in INY-NEPA-4. Neither the conclusory statement in Mr. Gaffney's affidavit nor the documents that Mr. Gaffney purports to incorporate by reference demonstrate or even argue that a "materially different result would be or would have been likely" if INY-NEPA-4 were proven true, as section 2.326 requires. INY-NEPA-4 discusses at some length the NRC Staff's rationale for requesting further analysis by DOE addressing the potential surface discharge of radioactively contaminated groundwater. However, neither the contention nor Mr. Gaffney's affidavit

support a finding that the contention raises a significant environmental issue, as required by section 2.326. The Staff's belief that further analysis is necessary does not, in and of itself, satisfy the requirements of 2.326 or make INY-NEPA-4 an admissible contention in this proceeding. *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 336-37 (1999). Inyo County must demonstrate that these requirements are met, and it has not done so.

In addition, while the Board does not ordinarily weigh the qualifications of a proffered expert in determining whether or not a contention is admissible, it is the petitioner's burden to demonstrate that its proffered expert possesses the requisite qualifications to offer expert testimony. *See, e.g.*, *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 27-28 (2004). In this case, the only qualification offered by Mr. Gaffney to establish his qualifications is that he has "[t]hree years of environmental planning experience." Gaffney Affidavit ¶ 2. This is not sufficient to demonstrate that Mr. Gaffney is qualified to offer expert opinion with respect to the subject matter of INY-NEPA-4, which concerns whether DOE's EIS documents contain an adequate analysis of the proposed repository's cumulative impacts from surface discharge of radioactively contaminated groundwater. Therefore, INY-NEPA-4 does not meet the requirements of §§ 2.326 or 51.109 and must be rejected.

The Affidavit of Dr. Eugene Smith also appears to be associated with INY-NEPA-4. Dr. Smith adopts the allegations contained in paragraph 5 of INY-NEPA-4 but does not provide any additional explanation or basis for his opinion. INY Petition, Attachment 1, Affidavit of Eugene Smith ¶ 4. As stated above, paragraph 5 merely sets forth the concerns raised by the NRC Staff in its EISADR, in which it concluded that additional analysis was necessary regarding the proposed repository's impacts from surface discharge of radioactively-contaminated groundwater from the volcanic-alluvial aquifer. See INY Petition at 52-55. However, as stated above, the Staff's belief that further analysis is necessary does

not, in and of itself, make INY-NEPA-4 an admissible contention in this proceeding. *Oconee*, CLI-99-11, 49 NRC at 336-37.

INY-NEPA-4 does not comply with the requirements of 10 C.F.R. §§ 2.326 and 51.109 mandating a supporting affidavit. In addition, neither INY-NEPA-4 nor the affidavits of Dr. Smith and Mr. Gaffney support a determination that the issue raised is a significant environmental issue, or that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as 10 C.F.R. § 2.326 requires. Accordingly, INY-NEPA-4 does not meet the requirements of 10 C.F.R. §§ 51.109 and 2.326 and must be rejected.

INY-NEPA-5 – FAILURE TO PROVIDE A COMPLETE AND ADEQUATE DISCUSSION OF THE NATURE AND EXTENT OF THE NECESSARY MITIGATION AND REMEDIATION MEASURES FOR RADIONUCLIDES SURFACING AT ALKALI FLAT/FRANKLIN LAKE PLAYA

> This Commission should not adopt DOE's Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, February 2002, ("Final EIS") or DOE's 2008 Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, June 2008, ("Final SEIS") as is required by 10 CFR 51.109(c), because they are incomplete and inadequate pursuant to National Environmental Policy Act ("NEPA") and NRC regulations at 10 CFR 51, because those documents do not analyze the necessary mitigation and remediation measures that are necessary to protect the public health and safety and they do not adequately analyze other environmental impacts from radionuclides surfacing within Inyo County, California.

INY Petition at 57. INY-NEPA-5 alleges that the FEIS and FSEIS are inadequate under NEPA and the NRC's regulations at 10 C.F.R. Part 51 because DOE failed to analyze the mitigation and remediation measures that are necessary to protect the public health and safety from radionuclides from the proposed repository that could surface at locations within Inyo County. *Id.* INY-NEPA-5 contends that DOE has improperly deferred establishing a mitigation plan to address these potential impacts. *Id.* at 59-62. INY-NEPA-5 raises the same issues raised in CAL-NEPA-24, and its discussion is substantially similar to CAL-NEPA-24. *See* CAL Petition at 116-121.

Staff Response

Because INY-NEPA-5 does not comply with 10 C.F.R. §§ 2.326 and 51.109, INY-NEPA-5 should be rejected. In addition, the contention does not raise a genuine dispute on a material issue of law or fact, as required by 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 51.109(a)(2) sets forth standards for the admission of NEPA-related contentions. These criteria are in addition to those that must be satisfied for all contentions,

found at 10 C.F.R. § 2.309(f)(1). Part 51 requires that contentions be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The section 2.326 criteria, in the context of this proceeding, are: (a) the issue must be timely raised; (2) the contention "must address a significant safety or environmental issue"; and (3) the contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Like section 51.109, section 2.326(b) requires that affidavits support the contention. Here, Inyo County fails to address any of the mandatory requirements of §§ 51.109 and 2.326 in its contention or supporting affidavits and therefore INY-NEPA-4 is not admissible.

The Staff submits that Inyo County has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 62 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated for this proceeding that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and were intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal

Rules of Civil Procedure illustrate what is generally expected for an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

The affidavit of Mr. Matthew Gaffney does not mention INY-NEPA-5 or, indeed, any specific contentions proffered by Inyo County, but merely asserts that "[t]he DOE's EIS and SEIS analysis are inadequate [sic] regarding effects from discharge of potentially contaminated groundwater from [sic] lower carbonate acquifer [sic] in California." INY Petition, Attachment 2, Affidavit of Matthew Gaffney at ¶3. Mr. Gaffney's affidavit contains no explanation or support for this statement, other than incorporating by reference comments on DOE's EIS documents prepared and reviewed by Mr. Gaffney and previously submitted to DOE. *Id.* Neither the conclusory statement in Mr. Gaffney's affidavit nor the documents that Mr. Gaffney purports to incorporate by reference demonstrate or even argue that remedying this alleged failure by including the assessment in the FSEIS would paint a *"seriously* different picture of the environmental landscape" *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). Mr. Gaffney's affidavit is the only affidavit that even appears to be associated with INY-NEPA-5 and INY-NEPA-5 therefore is not supported by an affidavit as 10 C.F.R. §§ 2.326 and 51.109 require.

In addition, while the Board does not ordinarily weigh the qualifications of a proffered expert in determining whether or not a contention is admissible, it is the petitioner's burden to demonstrate that its proffered expert possesses the requisite qualifications to offer expert testimony. *See, e.g.*, *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 27-28 (2004). In this case, the only qualification offered by Mr. Gaffney to establish his qualifications is that he has "[t]hree years of environmental planning

experience." Gaffney Affidavit at ¶2. This is not sufficient to demonstrate that Mr. Gaffney is qualified to offer expert opinion with respect to the subject matter of INY-NEPA-5, which concerns whether DOE's EIS documents contain an adequate analysis of the proposed repository's cumulative impacts from surface discharge of radioactively contaminated groundwater. Therefore, INY-NEPA-5 does not meet the requirements of sections 2.326 or 51.109 and must be rejected.

In conclusion, INY-NEPA-5 does not comply with the requirements of 10 C.F.R. §§ 2.326 and 51.109 mandating a supporting affidavit. In addition, neither INY-NEPA-5 nor the affidavit of Mr. Gaffney support a determination that the issue raised is a significant environmental issue, or that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as 10 C.F.R. § 2.326 requires. Accordingly, INY-NEPA-5 does not meet the requirements of 51.109 and 2.326 and must be rejected.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

Here, while INY-NEPA-5 alleges that DOE has failed to address mitigation and remediation measures related to radionuclides surfacing at locations within Inyo County, California, INY-NEPA-5 has not demonstrated that such analysis is legally required or that it would appreciably alter the environmental landscape. This is insufficient to raise a genuine issue of material law or fact.

Additionally, INY-NEPA-5 appears to assert that DOE has improperly deferred its mitigation analysis by failing to include its emergency plan in the LA. INY Petition at 60-62.

This argument is problematic for several reasons. First, it is not clear that the requirements regarding an emergency plan to deal with radiological accidents are relevant to whether the FSEIS and FEIS contain an adequate analysis of mitigation and remediation measures for radionuclides surfacing, via groundwater transport, to locations within Inyo County, which is the subject of INY-NEPA-5. NEPA's requirement to assess and discuss the environmental impacts of a proposed action is procedural in nature and independent of the requirement to prepare an emergency plan to deal with radiological accidents. Therefore, this assertion, and, consequently, INY-NEPA-5, fails to raise a genuine dispute regarding the application. Second, to the extent that INY-NEPA-5 contends that DOE's LA is deficient for its failure to include a full emergency plan, INY-NEPA-5 seeks to impose a requirement in addition to that mandated by 10 C.F.R. § 63.21(c)(21), which requires that the license application include "a description of the emergency plan," and 10 C.F.R. § 63.161, which requires that DOE "shall develop and be prepared to implement a plan to cope with radiological accidents . . . at any time before permanent closure," and therefore represents an impermissible challenge to those regulations in the guise of a NEPA contention. *See* 10 C.F.R. § 2.335; *see also Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-87-12, 26 NRC 383, 395 (1987); *Florida Power and Light Co.* (Turkey Point Nuclear Generating Station, Units 3 and 4), LBP-01-6, 52 NRC 138, 159 (2001). This argument therefore is both wholly irrelevant to the subject of INY-NEPA-5 and presents an impermissible challenge to Commission regulations.

Therefore, for the reasons set forth above, INY-NEPA-5 should be rejected.

INY-NEPA-6 - FAILURE TO ADEQUATELY DESCRIBE AND ANALYZE THE VOLCANIC FIELD IN THE GREENWATER RANGE IN AND ADJACENT TO DEATH VALLEY NATIONAL PARK THUS FAILING TO ASSESS THE POTENTIAL ENVIRONMENTAL IMPACTS RESULTING FROM IGNEOUS ACTIVITY THAT COULD DISRUPT THE RESPOSITORY

> The applicant (or "DOE") failed to include in the Yucca Mountain Repository License Application ("LA"), Safety Analysis Report ("SAR"), Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, February 2002, ("Final EIS") and Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain , Nye County Nevada, June 2008, ("Final SEIS") an adequate description and analysis of the probability of igneous activity disrupting the site of the proposed repository. This omission is the result of ignoring the Death Valley volcanic field in the Greenwater Range as part of the area to be considered for hazard calculations. As a result of this omission, the documents underestimate the probability of igneous activity, likely by two or more orders of magnitude; thus, neither the Final EIS nor the Final SEIS adequately describe the potential environmental impacts that may result from igneous activity disrupting the repository.

INY Petition at 71. INY-NEPA-6 alleges that DOE failed to include in the LA, SAR[69] and Repository FEIS and Repository SEIS an adequate description and analysis of the probability of igneous activity disrupting the repository. INY Petition at 71. Specifically, Inyo County claims that DOE ignored the Death Valley volcanic field in the Greenwater Range and, as a result, underestimated the probability of igneous activity. *Id.*

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[69] Throughout this contention, Inyo County references the requirements of Part 63, the Staff's Yucca Mountain Review Plan and the SAR and LA. It is clear from the discussion that Inyo County is raising only a NEPA contention here. *See* INY Petition at 73 ("This contention challenges compliance with NEPA"). Since the issue of DOE's compliance Part 63 is not a NEPA issue, the Staff does not address this issue in response to this contention. *See High-Level Waste Repository*, LBP-08-10, 67 NRC at __, (June 20, 2008), (slip op. at 5) (the NEPA designation is to be used with contentions pertaining to the DOE NEPA documents or the NRC Staff position statement on adoption of DOE environmental documents). Safety issues associated with this contention can be found in INY-SAFETY-3.

Staff Response

Because of the alleged inadequacy, Inyo County asserts that it would not be practicable for the NRC to adopt DOE's NEPA documents. *Id.* at 73. As explained further below, this contention does not comply with the requirements of 10 C.F.R. § 2.326. In addition, this contention fails to meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1). INY-NEPA-26 is, therefore, inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is

analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

As an initial matter, Inyo County fails to provide any affidavits in support of INY-NEPA-6. Inyo County does provide an affidavit from Dr. Eugene I. Smith, who appears to have experience in volcanology and Dr. Smith's research on the volcanic field around Yucca Mountain is referenced by Inyo County. *See* INY Petition at 74 and Attachment 3, Affidavit of Eugene I. Smith. However, Dr. Smith's affidavit indicates that he only provided opinions with respect to INY-SAFETY-4 and INY-NEPA-4. Affidavit of Eugene I. Smith at ¶ 4. Accordingly, INY-NEPA-6 lacks a supporting affidavit, as required by 10 C.F.R. § 2.326(b).

Further, Inyo County fails to explicitly address the § 2.326 criteria, but does assert that the alleged deficiency identified in the contention, the failure to consider the Death Valley volcanic field and the underestimation of the probability of igneous activity, is a significant new consideration that renders the Repository FEIS and Repository SEIS inadequate. INY Petition at 77, 78. However, as discussed below, the contention does not provide any support for the assertion that the alleged deficiency is significant. Inyo County simply asserts, without any support, that DOE underestimates the probability of igneous activity

"likely by two or more orders of magnitude." INY Petition at 74. This statement alone does not demonstrate that Inyo County has raised a significant environmental issue. Further, Inyo County fails to provide any information to suggest that even if this assertion were true, what, if any, impact this alleged underestimation of past volcanic activity would have on DOE's NEPA documents or the Staff's adoption decision. Inyo County's contention fails to meet the requirements of 10 C.F.R §§ 2.326(a)(2) and (3) and should be rejected. In addition, the contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1), as discussed below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc*. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, assertions, without further explanation, even from an expert, are insufficient to meet the requirement of 10 C.F.R. § 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Here, Inyo County fails to provide any supporting facts or expert opinion to support its contention. As discussed above, Inyo County does not reference the opinions or affidavit of an expert. Inyo County simply asserts that DOE underestimated the probability of igneous activity "likely by two or more orders of magnitude." INY Petition at 74.

Inyo County also references research performed by its consultant on volcanism. *See* INY Petition at 74-75. However, the research simply notes that Death Valley basalt volcanoes are closely associated with Yucca Mountain basalt volcanoes. INY Petition at 75. Based on this research, Inyo County makes the unsupported statement that therefore the "hazard assessment for Yucca Mountain should consider the Greenwater volcanoes near Death Valley." INY Petition at 75. Furthermore, the relevancy of the Greenwater volcanoes was considered in DOE's 1996 PVHA. As documented in the PVHA report what Inyo refers to as "Greenwater volcanics" were, in fact, given consideration as part of the Amargosa Valley Isotopic Province (AVIP). *See* CRWMS M&O (Civilian Radioactive Waste Management System Management and Operating Contractor) 1996. Probabilistic Volcanic Hazard Analysis for Yucca Mountain, Nevada. BA0000000-01717-2200-00082 REV 0 at Fig. 3-23 (LSN# DEN000861156), fig. 3-23, page 3-75. However, even if Inyo County's assertions were true, it fails to explain how consideration of the Greenwater volcanoes would cause DOE to underestimate the probability for igneous activity at Yucca Mountain or what impact this underestimation would have on DOE's NEPA documents. None of Inyo County's assertions, even if supported by an expert, are sufficient to meet the requirement of 10 C.F.R. § 2.309(f)(1)(v). INY-NEPA-6 should, therefore, be dismissed.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-

24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). Here, Inyo County references specific portions of DOE's NEPA documents that it claims to dispute.[70] *See* INY Petition at 73-74. However, as discussed above, Inyo County only provides conclusory allegations that DOE has underestimated the probability of igneous activity at Yucca Mountain. *See* INY Petition at 74. Accordingly, INY-NEPA-6 fails to meet provide sufficient information to show a genuine dispute with the applicant. For all the foregoing reasons, INY-NEPA-6 should be rejected.

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[70] Inyo County in addressing this criterion discussed the failure of DOE's NEPA documents to address the impact of the repository on groundwater in the lower carbonate aquifer. INY Petition at 78. The Staff assumes, however, that Inyo County intended to reference DOE's discussion of volcanism at the site. The Staff, therefore, does not address, in response to this contention, the issue of the impact on groundwater. *See* INY-NEPA-1; INY Petition at 6.

INY-NEPA-7–FAILURE TO ADDRESS SOCIOECONOMIC IMPACTS IN THE COUNTY OF INYO

> This Commission should not adopt DOE's Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, February 2002, ("Final EIS") or DOE's 2008 Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada, June 2008, ("Final SEIS") as is required by 10 CFR 51.109(c), because they are incomplete and inadequate pursuant to National Environmental Policy Act ("NEPA") and NRC regulations at 10 CFR 51, because those documents do not analyze the socio-economic impacts related cumulative environmental impacts in Inyo County that will potentially result from the proposed repository.

INY Petition at 79. INY-NEPA-7 alleges that DOE's FEIS and FSEIS should not be adopted because they are incomplete under NEPA and 10 C.F.R. Part 51 because they do not analyze socio-economic impacts as they relate to cumulative environmental impacts. INY Petition at 79.

Staff Response

The Staff opposes admission of this contention because it fails to comply with applicable Commission rules in that it does not address the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2), and because it fails to meet all the contention admissibility criteria of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits that set forth the factual and/or technical bases for the petitioner's claim that the criteria of paragraph (a) of this section have been satisfied. *See Amergen Energy Co. LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (November 6, 2008) (slip op. at 13). "Section 2.326(b) requires motions to reopen to be accompanied by affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant safety issue, together with evidence that satisfies our admissibility standards." *Id.* at 16. Proponents of a reopening motion bear the burden of meeting all of the requirements. *Id.* at 13-14.

Since INY-NEPA-007 does not explicitly address any of the motion to reopen criteria in 10 C.F.R. § 2.326. Therefore, INY-NEPA-007 should not be admitted because it fails to comply with applicable Commission rules in that it does not address the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel,* Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, assertions,

without further explanation, even from an expert are insufficient to meet the requirement of section 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

Here, Inyo County asserts that, no socio-economic impact analysis was conducted for Inyo County. INY Petition at 81. However, Inyo asserts, there is a significant potential for socioeconomic impacts within Inyo County and Death Valley. From this Inyo asserts that the NEPA analyses should have taken a “hard look” at such cumulative impacts. INY Petition at 81. INY-NEPA-007 states that these potential impacts include: 1) Impacts to tourism and local business, 2) Impacts to the transient occupancy taxes in the region, 3) Impacts to local services and 4) devaluation of real estate and future residential growth.

However, Inyo does not include any expert analysis of these assertions. They are wholly unsupported. While Inyo County does include an affidavit by Mr. Mathew Gaffney, a California Environmental Planner, his affidavit includes only unsupported and unexplained conclusions and an incorporated letter to the U.S. Department of Energy in which he takes issue with may aspects of DOE’s various environmental impact statements. As such, his affidavit does not “set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented" as required by 10 C.F.R. § 51.109(a)(2).

Therefore, INY-NEPA-007 should be rejected because it is not supported by a “concise statement of the alleged facts or expert opinions which support Inyo County’s position on the issue and because it does not include references to the specific sources and documents on which [it] intends to rely to support its position” as required by 10 C.F.R. § 2.309(f)(1)(v).

NCA-NEPA-001[71] - NEPA REQUIREMENTS

> DOE's 2008 FSEIS and 2002 FEIS are inadequate because they fail to reasonably identify post-closure impacts to human health that are culturally appropriate to members of the NCAC. This deficiency is significant, and if it were to be addressed in a satisfactory manner, the disclosure of the radiological impact to the Newe would be materially disproportionate and significant.

NCA Petition at 12. The NCAC alleges that the FEIS and FSEIS do not reasonably identify post-closure health impacts due to radiation exposure that are culturally appropriate to Native Americans. *Id.* NCAC has not clearly identified whether this is an environmental contention or a safety contention. The contention is under a "Safety" heading in the petition, but its title is "NEPA Requirements." *Id.* Since the title is "NEPA Requirements" and the contention challenges the adequacy of DOE's FEIS and FSEIS, the Staff is addressing this as an environmental contention. However, the Staff notes that if it were intended as a safety contention, it does not meet the 10 C.F.R. § 2.309(f)(1)(vi) requirement to establish a genuine dispute with the license application because it does not reference any portion of DOE's license application but rather disputes a Commission rule. *See, e.g., PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007). NCA-NEPA-001 impermissibly challenges a regulation because NCAC did not seek specific permission as required by 10 C.F.R. § 2.335. Section 63.312 sets forth the required characteristics of the reasonably maximally exposed individual (RMEI) and specifies that the RMEI "[h]as a diet and living style representative of the people who now reside in the Town of Amargosa Valley, Nevada." 10 C.F.R. § 63.312(b).

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[71] The NCAC did not choose a three letter acronym or label for its contentions. For convenience, the Staff chose "NCA" as its acronym and assigned labels to its contentions.

Staff Response

As discussed further below, this contention does not comply with the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and does not present affidavits as required by regulation. In addition, this contention does not satisfy the contention requirements in § 2.309(f)(1). NCA-NEPA-001 is not supported by adequate supporting facts or expert opinion and does not raise a genuine dispute on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(v) and (vi). For these reasons, NCA-NEPA-001 is inadmissible.

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New*

Hampshire (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

NCAC has not explicitly addressed the criteria in 10 C.F.R. § 2.326. Moreover, NCAC does not demonstrate that the issue raised in NCA-NEPA-001 is a significant environmental issue. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A " 'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* Here, the contention is not accompanied by any affidavits, and so, NCAC has not met its burden of demonstrating that the issue raised in NCA-NEPA-001 is a significant environmental issue.

In addition, the petition does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27-29 (2006). A supplemental EIS is required only where new information " 'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.' " *Id.* at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a '*seriously* different picture of the environmental landscape.' " 63 NRC at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id.*

While NCA-NEPA-001 references a journal article, its only explanation of that article is it "demonstrates that assessments of risk need to take into account different lifestyle, different diet and life-ways." NCA Petition at 13 (citing Eric Frohmberg et al, *The Assessment of Radiation Exposures in Native American Communities from Nuclear Weapons Testing in Nevada*, RISK ANALYSIS, 20(1) (2000)). However, the contention does not address how DOE's consideration of these factors was inadequate, nor does the contention demonstrate that the radiological impact to the Newe would be "materially disproportionate and significant." *See* NCA Petition at 12. Because NCA-NEPA-001 does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2), the contention is inadmissible. In addition, as discussed below, NCA-NEPA-001 fails to meet the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NCA-NEPA-001 does not satisfy § 2.309(f)(1)(v) because no expert opinion is provided and only a conclusory statement regarding the referenced study is provided. *See* NCA Petition at 13 ("The study…demonstrates that assessments of risk need to take into account different lifestyle, different diet and life-ways."). The only other supporting information NCAC offers is the following assertion: "the Western Shoshone Nation discovered that Newe and Nuwuvi exposure from radioactive fallout from US testing of weapons of mass destruction was significant based on lifestyle differences such as diet, through the consumption of wild game". NCA Petition at 13. Attaching a document in support of a contention without any explanation of its significance does not provide an adequate basis for a contention. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-10, 47 NRC 288, 298-99 (1988); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Station, Units 1 & 2), LBP-02-4, 55 N.R.C. 49, 66 (2002) (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 & 2), CLI-98-25, 48 NRC 325, 348 (1998) ("Mere reference to documents does not, however, provide an adequate basis for a

contention."). Because NCA-NEPA-001 does not adequately explain the significance of the referenced study, the study does not provide an adequate basis to admit this contention. Accordingly, NCA-NEPA-001 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NCA-NEPA-001 argues that the FEIS and SEIS are inadequate because they fail to address a culturally appropriate estimate of radiation exposure to Native Americans. NCA Petition at 12. However, DOE specifically addressed several comments relating to these issues in its FEIS. FEIS, Vol. III, at CR7-617 to 618, CR7-731 to 733. In addition, the FSEIS states

> DOE has not identified subsections of the population, including minority or low-income populations, that would receive disproportionate impacts, and it has identified no unique exposure pathways, sensitivities, or cultural practices that would expose minority or low-income populations to disproportionately high and adverse impacts.

FSEIS, Vol. I at 4-96. NCA-NEPA-001 does not demonstrate, nor even address, how DOE's treatment of health impacts to Native Americans is inadequate. NCA-NEPA-001 does not show how the analysis DOE conducted is different from an analysis performed in accordance with the study it cited. Further, NCA-NEPA-001 does not demonstrate that its proposed analysis would lead to materially disproportionate and significant impacts to the Newe. Therefore, NCA-NEPA-001 does not provide sufficient information to show a genuine dispute with the applicant and, therefore, should be rejected.

Therefore, as discussed above, the contention should be rejected.

NEI-NEPA-01 - INADEQUATE NEPA ANALYSIS FOR 90% TAD CANISTER RECEIPT DESIGN

> The Yucca Mountain Final Supplemental Environmental Impact Statement ("FSEIS") fails to analyze reasonably foreseeable environmental impacts that will result from DOE's proposal to receive up to 90% of spent nuclear fuel ("SNF") at Yucca Mountain in Transport, Aging, and Disposal ("TAD") canisters.

NEI Petition at 40. NEI alleges in this contention that the FSEIS fails to analyze certain reasonably foreseeable environmental impacts resulting from DOE's proposal to receive up to 90% of SNF at the repository in TAD canisters. *See* NEI Petition at 41. In particular, NEI asserts that those impacts will result from the necessary unloading of spent fuel rods from dual-purpose canisters (DPC) and bare fuel casks (BFC) that must take place before reloading the same fuel rods into TAD canisters at reactor sites. *See* NEI Petition at 42. This unloading and reloading process must occur, NEI alleges, because more than 10% of existing spent nuclear fuel will reside in DPCs and BFCs by the time the repository is slated to open in 2020. *See* NEI Petition at 42. Moreover, NEI also asserts that DOE's FSEIS failed to analyze the impacts and cost of the generation and transportation of low-level radioactive waste (LLRW) in the form of discarded DPCs and BFCs. *See* NEI Petition at 42.

Staff Response

The Staff opposes NEI-NEPA-01 because it does not meet the requirements of 10 C.F.R. § 2.326. It also does not demonstrate that a genuine dispute exists with regard to the application or FSEIS, as required by 10 C.F.R. § 2.309(f)(1). For these reasons discussed further below, NEI-NEPA-01 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented."

10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, NEI states that the contention meets the requirements of § 2.326(a) as the issue raised is "timely raised in [NEI's] petition for intervention and concerns a significant environmental issue." NEI Petition at 44. In addition, NEI argues, "[h]ad DOE correctly estimated [the number of truck] shipments, its EIS would have been altered." *Id.* However, this is not sufficient to meet the motion to reopen standard. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel

Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

NEI argues that DOE failed to reasonably analyze reasonably foreseeable environmental impacts that will result from the 90% TAD transport case, in particular these impacts are purported to be the creation of additional LLRW that must be managed and transported to disposal sites. NEI Petition at 40. However, NEI presents no specific evidence regarding the magnitude or costs of these impacts. NEI simply provides speculative aggregate estimates of the number of canisters that will need to be reloaded to meet the 90% TAD proposal and notes that current LLRW repositories are widely dispersed and do not necessarily accept all categories of LLRW. *See* NEI Petition at 42. Thus, these statements are not properly supported with the necessary technical detail and analysis to paint a "'*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28 (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). NEI also fails to address the reduced 75% TAD canister use option, presented by DOE at FSEIS Appendix A.2.1 at A-3, which concludes that such option would result in no increased transportation impact. NEI-NEPA-01 does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) and

51.109(a)(2), and for that reason is inadmissible. In addition, as explained below, the contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1)(vi). *10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application*

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). NEI objects to DOE's failure to analyze reasonably foreseeable impacts resulting from the 90% TAD proposal, but NEI does not recognize the 75% TAD canister receipt case presented by DOE at FSEIS Appendix A.2.1 at A-3, which concludes that this case would have ". . . little effect on transportation or repository-related impacts." NEI has not provided any explanation for why DOE's analysis does not properly bound likely impacts from 75% to 90% TAD canisterization scenarios. NEI does not claim that more than 25% of SNF will not be able to be received in TADs. Indeed, in a comment to DOE's FSEIS, NEI representative Rodney McCullum stated that the "objective of receiving no less than 75 percent, and perhaps up to 90 percent of the commercial used nuclear fuel in TADs is achievable." FSEIS Volume III Comment 1.6.3.2 (1744) at CR-291. Therefore, NEI fails to demonstrate that the issues it raises are material to the findings that NRC must make to support the action involved in this proceeding.

Therefore, for all of the foregoing reasons, NEI-NEPA-01 should be rejected.

NEI-NEPA-02 - OVERESTIMATE OF NUMBER OF TRUCK SHIPMENTS

> The Yucca Mountain Final Supplemental Environmental Impact Statement ("FSEIS") overestimates the radiological exposures that reactor and Yucca Mountain site workers will receive because it overestimates the number of spent nuclear fuel ("SNF") shipments to Yucca Mountain that will occur by truck.

NEI Petition art 44. NEI-NEPA-02 alleges that the Repository SEIS is insufficient because it overestimates potential radiological exposures to reactor and Yucca Mountain site workers due to overestimating the number of truck shipments of commercial spent nuclear fuel to the repository. NEI Petition at 44.

Staff Response

This contention does not meet the requirements of 10 C.F.R. § 2.326. It also does not demonstrate that the issue raised is material to the findings the NRC must make and does not present a genuine dispute with regard to the application or Repository SEIS, as required by 10 C.F.R. § 2.309(f)(1). For these reasons discussed further below, NEI-NEPA-02 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen

standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, NEI states that the contention meets the requirements of § 2.326(a) as the issue raised is "timely raised in [NEI's] petition for intervention and concerns a significant environmental issue." NEI Petition at 44. In addition, NEI argues, "[h]ad DOE correctly estimated [the number of truck] shipments, its EIS would have been altered." *Id.* However, this is not sufficient to meet the motion to reopen standard. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to

warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*. NEI argues that DOE has overestimated the number of truck shipments, and, consequently, the total number of shipments, of spent fuel to Yucca Mountain. NEI Petition at 44. As a result of this overstatement of shipments, NEI argues that DOE has also overstated the potential radiation exposure to workers at reactor sites. *Id.* at 47. NEI alleges that DOE overstates the total worker dose at reactor sites by 445 person-rem. *Id.* However, NEI presents no evidence that this alleged overestimate is significant or, if corrected, would paint a significantly different picture of the overall environmental impacts analyzed in the Repository SEIS. NEI-NEPA-02 does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2), and for that reason is inadmissible. In addition, as explained below, the contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements, including the Repository SEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC

11, 87 (1998). Supplementation of an EIS may be required to account for new information, but only where the additional circumstance could "affect the quality of the human environment in a significant manner or to a significant extent not already considered." *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (*citing Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987)).

In the present instance, the Repository SEIS estimates worker radiation exposures due to transportation of spent nuclear fuel to the repository. *See* Repository SEIS Table G-2. This analysis is based in part on an assumption that waste from seven reactor sites will ship waste to Yucca Mountain by truck. *Id.* at Table G-10. However, the contention alleges that spent fuel from six of these facilities will be transported via rail. NEI Petition at 46. NEI alleges that because truck transportation will result in a higher worker dose than rail transportation, overestimating the number of facilities whose spent fuel will be transported via truck overstates the worker dose by at least 445 person-rem. NEI Petition at 47. Even if this is true, NEI has not demonstrated that supplementing the EIS to decrease the stated worker dose would significantly impact the overall extent of impacts considered in the Repository SEIS.

In addition, NEI cites the requirement in 10 C.F.R. § 51.45(b)(1) that an environmental report discuss impacts "in proportion to their significance." However, NEI does not explain the import of this regulation in these particular circumstances. Nor does NEI demonstrate that DOE's discussion of worker doses is out of proportion to its overall significance. For this reason and the reasons discussed above, NEI-NEPA-02 does not demonstrate that the issue raised is material to the findings the NRC must make and therefore is inadmissible.

NEI-NEPA-03 - OVER-CONSERVATISM IN SABOTAGE ANALYSIS

> The Final Supplemental Environmental Impact Statement (SEIS) for the Yucca Mountain repository, in Section 4.1.8.4, discusses environmental consequences of hypothetical terrorist attacks at the repository site. (The sabotage analysis for a "representative scenario" is also presented in Appendix E of the SEIS.) The SEIS, in Section 6.3.4, also discusses transportation sabotage events and consequences. These discussions of the consequences of highly unlikely and speculative scenarios are unreasonable and unnecessary. Moreover, the analyses are based on unrealistic, overly conservative assumptions that result in hypothetical impacts that are significantly over-estimated.

NEI Petition at 48. NEI-NEPA-03 alleges that "[t]he extreme conservatism of DOE's approach diminishes the value of the SEIS as a public communications tool, because it could raise concerns that are not justified, increase licensing uncertainty, and delay licensing of the repository." NEI Petition at 49.

Staff Response

As discussed further below, this contention does not comply with the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not present any affidavits as required by regulation. In addition, this contention does not demonstrate a genuine dispute on a material issue of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi). For these reasons, NEI-NEPA-03 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that

are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" 63 NRC at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). Section 2.326(b) also requires supporting affidavits.

Here, NEI has not explicitly addressed the § 2.326 criteria, but asserts that “the contention is material to the issue of the NRC’s adoption of the SEIS under 10 C.F.R. §§ 51.109(b) and (c).” NEI Petition at 52. NEI has not suggested that DOE’s alleged “over-conservatism” presents a “significant safety or environmental issue.” *See* 10 C.F.R. § `2.326(a). NEI simply maintains that DOE’s sabotage analysis is “significantly over-estimated”, but NEI does not suggest that this over-conservatism is in any way an environmental or safety concern. *See* NEI Petition at 48. NEI does not present any alternatives to the analysis or suggest what the analysis should have been. That is, NEI has

not articulated that a different method of analysis would "paint a '*seriously* different picture of the environmental landscape'" from the current SEIS. *See Private Fuel Storage*, CLI-06-3, 63 NRC at 28 (internal citation omitted). Further, as discussed below, NEI has not shown that a different method of analysis would yield a “materially different result” for purposes of this proceeding. *See* 10 C.F.R. § 2.326(a). Therefore, NEI-NEPA-03 does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is inadmissible.

In addition, NEI has not complied with the requirement in 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) to file a supporting affidavit. The Table of Contents in NEI’s Petition lists which affidavits correspond to which contention, but it is clear that there is no corresponding affidavit associated with NEI-NEPA-03. Therefore, NEI-NEPA-03 should be rejected on this basis alone.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEI-NEPA-03 fails to show that a “genuine dispute exists with the applicant/licensee on a material issue of law or fact.” 10 C.F.R. § 2.309(f)(1)(vi). As discussed above, NEI’s argument is that DOE’s environmental analysis is “over-conservative” and this conservatism could “[diminish] the value of the SEIS as a public communications tool, because it could raise concerns that are not justified, increase licensing uncertainty, and delay licensing of the repository.” NEI Petition at 49. However, these concerns are not within the purview of interests protected under NEPA, and accordingly, not within the scope of DOE’s obligations under NEPA. NEPA requires agencies to take a "hard look" at all potential environmental consequences, *see Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 87 (1998), “subject to a 'rule of reason,' meaning that the assessment 'may be limited to the effects which are shown to have some likelihood of occurring.'" *Hydro Resources, Inc*, (PO Box 777, Crownpoint, New Mexico 87313), LBP-04-23, 60 NRC 441, 447 (2004), citing *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units

1 & 2), ALAB-455, 7 NRC 41, 48 (1978). Here, NEI's concerns are quite different. NEI does not demonstrate how its assertion that DOE's sabotage analysis would "[diminish] the value of the SEIS as a public communications tool" is a material issue of law or fact in this proceeding. *See* NEI Petition at 49. Further, NEI argues that DOE's purported "overly conservative" sabotage analysis is "not required" under NEPA, not that it is impermissible under NEPA. *See* NEI Petition at 55, 50-51. Therefore, NEI has failed to show a genuine dispute on a material issue of law or fact in this proceeding.

For the reasons set forth above, NEI-NEPA-03 is inadmissible because it fails to meet the heightened contention admissibility standards of 10 C.F.R. § 2.326(a), fails to submit a legally sufficient affidavit in accordance with 10 C.F.R. §§ 2.326(b) and 51.109(a)(2), and fails to show a genuine dispute in accordance with 10 C.F.R. § 2.309(f)(1)(vi).

NEV-NEPA-01— TRANSPORTATION SABOTAGE SCENARIOS

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsection 6.3.4.2 and Appendix G.8, regarding transportation sabotage events, fail to evaluate reasonably foreseeable attack scenarios that could result in significantly greater consequences than the scenarios considered by DOE. This deficiency is significant because, without considering reasonably foreseeable attack scenarios, there is no adequate disclosure of environmental impacts under NEPA. If reasonably foreseeable attack scenarios were added, the disclosure of radiological impacts could be materially different, thus the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1043. NEV-NEPA-01 alleges that the FSEIS is deficient because in analyzing sabotage event scenarios, DOE failed to consider "reasonable multiple weapon events" and only analyzed "'a weapon or device' " in sabotage event scenarios involving rail and truck casks loaded with commercial spent fuel. *Id.* Nevada argues that multiple weapon events would "vastly increase the potential radiation exposure to the public." *Id.*

Staff Response

As discussed further below, this contention fails to meet the § 2.326 standards and does not present affidavits as required by regulation. Accordingly, NEV-NEPA-01 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a

Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" 63 NRC at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria and thus, NEV-NEPA-01 should be rejected on this basis. In addition, Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-

Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-01 appears to be associated with affidavits from Robert Halstead, Steven Frishman, and Michael Thorne. All three affidavits state that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Affidavit of Robert J. Halstead Affidavit ¶ 2; Attachment 20, Affidavit of Steven Frishman ¶ 2; Attachment 3, Affidavit of Michael Thorne Affidavit ¶ 2. Attachment B to each of the affidavits consist of a list of contentions adopted by Mr. Halstead, Mr. Frishman, and Dr. Thorne, respectively. In each affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2; Frishman Affidavit ¶ 2; Thorne Affidavit ¶ 4. These lists are neither signed nor initialed by the affiants, and there is no other indication that the affiants reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavits specify which statements in the contention are attributable to either or both, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to the affiants. Neither the contention nor the affidavits explains the personal knowledge or facts upon which the affiants based his opinion. Accordingly, NEV-NEPA-01 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2), and is inadmissible on that basis.

NEV-NEPA-02 - TRANSPORTATION SABOTAGE CLEANUP COSTS

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsection 6.3.4.2 and Appendix G.8 regarding transportation sabotage events, and FSEIS Appendix G.9.7 regarding cost of cleanup after accidents, fail to provide an estimate of the cost of cleanup and other economic impacts following a sabotage event that resulted in release of radioactive materials, even though DOE assumes that cleanup would occur. This deficiency is significant because, without considering the cleanup costs of reasonably foreseeable attack scenarios, there is no adequate disclosure of environmental impacts under NEPA. If the cleanup costs of reasonably foreseeable attack scenarios were added, the disclosure of radiological impacts could be materially different, thus the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1048. NEV-NEPA-02 alleges that because DOE did not provide an estimate of the cleanup cost and other economic impacts following a sabotage attack, DOE has not made adequate disclosure of the environmental impacts under NEPA. *Id.* NEV-NEPA-02 presupposes that the postulated sabotage event scenarios discussed therein are credible, which is the subject of NEV-NEPA-01.

Staff Response

In its response to NEV-NEPA-01, the Staff submits that NEV-NEPA-01 does not meet the 10 C.F.R. § 2.326 criteria, the expert affidavits are not legally sufficient, and thus the contention is inadmissible. Here, NEV-NEPA-02 also fails to comply with § 2.326 and is not supported by a legally sufficient affidavit. Accordingly, NEV-NEPA-02 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning

adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard include the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" 63 NRC at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria and thus, NEV-NEPA-02 is inadmissible on this basis. In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc. (American Centrifuge Plant),* CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC

142, 181 (1998). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-02 appears to be associated with an affidavit from Robert Halstead. Mr. Halstead's affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Affidavit of Robert J. Halstead ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, Mr. Halstead acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. *Id*. This list is neither signed nor initialed by Mr. Halstead and there is no other indication that Mr. Halstead reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention itself nor Mr. Halstead's affidavit specifies which statements in the contention are attributable to Mr. Halstead, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Mr. Halstead. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinions. NEV-NEPA-02 does not comply with the requirements of 10 C.F.R. § 2.326 and fails to submit a legally sufficient affidavit.

For the foregoing reasons, NEV-NEPA-02 is inadmissible.

NEV-NEPA-03 - TRANSPORTATION ACCIDENT CLEANUP COSTS

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Appendix G.9.7, regarding the cost of cleanup from transportation accidents, fails to provide verifiable estimates of the costs of cleanup following severe transportation accidents that resulted in release of radioactive materials. This deficiency is significant because, without considering reasonably foreseeable transportation accidents and their effects including cleanup costs, there is no adequate disclosure of environmental impacts under NEPA. If reasonably foreseeable transportation accidents and their effects including cleanup costs were properly considered, the disclosure of radiological impacts could be materially different, thus the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1052. In NEV-NEPA-03, Nevada asserts that the FSEIS is deficient because it "fails to provide verifiable estimates of the costs of cleanup following severe transportation accidents that resulted in release of radioactive materials." *Id*.

Staff Response

As explained further below, this contention does not meet the requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). For this reason, NEV-NEPA-03 is inadmissible. In addition, the contention does not meet the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The

motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape.'" *Id*. (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts that the alleged "deficiency is significant because, without considering reasonably foreseeable transportation accidents and their effects including cleanup costs, there is no adequate

disclosure of environmental impacts under NEPA" and also asserts that if "reasonably foreseeable transportation accidents and their effects including cleanup costs were properly considered, the disclosure of radiological impacts could be materially different." NEV Petition at 1052. This bare assertion is not sufficient to show that the issue raised in the contention is significant nor to demonstrate that, if true, the issue raised in the contention would make a material difference with respect to DOE's NEPA analysis or the Staff's adoption recommendation. Moreover, the affidavits offered in support of the contention are deficient, as discussed further below. In addition, neither the affidavits nor the contention explain the basis for the opinions offered by the affiants. Without further detail and analysis, the contention does not meet the "deliberately heavy" evidentiary burden set by the motion to reopen criteria. *See Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 22). NEV-NEPA-03 does not meet the heightened contention admissibility criteria of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2). On that basis, the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on

personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED R. CIV. P. 56.

NEV-NEPA-03 appears to be associated with affidavits from Robert Halstead and Steven Frishman. Both affidavits state that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Halstead Affidavit ¶ 2; NEV Petition, Attachment 20, Frishman Affidavit ¶ 2. Each Attachment B to the affidavits consists of lists of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit" or "Contentions Adopted By Steven A. Frishman In Accordance With Affidavit." In each affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2; Frishman Affidavit ¶ 2. These lists are neither signed nor initialed by the affiants, and there is no other indication that either affiant reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavits specify which statements in the contention are attributable to either or both, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to both affiants. Neither the contention nor the affidavits explains the personal knowledge or facts upon which Mr. Halstead or Mr. Frishman based his opinion. NEV-NEPA-03 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the requirements of 10 C.F.R. § 2.309(f)(1) and is therefore inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts

or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

Nevada provides a citation to a report, previously considered in DOE's FSEIS at page 6-23 and Appendix G at page G-57, to support its assertion that DOE's estimate of the cost of cleanup following a severe transportation accident resulting in the release of radioactive materials is in error. "Worst Case Credible Nuclear Transportation Accidents: Analysis for Urban and Rural Nevada," (Aug. 1, 2001) (LSN NEV000002194). The radiological impacts and cleanup costs estimated in this report for a "worst case" transportation accident (on which cleanup costs would be based) were discussed in DOE's FSEIS at page 6-23 and Appendix G at pages G-55 through G-57. Nevada has not provided sufficient support to show that reconsideration of this report would "paint a '*seriously*' different picture of the environmental landscape" from the current FSEIS. In addition, Nevada references a second, more recent report that purportedly re-examines and updates earlier cost estimates. "Potential Consequences of a Successful Sabotage Attack on a Spent Fuel Shipping Container: Updated Analysis Revised Final Version," (Nov. 1, 2008) (LSN NEV000005444). This second report relates to sabotage incidents, and Nevada provides no explanation of the relationship between the potential incidents described in the report and DOE's transportation accident cleanup cost analysis. Thus, this second report does not provide appropriate factual support for NEV-NEPA-03. NEV-NEPA-03 is not adequately supported by fact or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(v). For this reason, the contention is inadmissible.

NEV-NEPA-04 - SHARED USE OPTION

> Final Environmental Impact Statement for a Rail Alignment, DOE/EIS 0369 (06/2008) ("Rail Alignment FEIS" or "RA FEIS") Subsections 4.2.1 and 4.2.10, incorporated by reference in Section 6.4 of the Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") (see FSEIS at 6-1), fail to adequately evaluate operational impacts of the shared use option generally, and specifically fail to evaluate the potential operational impacts of induced traffic growth. This deficiency is significant because, without fully considering the operational impacts of shared use under common carrier obligations, there is no adequate disclosure under NEPA. If a reasonable discussion of the operational impacts of the shared use option was included, the disclosure of shared use operational impacts could be materially different. Therefore, the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1057. NEV-NEPA-4 alleges that the Rail Alignment EIS's analysis of operational impacts from the shared use option allowing commercial traffic on the rail line to the repository was deficient. NEV Petition at 1057.

Staff Response

As discussed further below, the contention does not comply with the heightened environmental contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2), nor is the contention supported by a sufficient affidavit. In addition, the contention does not raise an issue that is material to the findings the NRC must make to issue a construction authorization and is not adequately supported by fact or expert opinion. For these reasons, NEV-NEPA-4 is not admissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented."

Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts without further explanation that the alleged

> deficiency is significant because, without fully considering the operational impacts of shared use under common carrier obligations, there is no adequate disclosure under NEPA. If a reasonable discussion of the operational impacts of the shared use option was included, the disclosure of shared use operational impacts could be materially different. Therefore the [2002 EIS and Repository SEIS] cannot be adopted by the NRC.

NEV Petition at 1057. Nor can it be inferred from the remainder of the contention that Nevada has raised a significant environmental issue or demonstrated that a materially different would be or would have been likely had the issue been considered initially.

In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of

qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

However, Nevada has not provided sufficient support to show that the issue raised in the contention is significant, nor has demonstrated that including additional analyses of the operational impacts of the shared use option would "paint a '*seriously* different picture of the environmental landscape" from the current Rail Alignment EIS. In the Rail Alignment EIS, DOE analyzes impacts from the shared use option, and found that they would be very similar to impacts from a dedicated rail line option. Rail Alignment EIS Chapter 4 at 4-32 to 4-33 and 4-356 to 4-358. In the contention, Nevada argues that DOE failed to consider reasonably foreseeable increases in rail traffic from the shared use option. NEV Petition at 1059. In support, Nevada offers information regarding general commercial usage of the rail

lines for coal shipments and potential sources of new coal shipments. NEV Petition at 1059-60. Nevada noted that "railroads are actively promoting use of Powder River Basin coal from Montana and Wyoming as fuel for new power plants" and noted the number of coal shipments required to power a new coal-fired power plant. *Id.* However, none of this information specifically relates to induced use of the Caliente rail line for commercial traffic. In addition, the contention is associated with an affidavit from Robert Halstead. As discussed further below, the affidavit is deficient. However, even if it were sufficient, neither the contention nor the affidavit explains the basis for Mr. Halstead's opinions. Without further details and analysis, the contention does not meet the "deliberately heavy" evidentiary burden of the motion to reopen standard. *See Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). The contention does not meet the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). On this basis, NEV-NEPA-04 is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the

affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-04 appears to be associated with an affidavit from Robert Halstead. Mr. Halstead's affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." Halstead Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, Mr. Halstead acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2. This list is neither signed nor initialed by Mr. Halstead and there is no other indication that Mr. Halstead reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention itself nor Mr. Halstead's affidavit specifies which statements in the contention are attributable to Mr. Halstead, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Mr. Halstead. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinions. NEV-NEPA-04 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). In the present instance,

the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted environmental impact statements, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

Nevada argues that DOE's analysis of impacts from the shared use option does not satisfy its obligation to "take a hard look at the potential environmental consequences of the proposed action." NEV Petition at 1058. While Nevada is correct that DOE must take a "hard look" at the potential environmental impacts of its proposed action, *see Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998), this examination "is subject to a 'rule of reason,' meaning that the assessment need not include every environmental effect that could potentially result from the action, but rather 'may be limited to the effects which are shown to have some likelihood of occurring.'" *Hydro Resources, Inc,* (PO Box 777, Crownpoint, New Mexico 87313), LBP-04-23, 60 NRC 441, 447 (2004) (citing *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 48 (1978)). Nor, as in the present instance, where a federal agency would be asked to supplement an environmental impact statement, need the agency take action every time an additional consideration is raised. Rather, supplementation is required where any additional information would "paint a '*seriously* different picture of the environmental landscape.'" *Private Fuel Storage*, CLI-06-3, 63 NRC at 28; *see also Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (citing *Sierra Club v. Froehlke,* 816 F.2d 205, 210 (5th Cir. 1987)).

Nevada alleges that DOE should have considered "induced traffic" along a shared rail line, and cites to information regarding the number of shipments of coal needed to fire a coal-

fired power plant for one year as an example of the type of induced traffic that DOE should have considered. NEV Petition at 1059. However, the information that Nevada cites to is too uncertain to demonstrate that such induced traffic is a reasonably foreseeable impact that DOE should have considered in the Rail Alignment EIS. Nor is such speculation sufficient to demonstrate that a supplement to the Rail Alignment EIS taking into account this information would "paint a '*seriously* different picture of the environmental landscape."

Based on the above, Nevada has not demonstrated that further analysis of impacts from the shared use option is necessary for the NRC to make the appropriate findings prior to issuing a construction authorization for the repository. For this reason, NEV-NEPA-04 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv). The contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of this contention, Nevada cites a comment filed by the state on the draft Rail Alignment EIS. The comment notes that: "Research into travel behavior has consistently shown that expanding infrastructure capacity leads to additional travel demand. The degree to which this "induced traffic" occurs varies according to the congestion on the corridor;

however, it is clear that the problem of induced traffic is real." NEV Petition at 1059 (citing State of Nevada Comments on DOE's Draft Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada – Nevada Rail Transportation Corridor – DOE/EIS-0250F-S2DE and DOE's Draft Environmental Impact Statement for a Rail Alignment for the Construction and Operation of a Railroad in Nevada to a Geologic Repository at Yucca Mountain, Nye County, Nevada – DOE/EIS-0369D (01/09/2008), LSN# NEV000004904 at 14). However, no citation to any research into travel behavior is provided, nor is the source of the opinion that "the problem of induced traffic is real" evident from the comment. Nevada also alleges that the shared use option "*could* result in large-scale rail shipments to coal-fired power plants, bio-fuels or other energy production facilities, and/or solid waste recycling and disposal facilities." NEV Petition at 1059 (emphasis added). As support for this speculation, Nevada states that "major railroads are actively promoting use of Powder River Basis coal from Montana and Wyoming as fuel for new power plants," and goes on to cite statistics regarding the number of train shipments of coal required annually to fuel a coal-fired plant. *Id.* at 1059-60. However, Nevada does not explain the likelihood of such shipments on the Caliente corridor. Nor does Nevada explain how this speculation relates to its conclusion that "[i]nduced traffic could result in shipments and resulting impacts, equal to or greater than repository shipments." *Id.* at 1060.

Moreover, to the extent that this information consists of expert opinion, it is inadequate. As discussed above, the affidavit from Mr. Halstead is deficient. Even if the affidavit were sufficient, however, neither it nor the contention explains the basis for Mr. Halstead's opinions as required. Nevada has not provided adequate support for NEV-NEPA-04 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

NEV-NEPA-05 - RADIOLOGICAL REGIONS OF INFLUENCE FOR TRANSPORTATION

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsections 3.2.2 and 6.4.1, and Final Environmental Impact Statement for a Rail Alignment, DOE/EIS 0369 (06/2008) ("Rail Alignment FEIS" or "RA FEIS") (incorporated by reference in the FSEIS at 6-1) Subsection 3.2.10, which address the radiological regions of influence for transportation, fail to apply the preferred method of analysis consistently for transportation impacts in Nevada and nationally. This failure is significant because without consistently evaluating the radiological regions of influence for transportation DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the FSEIS and the RA FEIS, neither document can be adopted by the NRC.

NEV Petition at 1061. NEV-NEPA-05 alleges that both the Repository SEIS and Rail Alignment EIS are deficient because neither contains sufficiently detailed information regarding exposed populations and health and safety impacts for the radiological regions of influence (ROI) along existing rail and highway routes in Nevada and nationwide. NEV Petition at 1063.

Staff Response

As discussed further below, the contention does not comply with the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2), and does not include the required affidavit. In addition, the contention does not comply with 10 C.F.R. § 2.309(f)(1) because it does not demonstrate that the issue raised is material to the findings the NRC must make to issue the construction authorization and is not adequately supported by fact or expert opinion. For these reasons, NEV-NEPA-05 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to

adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the

proponent. *Oyster Creek,* CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts without further explanation that the alleged

> failure is significant because without consistently evaluating the radiological regions of influence for transportation DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the [Repository] SEIS and the [Rail Alignment] EIS, neither document can be adopted by the NRC.

NEV Petition at 1061. This statement alone is not sufficient to meet the motion to reopen standard. The contention alleges that DOE should included a more detailed site-specific discussion of dose impacts within the ROI in areas of Nevada other than the Caliente and Mina corridors, and provides some information on the number of individuals living in the Las Vegas metropolitan area. However, DOE has already provided information regarding dose rates in Nevada along transportation routes, Repository SEIS App. G at G-109 to G-110, and Nevada has provided no new information that "'raises new concerns of sufficient gravity such that another, formal in-depth'" analysis of dose rates along existing Nevada transportation routes is necessary. Thus, the contention has not demonstrated that a materially different result would be or would have been likely had the information raised in the contention been considered initially. Nor has Nevada provided sufficient information to support its assertion that the alleged failure is significant. The contention provides some information regarding the population within the radiological regions of influence for transportation to the repository, NEV Petition at 1063, and the contention is associated with an affidavit from Robert Halstead. NEV Petition, Attachment 7, Affidavit of Robert Halstead. However, as discussed below, Mr. Halstead's affidavit is deficient. Moreover, neither the contention nor the affidavit

explains the basis for Mr. Halstead's opinion. This scant record is not sufficient to meet the high evidentiary burden set by 10 C.F.R. § 2.326(a)(2). *See Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). Because NEV-NEPA-05 does not meet 10 C.F.R. §§ 2.326(a) and 51.109(a)(2), it is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-05 appears to be associated with an affidavit from Robert Halstead. Mr. Halstead's affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." Halstead Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, Mr. Halstead acknowledges that counsel for Nevada intended to prepare the list after he

signed the affidavit. Halstead Affidavit ¶ 2. This list is neither signed nor initialed by Mr. Halstead and there is no other indication that Mr. Halstead reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention itself nor Mr. Halstead's affidavit specifies which statements in the contention are attributable to Mr. Halstead, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Mr. Halstead. Mr. Halstead's *curriculum vitae* is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinions. NEV-NEPA-05 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised in the contention "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's

obligations under NEPA.

Nevada argues that DOE must include more detailed information for ROIs along existing transportation routes in parts of Nevada other than along the Caliente and Mina rail corridors, and implies that this supplementation of DOE's environmental analyses is required for DOE to satisfy the requirement that it take a hard look at environmental consequences of the repository. NEV Petition at 1062. While DOE must take a "hard look" at the potential environmental impacts of its proposed action, *see Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998), this examination "is subject to a 'rule of reason,' meaning that the assessment need not include every environmental effect that could potentially result from the action, but rather 'may be limited to the effects which are shown to have some likelihood of occurring.'" *Hydro Resources, Inc,* (PO Box 777, Crownpoint, New Mexico 87313), LBP-04-23, 60 NRC 441, 447 (2004) (citing *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 48 (1978)). Nor, as in the present instance, where a federal agency would be asked to supplement an environmental impact statement, need the agency take action every time an additional consideration is raised. Rather, supplementation is required where any additional information would paint a 'seriously different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28; see also *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (citing *Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987)).

DOE analyzed radiological dose impacts along existing transportation routes in Nevada in the Repository SEIS based on computer model projections that take into account populations and projected transportation rates along representative transportation routes. Repository SEIS App. G at Table G-46. DOE also provided detailed population data for the radiological ROIs along the Caliente rail alignment. Rail Alignment EIS Chapter 3 at 3-301 to 3-310 and 3-657 to 3-659. Nevada claims that this same type of detailed population

information must be included for other areas along existing transportation route in Nevada, specifically in the Las Vegas metropolitan area. NEV Petition at 1063. However, Nevada does not demonstrate that including such information in DOE's environmental documents would result in a *seriously* different picture of impacts from the repository and related transportation, especially where the Repository SEIS already includes dose rates along existing transportation routes in Nevada for both normal operations and accident or sabotage conditions.

Based on the above, Nevada has not demonstrated that further detailed information on exposed populations and health and safety impacts along existing transportation routes in Nevada is necessary for the NRC to make the appropriate findings prior to issuing a construction authorization for the repository. For this reason, NEV-NEPA-05 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv). The contention is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of NEV-NEPA-05, Nevada cites to information regarding population levels in the Las Vegas metropolitan area near existing transportation routes. NEV Petition at 1063.

Nevada does not explain however, the relationship of this information to the sufficiency of DOE's impacts analysis, which considers doses to populations along representative rail routes in Nevada. In addition, this contention is associated with an affidavit from Robert Halstead, and so it seems that the information included in support of the affidavit is also Mr. Halstead's expert opinion. However, neither the contention nor the affidavit explains the basis for Mr. Halstead’s opinions as required. Nevada has not provided adequate support for NEV-NEPA-05 as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

NEV-NEPA-06 - CALIENTE RAIL ALIGNMENT PLAN AND PROFILE INFORMATION

> Final Environmental Impact Statement for a Rail Alignment, DOE/EIS 0369 (06/2008) ("Rail Alignment FEIS" or "RA FEIS") Subsection 2.2.1, and the supporting references therein, fail to provide sufficiently detailed plan and profile information about the proposed Caliente rail alignment to support the impact findings reported in RA FEIS Chapter 4 and incorporated by reference in the Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") at FSEIS at 6-1 and 6-32. This deficiency is significant because, without sufficiently detailed rail alignment plan and profile information, the impact findings reported in RA FEIS Chapter 4, incorporated by reference in FSEIS Chapter 6, cannot be verified, and thus the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1065. NEV-NEPA-06 alleges that the Rail Alignment EIS does not adequately describe plan and profile information about the proposed Caliente rail alignment. NEV Petition at 1065.

Staff Response

As discussed further below, this contention does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and is not supported by a sufficient affidavit. In addition, the contention does not demonstrate that the issue raised is material to the findings the NRC must make to issue a construction authorization for the repository and is not adequately supported by fact or expert opinion, as required by 10 C.F.R. § 2.309(f)(1). For these reasons, the contention is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve

disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Nevada does not explicitly address the motion to reopen criteria. The contention does state without further explanation that the alleged "deficiency is significant because without sufficiently detailed rail alignment plan and profile information, the impact findings reported in [Rail Alignment EIS] Chapter 4, incorporated by reference in [Repository SEIS] Chapter 6, cannot be verified." NEV Petition at 1065. Nor can it be inferred from the remainder of the contention that Nevada has raised a significant environmental issue or demonstrated that a materially different would be or would have been likely had the issue been considered initially.

In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a

possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Nevada argues that the Rail Alignment EIS does not include sufficiently detailed plan and profile drawings for the Caliente rail corridor alignment. NEV Petition at 1067. Nevada identifies several alleged deficiencies in the plan and profile drawings on which DOE based the Rail Alignment EIS, *id.* at 1067-68, but does not explain the basis of these assertions or the significance of the deficiencies. Nevada further asserts that detailed plan and profile information is necessary for individuals and reviewers to "accurately determine the impacts of rail construction and operation on privately owned and leased lands traversed by the alignment." *Id.* at 1068. Nevada does not explain why the current plan and profile makes this determination impossible, or why the ability of individuals and reviewers to make this determination is significant or even required under NEPA. Without further detailed explanation of the support for Nevada's position, the contention cannot meet the "deliberately heavy" evidentiary burden associated with a motion to reopen. *See Oyster Creek*, CLI 08-

28, 68 NRC at __ (slip op. at 22). Finally, Nevada alleges that resolving the asserted issues with the plan and profile information "will undoubtedly result in some significant changes to the proposed rail line." *Id.* at 1069. While Nevada attributes this assertion to a report entitled "Evaluation of Alignment Development Report and Engineered Plan and Profile Drawing Set," it is not clear from reading the report what the precise basis is for the opinions contained therein. NEV Petition at 1069 (citing Richard C. Moore, "Evaluation of Alignment Development Report and Engineered Plan and Profile Drawing Set" (Dec. 3, 2008) (LSN NEV000005456)). The contention is associated with an affidavit from Robert Halstead, although neither the affidavit nor the contention states explicitly which statements in the contention are attributable to Mr. Halstead. As discussed further below, the affidavit is deficient. However, even if it were sufficient, neither the contention nor the affidavit explains the basis for Mr. Halstead's opinions. Without such detailed discussion, the statements in the contention amount to "[b]are assertions and speculations" and are not sufficient to support a showing that the issue raised in the contention is significant or, if true, would result in a material difference in the environmental analysis. *See Oyster Creek,* CLI 08-28, 68 NRC at __ (slip op. at 22). NEV-NEPA-06 has not met the motion to reopen requirements of 10 C.F.R. § 2.326(a). On this basis, the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of*

Energy (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-06 appears to be associated with an affidavit from Robert Halstead. The affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." Halstead Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2. This list is neither signed nor initialed by Mr. Halstead, and there is no other indication that he reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavit specifies which statements in the contention are Mr. Halstead, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to him. Mr. Halstead's *curriculum vitae* is attached to his affidavit, but without further explanation, it is difficult to discern the intended range of his expertise for this contention. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinion. NEV-NEPA-06 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised therein "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). To that end, DOE has submitted environmental impact statements, including the Rail Alignment EIS, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

As discussed above, Nevada argues that DOE should include more detailed plan and profile information for the Caliente rail corridor alignment because such information is necessary for DOE to comply with its NEPA obligations. NEV Petition at 1066. However, while NEPA requires DOE to take a "hard look" at all potential environmental consequences, *see Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998), this examination "is subject to a 'rule of reason,' meaning that the assessment need not include every environmental effect that could potentially result from the action, but rather 'may be limited to the effects which are shown to have some likelihood of occurring.'" *Hydro Resources, Inc,* (PO Box 777, Crownpoint, New Mexico 87313), LBP-04-23, 60 NRC 441, 447 (2004) (citing Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 48 (1978)). Nor, as in the present instance, where a federal agency would be asked to supplement an environmental impact statement, need the agency take action every time an additional consideration is raised. Rather, supplementation is required where any additional information would "paint a '*seriously* different picture of the environmental landscape.'" *Private Fuel* Storage, CLI-06-3, 63 NRC at 28; see also *Hydro Resources, Inc*. (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (citing *Sierra Club v. Froehlke,* 816 F.2d 205, 210 (5th Cir. 1987)). Although

Nevada makes vague allegations that the information in the Rail Alignment EIS lacks sufficient detail, Nevada has not shown that inclusion of further detail would materially affect the Rail Alignment EIS to such an extend that the supplemented document would "paint a 'seriously different picture of the environmental landscape." Moreover, Nevada argues that such details are required so that potentially affected individuals and other reviewers can "independently verify the cut and fill requirements, the sub-ballast and ballast requirements, the right of way requirements, the disturbed area estimates, other major project attributes, and the resulting construction costs and impacts." NEV Petition at 1068. Although one of the major purposes of NEPA is to ensure that the public is adequately informed of the major impacts of federal actions, *see, e.g. Wisconsin v. Weinberger*, 745 F.2d 412, 416 (7th Cir. 1984) (citing *Weinberger v. Catholic Action of Hawaii/Peace Education Project,* 454 U.S. 139, 143 (1981)), Nevada does not provide any support for the assertion that informing the public through the NEPA process encompasses providing sufficient information to support detailed, independent verification of a project's details. Nevada has not demonstrated that the issue raised in NEV-NEPA-06 is material to the finding the NRC must make to issue the construction authorization. Because the contention does not meet the 10 C.F.R. § 2.309(f)(1)(iv) criterion, it is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R.§ 2.309(f)(1)(v). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment

of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

NEV-NEPA-06 alleges that resolving the asserted issues with the plan and profile information "will undoubtedly result in some significant changes to the proposed rail line," and attributes this assertion to a report the Moore report discussed above. *See* NEV Petition at 1069. However, it is not clear from reading the report what the precise basis is for the opinions contained therein, nor is the significance of the information in the report explained as otherwise required. The remainder of the contention appears to be attributable to the expert opinion of Robert Halstead, although this is never explicitly stated. As discussed above, Mr. Halstead's affidavit is deficient. However, even if the affidavit were acceptable, neither the affidavit nor the contention explains the basis for Mr. Halstead's opinions. NEV-NEPA-06 is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v), and, for that reason, the contention is inadmissible.

NEV-NEPA-07 - OVERWEIGHT TRUCKS

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsection 6.1.6, regarding use of overweight trucks for shipment of legal-weight truck casks, fails to systematically assess the impacts of using overweight trucks for spent fuel shipments to Yucca Mountain, nationally and in Nevada. This failure is significant because without assessing the impacts of using overweight trucks for spent fuel shipments DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the FSEIS and the "Final Environmental Impact Statement for a Rail Alignment," DOE/EIS 0369 (06/2008), LSN# DEN001593557 ("FEIS"), neither document can be adopted by the NRC.

NEV Petition at 1070. NEV-NEPA-07 alleges that the FSEIS is inadequate because it "fails to systematically assess the impacts of using overweight trucks for spent fuel shipments to Yucca Mountain, nationally and in Nevada." *Id*.

Staff Response

As discussed further below, this contention does not comply with 10 C.F.R. § 2.326(a)(3) and does not provide an adequate statement of supporting facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). Therefore, NEV-NEPA-07 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a

Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts without further explanation that the alleged "failure is significant because without assessing the impacts of using overweight trucks for spent fuel shipments DOE has failed to adequately assess their environmental impact, and because those environmental impacts could be materially different from that presented in the FSEIS and the [Rail Alignment FEIS], neither document can be adopted by the NRC." NEV Petition at 1070. Nor can it be inferred from the remainder of the contention that Nevada has raised a significant environmental issue or demonstrated that a materially different would be or would have been likely had the issue been considered initially.

In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is

analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id*. (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Nevada argues that DOE has failed to adequately assess the impacts of using overweight trucks for spent fuel shipments. NEV Petition at 1070. However, Nevada does not provide sufficient evidence to show that this deficiency is significant. Nevada offers no documentary support for the contention. NEV-NEPA-07 is associated with an affidavit from Robert Halstead. As discussed below, this affidavit is deficient, and in any event does not include any explanation of the basis for Mr. Halstead's opinions. This affidavit is not sufficient to meet the high evidentiary standard in the motion to reopen criteria. *See Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). In addition, Nevada has not demonstrated that the suggested assessment of the impacts of using overweight trucks will result in a material difference from the impacts already presented by DOE or a material difference with regard to the Staff's adoption determination. DOE included two studies of worker impacts from use of overweight trucks in the FSEIS. FSEIS at 6-5 to 6-8. These studies showed that the impacts from legal weight truck shipments and overweight truck shipments would be similar. *Id.* at 6-8. Nevada argues that DOE must also provide specific analyses of the

radiological impacts to safety inspectors and to members of the general public, but does not provide any explanation as to how this analysis would differ from DOE's present analyses. Further technical details and analysis are needed to support a demonstration that the issue raised, if true, would likely lead to a materially different result with respect to the EIS or the Staff's adoption determination. *See Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). NEV-NEPA-07 does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2).

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-07 appears to be associated with an affidavit from Robert Halstead. The affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition,

Attachment 7, Halstead Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2. This list is neither signed nor initialed by Mr. Halstead, and there is no other indication that he reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavit specifies which statements in the contention are Mr. Halstead's, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to him. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinion. NEV-NEPA-07 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" should "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455. A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site),

CLI-03-13, 58 NRC 195, 203 (2003). If parties rely on expert opinion, they must provide "something more than suspicions or bald assertions as the basis for any purported material factual disputes." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-99-35, 50 NRC 180, 194 (1999).

In NEV-NEPA-07, Nevada urges the inclusion of analyses that would "estimate the increased stop times and shipment times likely to result from state permit requirements," and that would analyze "the potential safety and security impacts of more frequent and possibly longer stops, which could increase opportunities for accidents, terrorism, and sabotage." NEV Petition at 1072-73. Nevada cites the fact that DOE includes in the FSEIS references to two studies that concluded that there would be two different worker doses resulting from use of overweight trucks. NEV Petition at 1070 (citing FSEIS Chapter 6 at 6-5 through 6-8). However, Nevada does not explain why including two different impact estimates in the FSEIS renders the FSEIS inadequate. Beyond stating that there is little relevant literature on the topic, Nevada offers no additional documentary support for the assertions that use of overweight trucks would be likely to result in more frequent or longer stops or increased overall ship times. The contention is referred to in an attachment to an affidavit from Robert Halstead, so, presumably the affidavit is intended to support otherwise unsupported assertions in the contention. However, the affidavit does not explain the basis for the assertions that use of overweight trucks would be likely to result in more frequent or longer stops or increased overall ship times. Without explanation, these statements amount to simple conjecture, and do not meet the requirement that Nevada explain the significance of the information relied on to support the contention. Therefore, NEV-NEPA-07 does not comply with 10 C.F.R. § 2.309(f)(1)(vi) and is inadmissible.

NEV-NEPA-08 - IMPACTS ON AESTHETIC RESOURCES

> Final Environmental Impact Statement for a Rail Alignment, DOE/EIS 0369 (06/2008) ("Rail Alignment FEIS" or "RA FEIS") Subsections 4.2.3, C.4.1.3, and D.1, regarding Caliente rail alignment aesthetic resources, fail to acknowledge unacceptable adverse impacts on a cultural resource of national and international significance, and fail to apply avoidance as the appropriate method of eliminating an unacceptable adverse impact that cannot be mitigated. The impact findings reported in Rail Alignment FEIS, Chapter 4, are incorporated by reference in Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Chapter 6. This deficiency is significant because without appropriately considering rail alignment impacts on aesthetic resources DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the FSEIS and the RA FEIS, neither document can be adopted by the NRC.

NEV Petition at 1074. NEV-NEPA-08 alleges that the Rail Alignment EIS is deficient because it does not adequately analyze impacts on the land sculpture installation "City" from the construction and use of the Caliente rail spur. Petition at 1074.

Staff Response

As discussed further below, the contention does not comply with the heightened admissibility requirements of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and does not include a legally sufficient affidavit. In addition, the contention does not demonstrate that the issue raised is material to the findings the NRC must make to issue a construction authorization as required by 10 C.F.R. § 2.309(f)(1)(iv). For these reasons, NEV-NEPA-08 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented."

10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. at 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts without further explanation that the alleged

> deficiency is significant because, without appropriately considering rail alignment impacts on aesthetic resources DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the [Repository SEIS and Rail Alignment EIS], neither document can be adopted by the NRC.

NEV Petition at 1091. Without further explanation and detail, this is not sufficient to meet the motion to reopen standard.

In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC at __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the

standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Here, in support of its assertion that DOE has underestimated impacts to City form construction and operation of the Caliente rail line, Nevada cites a comment on the draft Rail Alignment EIS regarding potential impacts to the artwork. NEV Petition at 1076-77. Nevada also cites press accounts of the artwork and a comment from the Association of Art Museum Directors. *Id.* at 1077. However, this type of information does not meet the high evidentiary standard required for a motion to reopen. *See Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16 and 22). This contention is also associated with an affidavit from Robert Halstead. However, as discussed further below, this affidavit is deficient. Moreover, neither the affidavit nor the contention explains the basis for Mr. Halstead's opinion regarding impacts to City. Without further details and analyses, Nevada has not met the burden of showing that the issue raised in NEV-NEPA-08 is significant, or that, if true, would be likely to have a material impact on DOE's NEPA analysis. NEV-NEPA-08 does not meet the heightened contention admissibility standards in 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is not admissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC __, __ (June 20, 2008) (slip op. at 8). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-08 appears to be associated with an affidavit from Robert Halstead. Mr. Halstead's affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Halstead Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, Mr. Halstead acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2. This list is neither signed nor initialed by Mr. Halstead and there is no other indication that Mr. Halstead reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention itself nor Mr. Halstead's affidavit specifies which statements in the contention are

attributable to Mr. Halstead, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Mr. Halstead. Mr. Halstead's *curriculum vitae* is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. In addition, from his CV, it does not appear that Mr. Halstead has any education or experience relevant to art history or another discipline that qualify him to provide an expert opinion on the significance of "City" or the severity of potential impacts to the sculpture. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinions. NEV-NEPA-08 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R § 2.309(f)(1)(iv). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

Nevada alleges that the analysis of impacts to "City" in the Rail Alignment EIS is inadequate to meet the requirement that DOE take a hard look at potential environmental consequence of a proposed action. NEV Petition at 1075 (citing *Northwest Ecosystem Alliance v. Rey*, 380 F. Supp. 2d 1175, 1185 (W.D. Wash. 2006)). However, Nevada does not explain why DOE's consideration of impacts to "City" was inadequate to meet this requirement. NEPA is a procedural requirement that does not mandate any particular result for the decision maker; the statute "merely prohibits uninformed—rather than unwise—agency action." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989). Although when specifically addressing materiality, Nevada never explains its reasoning behind the assertion that DOE's analysis does not constitute a "hard look," it appears from the remainder of the contention that the main issue is that DOE's analysis reaches a different conclusion than that preferred by commenters on the Draft Rail Alignment EIS. NEV Petition at 1076-78. DOE concluded in the Rail Alignment EIS that visual impacts would be "small to large, but temporary" during construction of the rail spur and small during operations. Rail Alignment EIS at 4-67 and 4-88. The commenters on the Draft Rail Alignment EIS and members of the arts community disagree with DOE's assessment. *See* NEV Petition at 1076-78. A disagreement, however, does not demonstrate that DOE has not met the procedural requirements of NEPA.

In addition, Nevada states that "DOE has the primary and nondelegable responsibility to complete the" environmental impact analysis for the repository. NEV Petition at 1075. The contention, though, does not include any additional discussion of this point, and it is unclear what relationship this requirement has to the issues discussed in the remainder of the contention.

Based on the above, Nevada has not demonstrated that further analysis of impacts on "City" from construction and operation of a rail line in the Caliente corridor is necessary for the NRC to make the appropriate findings prior to issuing a construction authorization for the

repository. For this reason, NEV-NEPA-08 does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv). The contention is inadmissible.

NEV-NEPA-09 - TRANSPORTATION SABOTAGE RISK VS. AT-REACTOR STORAGE

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsection 6.3.4 and Appendix G.8, regarding transportation sabotage events, describe what DOE considers to be reasonably foreseeable sabotage events involving repository shipments in urban areas that could result in radiological consequences. FSEIS Subsection 2.2, the No-Action Alternative, fails to consider reasonably foreseeable sabotage events at one or more of the 76 identified commercial reactor or DOE storage sites. This deficiency is significant because, without equally considering reasonably foreseeable sabotage events under both the Proposed Action and the No-Action Alternative, DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the FSEIS the document cannot be adopted by the NRC.

NEV Petition at 1079. NEV-NEPA-09 alleges that by not considering in the FSEIS "the consequences of a sabotage event under the No-Action Alternative" and the "full benefits of storing spent nuclear fuel at reactor sites under the No-Action Alternative", "[t]he effect has been to bias the cost/benefit analysis towards the Proposed Alternative." *Id.* at 1081.

Staff Response

As discussed further below, this contention does not meet the heightened contention admissibility requirements of 10 C.F.R. § 2.326 and is not supported by a legally sufficient affidavit. For these reasons, the contention is inadmissible.

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 13-14), citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria and thus, NEV-NEPA-09 is inadmissible. In addition, Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an

"affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-09 appears to be associated with an affidavit from Robert Halstead. The affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Affidavit of Robert J. Halstead ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. *Id*. This list is neither signed nor initialed by Mr. Halstead, and there is no other indication that he reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavit specifies which statements in the contention are Mr. Halstead's, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to him. Therefore, NEV-NEPA-09 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone.

For all of the foregoing reasons, NEV-NEPA-09 should be rejected.

NEV-NEPA-10 - LONG-TERM RADIATION EXPOSURE FOLLOWING SABOTAGE

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsection 6.3.4.2 and Appendix G.8 regarding transportation sabotage events, and Appendix G.9.7 regarding cost of cleanup after accidents, fail to provide a realistic estimate of population radiation doses and the cost of cleanup following a sabotage event. Since insurance coverage available under the Price-Anderson Act (Section 170 of the Atomic Energy Act of 1954, as amended) would be inadequate, Congress would have to supplement the cleanup costs. Also, the period of cleanup could be greater than one year, implying an increase in radiation exposure over that assessed by DOE. This deficiency is significant because, without considering a reasonable cost of cleanup following a sabotage event, DOE has failed to adequately assess its environmental impact, and because that environmental impact could be materially different from that presented in the FSEIS, the document cannot be adopted by the NRC.

NEV Petition at 1083. NEV-NEPA-10 alleges 1) DOE has underestimated the potential costs of cleanup resulting from a transportation sabotage event; 2) the value of the cleanup would exceed the Price-Anderson insurance limits, requiring Congress to act to appropriate the necessary funds; and 3) this delay in funding would result in increased radiation doses to the public. NEV Petition at 1083.

Staff Response

NEV-NEPA-10 presupposes that the postulated sabotage event scenarios discussed therein are credible, and discusses the cleanup costs of such sabotage scenarios, which are the subjects of other Nevada NEPA contentions, as discussed below. NEV-NEPA-10 fails to comply with 10 C.F.R. §§ 2.326 and 2.309(f)(1), and is not supported by a legally sufficient affidavit. Accordingly, NEV-NEPA-10 should be rejected.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set

forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, Nevada fails to address the criteria of section 2.326(a) related to its claim that higher cleanup costs imply an increase in radiation exposure to the public. *See* NEV Petition at 1083. Nevada does assert that since DOE did not estimate cleanup costs following transportation sabotage events, ""[t]his deficiency is significant because, without considering a reasonable cost of cleanup following a sabotage event, DOE has failed to adequately assess its environmental impact." NEV Petition at 1083. But, the Staff notes that this quoted language is nearly identical to that used in NEV-NEPA-02, relating to the cost of cleanup following a sabotage event. *See* NEV Petition at 1048. If Nevada addresses the section 2.326(a) criteria implicitly, it does so related to the cost of cleanup, not related to the actual subject of NEV-NEPA-10 — long-term radiation exposure following sabotage. NEV-NEPA-10 therefore fails to address the section 2.326(a) heightened admissibility standards, and without further detail and analysis, the contention does not meet the "deliberately heavy" evidentiary burden set by the motion to reopen criteria. *See*, *Amergen Energy Co., LLC*

(License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 22). Therefore, NEV-NEPA-10 does not meet the requirements of 10 C.F.R. § 2.326(a), and is inadmissible on that basis alone.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). The APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository) LBP-08-10, 67 NRC at 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-10 appears to be associated with an affidavit from Robert Halstead. Mr. Halstead's affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Affidavit of Robert J. Halstead Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, Mr. Halstead acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. *Id*. This list is neither signed nor initialed by Mr. Halstead and there is no other indication that Mr. Halstead reviewed the list, and therefore

had knowledge of the contents of the list, prior to it being filed. Neither the contention itself nor Mr. Halstead's affidavit specifies which statements in the contention are attributable to Mr. Halstead, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Mr. Halstead. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinions. The contention mentions the Resnikoff report, but this report relates to clean-up costs. It is not clear from the contention or the affidavit on what facts or knowledge Mr. Halstead based his opinions on long-term exposure. Accordingly, NEV-NEPA-10 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2).

In addition, the contention fails to meet the criteria set forth in 10 C.F.R. § 2.309(f)(1)(i) and (v).

10 C.F.R. § 2.309(f)(1)(i): Specific Statement of the Legal or Factual Issue

An admissible contention must provide a specific statement of the legal or factual issue sought to be raised. 10 C.F.R. § 2.309(f)(1)(i). The APAPO Board emphasized that "potential parties shall also strive to frame narrow, single-issue contentions." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 454. Here, the Staff notes that Nevada has alleged a multi-issue contention. Nevada argues that 1) DOE has underestimated the potential costs of cleanup resulting from a transportation sabotage event, 2) the value of the cleanup would exceed the Price-Anderson insurance limits, requiring Congress to act to appropriate the necessary funds, and 3) this delay in funding would result in increased doses to the public. NEV Petition at 1083. NEV-NEPA-10 presupposes that the postulated sabotage event scenarios discussed therein are credible, which is the subject of NEV-NEPA-01. In its response to NEV-NEPA-01, the Staff submits that NEV-NEPA-01 does not meet the 10 C.F.R. § 2.326 standards, the expert affidavits are not legally sufficient, and thus the

contention is inadmissible. Moreover, NEV-NEPA-10 focuses largely on the allegation that DOE has underestimated the potential costs of cleanup following a sabotage event, which is the subject of NEV-NEPA-02. In its response to NEV-NEPA-02, the Staff submits that NEV-NEPA-02 also fails to meet § 2.326, is not supported by a legally sufficient affidavit, and thus is inadmissible. Accordingly, in response to NEV-NEPA-10, the Staff will focus on Nevada's remaining argument, that delays in cleanup resulting from higher costs would lead to a greater radiation exposure to the public.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-NEPA-10 is not supported by "references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). NEV-NEPA-10 provides no quantitative or independent assessments of the alleged increased dose to the public after a delay in cleanup. As discussed above, the contention mentions the Resnikoff report, but this report relates to clean-up costs. Nevada has not met its burden of providing supporting facts or expert opinion on its radiation exposure claim, and NEV-NEPA-10 amounts to a mere "notice" pleading. A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Therefore NEV-NEPA-10 should be rejected.

For the foregoing reasons, NEV-NEPA-10 should be rejected.

NEV-NEPA-11 - SABOTAGE RISK, PRESSURIZED CASK

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsections 2.1 and 2.2 compare the preferred alternative of disposing nuclear fuel at the proposed Yucca Mountain repository to the no-action alternative of storing spent nuclear fuel at commercial reactor sites, however, FSEIS Subsections 6.1.11 and 6.3.4.2 fail to properly account for cask pressurization in a sabotage event during transportation. The cost/benefit ratio is therefore biased towards the preferred alternative. This deficiency is significant because without appropriately considering a sabotage event during transportation, DOE has failed to adequately assess its environmental impacts, and because those environmental impacts could be materially different from that presented in the FSEIS, the document cannot be adopted by the NRC.

NEV Petition at 1087. NEV-NEPA-11 alleges that the FSEIS is deficient because it fails "to account properly for pressure within the internal canisters within transportation overpacks, which would increase the release of radioactive material during a sabotage event." *Id.* Nevada maintains that while DOE accounts for pressurization only "being due to the release of pressurized gas from damaged fuel assemblies," "in reality, storage casks in use at reactor sites are pressurized with helium to an internal pressure of 100 psig." *Id.* at 1089.

Staff Response

As discussed further below, this contention does not comply with the heightened contention admissibility standards of 10 C.F.R. § 2.326 and does not present a legally sufficient affidavit as required by regulation. For these reasons, NEV-NEPA-11 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented."

Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" 63 NRC at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts that the alleged "deficiency is significant because, without appropriately considering a sabotage event during transportation . . . those environmental impacts could be materially different from that presented in the FSEIS." NEV Petition at 1087. This base assertion is not sufficient to demonstrate that the issue raised in the contention is significant nor to demonstrate that, if true, the issue raised in the contention would make a material difference with respect to DOE's NEPA analysis or the Staff's adoption recommendation. Moreover, the affidavits offered in support of the contention are deficient, as discussed further below. In addition,

neither the affidavits nor the contention explain the basis for the opinions offered by the affiants. Without further detail and analysis, the contention does not meet the "deliberately heavy" evidentiary burden set by the motion to reopen criteria. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 22).

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-11 appears to be associated with an affidavit from Robert Halstead. Mr. Halstead's affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Affidavit of Robert J. Halstead Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With

Affidavit." In the affidavit, Mr. Halstead acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. *Id.* This list is neither signed nor initialed by Mr. Halstead and there is no other indication that Mr. Halstead reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention itself nor Mr. Halstead's affidavit specifies which statements in the contention are attributable to Mr. Halstead, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Mr. Halstead. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinions. Therefore, this contention fails to submit a legally sufficient affidavit in accordance with 10 C.F.R. §§ 2.326(b) and 51.109(a)(2).

This contention does not comply with the heightened contention admissibility standards of 10 C.F.R. § 2.326 and does not present a legally sufficient affidavit as required by regulation. Accordingly, NEV-NEPA-11 should be rejected.

NEV-NEPA-12 - TRANSPORTATION RISK ASSUMPTIONS

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsection 6.3 regarding national transportation events, and Appendices G.6 through G.8, specifically regarding transportation event assumptions, fail to use the consistent application of weather and release fraction assumptions to all reasonably foreseeable accident and sabotage scenarios. This deficiency is significant because, without the consistent application of weather and release fraction assumptions to transportation accident or sabotage events, DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the FSEIS and the "Final Environmental Impact Statement for a Rail Alignment," DOE/EIS 0369 (06/2008), LSN# DEN001593557 ("Rail Alignment FEIS" or "RA FEIS"), neither document can be adopted by the NRC.

NEV Petition at 1091. NEV-NEPA-12 alleges that DOE has inconsistently applied weather and release fraction assumptions in its analyses of reasonably foreseeable transportation accidents and sabotage events and, therefore, these analyses are inadequate.

Staff Response

The contention complies with the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1). However, as discussed below, Nevada fails to comply with heightened admissibility standards for contentions related to DOE's NEPA analysis, it should therefore be dismissed.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. at 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id.* at 28 (quoting Wisconsin v. Weinberger, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape.'" *Id*. at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires

supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts without further explanation that the alleged "deficiency is significant because, without the consistent application of weather and release fraction assumptions to transportation accident or sabotage events, DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the" Repository SEIS and Rail Alignment EIS, "neither document can be adopted by the NRC." NEV Petition at 1091. Although Nevada should have specifically referenced and addressed the criteria of section 2.326(a), the remainder of the contention contains sufficient information to infer that all three § 2.326(a) criteria have been met, if the expert affidavit is accepted as legally sufficient.

In addition, while the contention contains sufficient expert and documentary support to comply with 10 C.F.R. § 2.309(f)(1)(v), the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006)* (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. U.S. Dep't of Energy (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in

evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-12 appears to be associated with affidavits from Robert Halstead and Steven Frishman. Both affidavits state that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Halstead Affidavit ¶ 2; NEV Petition, Attachment 20, Frishman Affidavit ¶ 2. Each Attachment B to the affidavits consists of lists of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit" or "Contentions Adopted By Steven A. Frishman In Accordance With Affidavit." In each affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2; Frishman Affidavit ¶ 2. These lists are neither signed nor initialed by the affiants, and there is no other indication that either affiant reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavits specifies which statements in the contention are attributable to either or both, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to both affiants. Neither the contention nor the affidavits explains the personal knowledge or facts upon which Mr. Halstead or Mr. Frishman based his opinion. Although NEV-NEPA-12 complies with the requirements of 10 C.F.R. § 2.309(f)(1), the contention is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2). Further because of the inadequacies of Mr. Halstead's affidavit, Nevada failed to demonstrate that a materially different result would be or would have been likely. One of Nevada's main documentary sources for the contention is a spreadsheet of calculations prepared by Mr. Halstead, but neither the contention nor the affidavit explains how Mr.

Halstead developed the calculations or what import he attaches to the calculations. NEV-NEPA-12 should not be admitted.

NEV-NEPA-13 - GRAZING IMPACTS

> Final Environmental Impact Statement for a Rail Alignment, DOE/EIS 0369 (06/2008) ("Rail Alignment FEIS" or "RA FEIS") Subsections 4.2.2.2.3.2 and 4.3.2.2.3.2, incorporated by reference in Section 6.4 of the Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") (see FSEIS at 6-1), acknowledge that DOE failed to apply the appropriate methodology in assessing the impacts of railroad construction on up to 32 active Bureau of Land Management (BLM) grazing allotments. This deficiency is significant because, without accurately assessing impacts of railroad construction on grazing allotments, there is no adequate disclosure of alternatives under NEPA. If reasonable alternative corridors, alignments, and segments were assessed, the disclosure of impacts on grazing allotments could be materially different, thus the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1095. NEV-NEPA-13 alleges that the Rail Alignment EIS is deficient because it applied an inappropriate methodology "to estimate the potential loss of animal unit months for up to 20 active grazing allotments along the proposed Caliente rail alignment [and] up to 12 active grazing allotments along the proposed Mina rail alignments." *Id.* at 1095-96.

Staff Response

As discussed further below, this contention does not comply with the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and does not present affidavits as required by regulation. In addition, this contention does not demonstrate that the issue presented is material to the finding the NRC must make to issue the construction authorization and is not supported by adequate fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1). For these reasons, NEV-NEPA-13 is inadmissible.

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set

forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the

proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing Public Service Co. of New Hampshire (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts without further explanation that the alleged

> deficiency is significant because, without accurately assessing impacts of railroad construction on grazing allotments, there is no adequate disclosure of alternatives under NEPA. If reasonable alternative corridors, alignments, and segments were assessed, the disclosure of impacts on grazing allotments could be materially different, thus [DOE's NEPA documents] cannot be adopted by the NRC.

NEV Petition at 1095. This statement alone is not sufficient to meet the motion to reopen criteria. In addition, nothing in the contention provides sufficient support for the assertion that the alleged deficiency in the analysis of grazing impacts is significant. Nor has Nevada demonstrated that including the suggested assessments in the Rail Alignment EIS would "paint a '*seriously* different picture of the environmental landscape'" from the current Rail Alignment EIS.

DOE's analysis of grazing impacts assumes that "there is uniform forage distribution across the entire [grazing] allotment" that will be made unavailable during construction of a rail line to the repository. Rail Alignment EIS at 4-46. DOE recognizes that it is unlikely that there will be uniform forage distribution across any allotment disturbed, but also notes that calculation of actual loss of forage will not be possible until the Bureau of Land Management (BLM) issues a right-of-way grant for construction of a rail line in the future. *Id.* at 4-46 to 4-47. DOE then presents an analysis of potential impacts on grazing for various alternative segments within the Caliente corridor. Rail Alignment EIS at 4-49 to 4-54 and Table 4-15 to Table 4-22. Nevada argues DOE should have conducted a site-specific assessment of impacts on grazing, and also seems to suggest that this site-specific assessment should

assume that the rail line will be located in the best forage areas. NEV Petition at 1098. However, as discussed further below with respect to materiality, an impact based on this assumption is not reasonably foreseeable and therefore is not required to be included in DOE's NEPA analysis at this time. Since a site-specific analysis of grazing impacts that assumes maximum negative impacts does not need to be included in the Rail Alignment EIS at this time, Nevada has not demonstrated that the issue raised in the contention would likely lead to a materially different result. In addition, Nevada provides insufficient support to meet the motion to reopen criteria. The contention is associated with affidavits from Robert Halstead and Steven Frishman, and it seems that these statements are intended to represent the expert opinions of the affiants. However, as discussed further below, these affidavits are deficient. Moreover, neither the affidavits nor the contention explain the supporting reasons for the affiants' opinions. This is not sufficient to meet the high evidentiary standard set by 10 C.F.R. § 2.326(a). Therefore, NEV-NEPA-13 does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity, "indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of

Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED R. CIV. P. 56.

NEV-NEPA-13 appears to be associated with affidavits from Robert Halstead and Steven Frishman. Both affidavits state that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Affidavit of Halstead ¶ 2; NEV Petition, Attachment 20, Affidavit of Frishman ¶ 2. Attachment B to the affidavits consist of a lists of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit" and "Contentions Adopted By Steven A. Frishman In Accordance With Affidavit." In each affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2; Frishman Affidavit ¶ 2. These lists are neither signed nor initialed by the affiants, and there is no other indication that either affiant reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavits specify which statements in the contention are attributable to either or both, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to both affiants. Each affiant's *curriculum vitae* is attached to his affidavit, but without further explanation, it is difficult to discern the intended range of each affiant's expertise. In addition, it is not readily apparent from either CV that either Mr. Halstead or Mr. Frishman has any education or experience in land management, agriculture, or another related field which would qualify him to provide an expert opinion as to impacts on grazing from construction of a rail line in the Caliente corridor. Neither the contention nor the affidavits explain the personal knowledge or

facts upon which Mr. Halstead or Mr. Frishman based his opinion. NEV-NEPA-13 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

As discussed above, Nevada argues that DOE must include a site-specific analysis of impacts on grazing. However, while NEPA requires DOE to take a "hard look" at all potential environmental consequences, *see Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998), this examination "is subject to a 'rule of reason,' meaning that the assessment need not include every environmental effect that could potentially result from the action, but rather 'may be limited to the effects which are shown to have some likelihood of occurring.'" *Hydro Resources, Inc*, (PO Box 777, Crownpoint, New Mexico 87313), LBP-04-23, 60 NRC 441, 447 (2004) (citing *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 & 2), ALAB-455, 7 NRC 41, 48 (1978)). Nor, as in the present instance, where a federal agency would be asked to supplement an environmental impact statement, need the agency take action every time an additional

consideration is raised. Rather, supplementation is required where any additional information would "paint a '*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-3, 63 NRC at 28; *see also Hydro Resources, Inc*. (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (citing *Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987)). Here, the analysis Nevada seeks assumes that the rail line will necessarily be constructed through the most productive allotments, NEV Petition at 1098, but has not demonstrated that such an assumption is reasonable prior to BLM issuing a right-of-way to DOE for rail construction. Nor has Nevada demonstrated that including this information would seriously alter the analysis of grazing impacts along the Caliente alignment.

Nevada also argues that "DOE has the primary and non-delegable responsibility to complete" the analysis of environmental impacts related to the repository. NEV Petition at 1096. Nevada offers no explanation as to how DOE has abdicated this responsibility. For the above, reasons, Nevada has not demonstrated that the issue raised in NEV-NEPA-13 is material to the findings the NRC must make to issue a construction authorization for the repository. NEV-NEPA-13 does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R. § 2.309(f)(1)(v). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment

of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

In support of NEV-NEPA-13, Nevada provides only a comment provided by a member of the public regarding the Draft Rail Alignment EIS. *See* NEV Petition at 1097-98 (citing comment from Richard C. Moore, P.E. (LSN# DEN001586806)). The comment itself cites no documents other than the Draft Rail Alignment EIS, so it must be assumed that the comment consists only of Mr. Moore's opinion. However, there is no information, in the comment or Nevada's contention, which explains the basis for Mr. Moore's expertise. In addition, as discussed above, there are two affidavits associated with the contention. Both affidavits are deficient. Even if they were sufficient, however, neither affidavit explains on what basis either affiant adopts Mr. Moore's opinions. The contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). For that reason, NEV-NEPA-13 is inadmissible.

NEV-NEPA-14 - DEFERRED ASSESSMENT OF RAILROAD CONSTRUCTION IMPACTS ON GRAZING

> "Final Environmental Impact Statement for a Rail Alignment," DOE/EIS 0369 (06/2008), LSN# DEN001593557 ("Rail Alignment FEIS" or "RA FEIS") Subsections 4.2.2.2.3.2 and 4.3.2.2.3.2, incorporated by reference in Section 6.4 of the Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") (see FSEIS at 6-1) illegally defer assessment of impacts of railroad construction on individual BLM grazing allotments to a future action by the Bureau of Land Management (BLM). DOE has no authority to transfer its NEPA responsibilities to BLM, and DOE has no authority to assign to BLM the responsibility for mitigation of impacts resulting from DOE's proposed action. If the appropriate assessment and disclosure of railroad construction impacts on individual grazing allotments is deferred, the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1100. NEV-NEPA-14 alleges that DOE illegally defers assessment of site-specific impacts on individual BLM grazing allotments until after BLM issues a right-of-way for construction of a rail line across such allotments. NEV Petition at 1100.

Staff Response

This contention appears to raise primarily legal issues. As discussed further below, this contention does not comply with the heightened admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include sufficient affidavits. In addition, the contention does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1). For these reasons, NEV-NEPA-14 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning

adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10,

32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria and makes no other assertion that even obliquely references the criteria. Nor can it be inferred from the remainder of the contention that Nevada has raised a significant environmental issue or demonstrated that a materially different result would be or would have been likely had the issue been considered initially. In support of the contention, Nevada makes several statements asserting flaws in DOE's analysis of grazing impacts. NEV Petition at 1102-3. Because this contention is associated with affidavits from Robert Halstead and Steven Frishman, is seems that these statements are intended to represent the expert opinion of the affiants. However, as discussed further below, these affidavits are deficient. Moreover, neither the affidavits nor the contention explain the basis for the affiants' opinions. This is not sufficient to meet the high evidentiary standard set by 10 C.F.R. § 2.326(a). NEV-NEPA-14 does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2). On that basis, the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a

motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-14 appears to be associated with affidavits from Robert Halstead and Steven Frishman. Both affidavits state that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Halstead Affidavit ¶ 2; NEV Petition, Attachment 20, Frishman Affidavit ¶ 2. Each Attachment B to the affidavits consists of lists of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit" or "Contentions Adopted By Steven A. Frishman In Accordance With Affidavit." In each affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2; Frishman Affidavit ¶ 2. These lists are neither signed nor initialed by the affiants, and there is no other indication that either affiant reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavits specifies which statements in the contention are attributable to either or both, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to both affiants. Each affiant's *curriculum vitae* is attached to his affidavit, but without further explanation, it is difficult to discern the intended range of each affiant's expertise. In addition, it is not readily apparent from either CV that either Mr. Halstead or Mr. Frishman has any education or experience in land management, agriculture, or another related field which would qualify him to provide an expert opinion as to impacts on grazing from construction of a rail line in the Caliente corridor. Neither the contention nor the affidavits explains the personal knowledge or facts upon which Mr. Halstead or Mr. Frishman based his opinion. NEV-NEPA-14 is not

accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). In the present instance, the findings the NRC must make are that "after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

Here, Nevada argues that DOE has not satisfied its NEPA obligations because it defers "assessment of impacts of railroad construction on individual BLM grazing allotments to a future action by" BLM. NEV Petition 1100. However, Nevada has not demonstrated that DOE's alleged failure violates NEPA. NEPA requires DOE to take a "hard look" at all reasonably foreseeable environmental consequences, *see Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998), but this examination need not be completed in one single analysis. On the contrary, "tiering" an environmental analysis is acceptable under NEPA, and, in some instances, encouraged. 40 C.F.R. §§ 1502.20 and 1508.28. Tiering is appropriate when the analysis follows from "a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis" as well as "when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues

already decided or not yet ripe." 10 C.F.R. § 1508.28. The exact grazing allotments affected by construction of a rail line through the Caliente corridor will not be determined with specificity until BLM issues a right-of-way for the rail line, and therefore the issue is not yet ripe. Nevada has not demonstrated why, under these circumstances, tiering the environmental analysis is inappropriate.

Nevada also alleges that "DOE has the primary and non-delegable responsibility to complete" the environmental impacts analysis for the repository. NEV Petition at 1101. However, CEQ regulations expressly permit, and even encourage, agencies to rely on environmental analyses completed by other agencies. *See, e.g.,*40 C.F.R. §§ 1500.4 ("Reducing Paperwork"), 1502.20 ("Tiering"), and 1502.21 ("Incorporation by Reference"). If BLM completes an assessment of the impacts on grazing allotments at the time it issues a right-of-way to DOE, DOE may rely on that assessment. *See Sierra Club v. U.S. Army Corps of Eng'rs*, 295 F.3d 1209, 1215 (11th Cir. 2002) (holding that an agency is not required to duplicate work done by another federal agency that has jurisdiction over a project).

Nevada has not demonstrated that DOE's current analysis of impacts to grazing allotments from construction of the rail line violates the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. Nor has Nevada demonstrated that DOE has improperly segmented its impacts analysis. NEV-NEPA-14 does not demonstrate that the issue raised is material to the finding NRC must make pursuant to 10 C.F.R. § 63.31(c) to issue a construction authorization for the repository, as required by 10 C.F.R. § 2.309(f)(1)(iv). On this basis, the contention is inadmissible.

NEV-NEPA-15 – TAD SHIPMENT ESTIMATES

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsection 6.1.7 and Appendix G.3, regarding shipment estimates that assume the use of transportation, aging and disposal ("TAD") canisters at commercial reactor sites, fail to consider reasonable shipment estimates based on the existing standard contracts and current modal capabilities of the shipping sites. Thus, the FSEIS fails to provide a sufficient basis for the transportation impacts estimated in Sections 6.3 and 6.4. In addition, the FSEIS fails to provide a basis for determining if DOE can comply with SAR Subsection 1.5.1.1, which presumes 90 percent of commercial spent nuclear fuel will be shipped in TAD canisters. Because DOE failed to consider reasonable shipment estimates, particularly regarding the modal mix between rail and truck, DOE has failed to adequately assess their environmental impacts, and because those environmental impacts could be materially different from that presented in the FSEIS and the "Final Environmental Impact Statement for a Rail Alignment," DOE/EIS 0369 (06/2008), LSN# DEN001593557 ("Rail Alignment FEIS" or "RA FEIS"), neither document can be adopted by the NRC.

NEV Petition at 1105. NEV-NEPA-15 challenges DOE's analysis in the FSEIS that it is possible to achieve the 90% TAD canisterization objective as stated in the SAR and the failure to adequately consider the mix of transport modes that must be used. *See id*. Nevada asserts that NRC cannot adopt the FSEIS or the Rail Alignment FEIS because DOE failed to consider reasonable shipping estimates. *See id*.

Staff Response

The Staff opposes the admissibility of this contention. As discussed further below, this contention does not comply with the heightened admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include a legally-sufficient affidavit. In addition, the contention does not comply with all the requirements of 10 C.F.R. § 2.309(f)(1). For these reasons, NEV-NEPA-15 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R.

§ 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original).

The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, merely stating "DOE has failed to adequately assess [the environmental impacts of reasonable shipping estimates], and because those environmental impacts *could* be materially different from that presented in the FSEIS and [Rail Alignment EIS], neither document can be adopted by the NRC." NEV Petition at 1105 (emphasis added). It cannot be inferred from the remainder of the contention that Nevada has demonstrated that a materially different result would be or would have been likely had the issue been considered initially. For instance, Nevada asserts that "it is *highly unlikely* that DOE can achieve the 90 percent TAD compliance threshold. . ." NEV Petition at 1107 (emphasis added). First, DOE notes that the 90% TAD canisterization scenario is approximate: "DOE would operate the repository with a *primarily canistered approach* in which the generator sites would package the majority (potentially as much as 90 percent) of commercial spent nuclear fuel in TAD canisters." FSEIS Subsection 2.1.1 at 2-9 (emphasis in original). Thus, DOE uses the word "shall" in SAR Section 1.5.1.1 with regard to 90-percent TAD canisterization not prescriptively, but as an objective. As discussed in greater detail below, DOE has bounded the impacts of TAD canisterization scenarios between 75% and 90%. *See* FSEIS Appendix A.2.1 at A-2 to A-5.

Second, Nevada acknowledges, but does not address, an alternative DOE analysis presented in FSEIS Appendix A.2.1 at A-3, of a possible 75% TAD canister case where DOE concludes that ". . . a deviation in the percentage of implementation of TAD canisters at the reactor sites would not measurably affect the transportation impacts." *See* NEV Petition at 1107. This bounding analysis indicates that that the transportation impacts that are the subject of this contention are not measurably different between 75% and 90% TAD

canisterization scenarios. *See* FSEIS Appendix A.2.1 at A-3. Nevada statement that "even DOE acknowledges . . . that it cannot meet the 90-percent TAD objective" because DOE allows for 88% of SNF shipping in TAD canisters in the 90% case is inapposite because Nevada has not shown that the DOE bounding analysis is not appropriate. NEV Petition at 1107. The Appendix A analysis noted above suggests that if the impact of differences between 75% and 90% cases is small, so too would the impact of differences between 88% and 90% TAD be insignificant. Thus, Nevada has fallen short of the § 2.326(a)(3) requirement that it "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially."

Because this contention is associated with an affidavit from Robert Halstead, it seems that these statements are intended to represent the expert opinion of the affiant. However, as discussed further below, this affidavit is deficient. Moreover, neither the affidavit nor the contention explains the supporting reasons for the affiant's opinions. This is not sufficient to meet the high evidentiary standard set by 10 C.F.R. § 2.326(a). NEV-NEPA-15 does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2). On that basis, the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10,

67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

NEV-NEPA-15 appears to be associated with an affidavit from Robert Halstead. The affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 2, Affidavit of Robert J. Halstead at ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2. This list is neither signed nor initialed by the affiant, and there is no other indication that the affiant reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavit specifies which statements in the contention are attributable to him, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to the affiant. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinion. NEV-NEPA-15 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply with all of the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts

or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

As noted above, Nevada relies heavily on the statement that "it is *highly unlikely* that DOE can achieve the 90 percent TAD compliance threshold . . ." NEV Petition at 1107 (emphasis added). Nevada cites data from an NEI presentation reflecting current estimates of fuel in dry storage to describe the difficulty of DOE's task, but does not offer evidence that goes beyond speculation to support the contention that DOE failed to consider reasonable shipping estimates. *See* NEV Petition at 1107-08. Moreover, Nevada fails to address the comment to DOE's FSEIS submitted by NEI representative Rodney McCullum which states that the "objective of receiving no less than 75 percent, and perhaps up to 90 percent of the commercial used nuclear fuel in TADs is achievable." FSEIS Volume III Comment 1.6.3.2 (1744) at CR-291. Further, the articles cited by Nevada offer no interpretations of the potential transportation impacts that are different from those presented in DOE analyses—they merely suggest the difficulty of meeting the 90 percent case, but do not provide the necessary support under § 2.309(f)(1)(v). As already noted above, Nevada does not support the proposition that DOE failed to consider reasonable shipping estimates when the state offers no discussion or attempt to rebut the FSEIS Appendix A.2 findings that even a 75 percent TAD shipping case would not "measurably affect transportation impacts." Therefore,

NEV-NEPA-15 is not adequately supported by facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v), and the contention is inadmissible.

For all of the foregoing reasons, NEV-NEPA-15 should be rejected.

NEV-NEPA-16 - REPRESENTATIVE ROUTES

> Final Supplemental Environmental Impact Statement for Yucca Mountain, DOE/EIS 0250S-F1 (07/2008) ("FSEIS") Subsection 6.3 and Appendices A.3 and G.2, regarding "representative routes" that DOE could use for shipments of spent nuclear fuel and high-level radioactive waste, fail to identify the affected environment for repository transportation impacts nationally and in Nevada. FSEIS Appendix A3 states that DOE used historic rail industry practices to estimate the representative rail routes that would be used under the Proposed Action. However, DOE's representative rail routes incorporate rail industry practices in only a generic way, and ignore information provided to DOE by potential rail carriers and by affected states about other potential rail routes, different from those identified by DOE, that could be used for repository shipments. This deficiency is significant because without appropriately considering specific impacts from specific rail routes, DOE has failed to adequately assess environmental impacts, and because those environmental impacts could be materially different from that presented in the FSEIS the document cannot be adopted by the NRC.

NEV Petition at 1110. In NEV-NEPA-16, Nevada alleges that the FSEIS is inadequate because it does not consider specific rail routes. *Id*.

Staff Response

As explained further below, this contention does not comply with the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not include the required affidavit. In addition, this contention fails to meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1) because it does not demonstrate that the issue raised is material to the findings the NRC must make, and is not adequately supported by facts or expert opinion. NEV-NEPA-16, therefore, is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to

adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts that the alleged deficiency identified in the contention, the use of representative rail routes in the Repository SEIS, "is significant because without appropriately considering specific impacts from specific rail routes, DOE has failed to adequately assess environmental impacts, and because those environmental impacts could be materially different from that presented in the [Repository SEIS] the document cannot be adopted by the NRC." NEV Petition at 1110. This statement is not sufficient to satisfy the motion to reopen criteria. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not

enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id.* As discussed below, the contention does not actually provide any support for the assertion that the alleged error is significant, nor does the contention demonstrate that the use of Nevada's preferred methodology for identifying potential rail route would actually lead to a materially different result with regard to the EIS or the Staff's adoption determination. In addition, as discussed further below, the supporting affidavit provided by Robert Halstead is deficient and, moreover, neither the affidavit nor the contention explains the basis for his opinions. NEV-NEPA-16 does not meet the "deliberately heavy" evidentiary burden associated with a motion to reopen, and, therefore, does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2). NEV-NEPA-16 should be rejected on this basis alone.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC

practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

NEV-NEPA-16 appears to be associated with an affidavit from Robert Halstead. Mr. Halstead's affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 7, Halstead Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit." In the affidavit, Mr. Halstead acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2. This list is neither signed nor initialed by Mr. Halstead and there is no other indication that Mr. Halstead reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention itself nor Mr. Halstead's affidavit specifies which statements in the contention are attributable to Mr. Halstead, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Mr. Halstead. Neither the contention nor

the affidavit explains the personal knowledge or facts upon which Mr. Halstead based his opinions. NEV-NEPA-16 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *High-Level Waste Repository*, LBP-08-10, 67 NRC at 455.

In the Repository SEIS, DOE identifies potential representative rail routes used to estimate the transportation impacts presented in the Repository SEIS. FSEIS at A-5. These representative rail routes were based on historic industry routing practices. *Id.* Nevada claims that this methodology violates the requirement under NEPA that DOE take a "hard look" at the potential consequences of the proposed action. NEV Petition at 1111. The purpose of the "hard look" requirement is to "foster both informed decision-making and informed public participation." *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992). Here, Nevada argues that DOE failed to take the requisite hard look at transportation impacts because DOE did not analyze routes suggested by railroads and affected states. However, Nevada does not argue that, had DOE analyzed these routes, the impacts presented in the Repository SEIS would have been any greater or different than the impacts currently analyzed in the Repository SEIS. Nevada, accordingly, fails to show that the Repository SEIS does not fully inform both the decision-maker and the general public

regarding the potential impacts of the repository, or is otherwise inadequate. Therefore, Nevada has not raised an issue that is material to the adequacy of the EIS, and NEV-NEPA-16 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). If parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). As support for its assertion that DOE should analyze the routes suggested by railroads and affected states, Nevada does suggest an alternative methodology for identifying the national transportation routes to the repository. NEV Petition at 1112-13 However, Nevada provides no expert opinion or documentation that the representative routes provided in the FSEIS do not provide a reasonable estimate of the environmental impacts from shipments to the proposed repository. Nor does Nevada provide any support (or even suggest) that the routes developed under Nevada's suggested methodology would result in a different or more exact calculation of impacts. In addition, as discussed above, the affidavit from Mr. Halstead is deficient and, moreover, no explanation is provided in either the affidavit or the contention for Mr. Halstead's opinions, as required. NEV-NEPA-16 lacks the requisite factual support and therefore is inadmissible.

NEV-NEPA-17 - NRC STAFF'S NEPA REVIEW

> Legal issue: NRC Staff's adoption determination violates NEPA, and therefore cannot support NRC's proposed action, because NRC Staff stated explicitly that it would not necessarily have arrived at the same NEPA conclusions on matters of fact or policy. This deficiency is significant, and if it were to be addressed in a satisfactory manner, the adoption decision could be materially different. As a result, the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1116. NEV-NEPA-17 alleges that the Staff's adoption determination was deficient because it did not replicate DOE's NEPA analyses and accordingly the Staff could not state with certainty that it would have come to the same conclusions as DOE if it had completed its own independent NEPA review. *Id*.

Staff Response

Although this contention raises a legal issue, it must still comply with contention admissibility requirements applicable to other contentions. As discussed further below, this contention does not comply with the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not contain the required affidavit. In addition, the contention does not contain an adequate basis and does not provide sufficient information to show that there is a genuine dispute on a material issue of law as required by 10 C.F.R. § 2.309(f)(1). For these reasons, NEV-NEPA-17 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria, but asserts without further explanation that the alleged "deficiency is clearly significant from a legal perspective, and if it were to be addressed in a satisfactory manner by a more complete NRC Staff review, the adoption decision could be materially different." NEV Petition at 1117. This is not sufficient to meet the motion to reopen criteria. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323,

1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

While it may be appropriate to include less technical support for a primarily legal contention, Nevada must still meet the "deliberately heavy" burden set by 10 C.F.R. § 2.326 by providing a detailed analysis of the applicable legal requirements. However, Nevada does not offer an adequate explanation as to why this alleged deficiency is "clearly significant from a legal perspective." As discussed further below, Nevada does not cite to a single statute, regulation or judicial opinion that definitively mandates that the Staff state that it fully agrees with the conclusions reached in DOE's NEPA documents prior to recommending adoption. Nor does Nevada provide a clear argument that the statues and regulations it does cite should be interpreted as requiring the Staff to state that it fully agrees with DOE's NEPA analysis. There is not enough information presented in the contention to support the assertion that the alleged deficiency in the Staff's ADR is "clearly significant from a legal perspective." Therefore, NEV-NEPA-17 does not meet the motion to reopen criteria at 10 C.F.R. § 2.326(a) as required by § 51.109(a)(2), and the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although a supporting affidavit is required by regulation, Nevada has not included an affidavit in support of this contention, nor has Nevada offered any explanation for the omission. For this basis, NEV-NEPA-17 is inadmissible. As discussed further below, the contention also does not comply with all the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(ii): Brief Explanation of the Basis for the Contention

An admissible contention must provide a brief explanation of the basis for the contention, "indicating the potential validity of the contention." 10 C.F.R. § 2.309(f)(1)(ii); Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989) (referring to 10 C.F.R. § 2.714(b)(2)(ii), now 10 C.F.R. § 2.309(f)(1)(ii)). The basis of a contention must be set forth with reasonable specificity "to put the other parties on notice as to what issues they will have to defend against or opposed." *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), ALAB-899, 28 NRC 93, 97 (1988), aff'd sub nom. *Massachusetts v. NRC*, 924 F.2d 311 (D.C. Cir. 1991), cert. denied, 502 U.S. 899 (1991). Here, Nevada states only that Section 114(f)(4), "considered with 10 C.F.R. § 63.31(c), CEQ regulations, and case law under NEPA does not allow NRC to adopt DOE's EISs, and therefore use them to satisfy its own NEPA duties, without stating whether it fully agrees with them." NEV Petition at 1116. However, Nevada never identifies any particular CEQ regulation or case law supporting its position. Without understanding the foundation of Nevada's assertion that the Staff has not met its legal obligations, the other parties in the proceeding have no "notice as to what issues they will have to defend against." NEV-NEPA-17 does not comply with 10 C.F.R. § 2.309(f)(1)(ii) and is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). Nevada alleges that there is a genuine dispute as to whether it was appropriate for the Staff to include in its ADR a statement that its review of DOE's NEPA documents

> is neither a duplication of DOE's efforts nor a detailed review of

> all technical aspects of the analysis contained in the EISs. Further, an NRC staff determination of adoption of these EISs does not necessarily mean that NRC independently would have arrived at the same conclusions as DOE on matters of fact or policy.

EISADR at ES-1. Nevada states that Section 114(f)(4) of the NWPA, "considered with 10 C.F.R. § 63.31(c), CEQ regulations, and case law under NEPA, neither excuses the NRC from fully analyzing DOE's statements, nor allows the NRC to rely on DOE environmental impact statements without stating whether it fully agrees with them." NEV Petition at 1117. Nevada does not, however, cite to any specific CEQ regulation or judicial decision to support its assertion that the Staff's statement in the ADR violates the NWPA.

On the contrary, a detailed examination of the applicable statues, regulations, and caselaw shows that the Staff's decision to recommend adoption without stating that it fully agrees with every statement in DOE's EISs was permissible. The NWPA states that, any EIS prepared by DOE in connection with the repository

> shall, to the extent practicable, be adopted by the Commission in connection with the issuance by the Commission of a construction authorization and license for such repository. To the extent such statement is adopted by the Commission, such adoption shall be deemed to also satisfy the responsibilities of the Commission under [NEPA] and no further consideration shall be required, except that nothing in this subsection shall affect any independent responsibilities of the Commission to protect the public health under the Atomic Energy Act of 1954.

42 U.S.C. § 10134(f)(4) (2005). The statutory "mandate that the FEIS [for the repository] be adopted by the NRC 'to the extent practicable' is intended to avoid duplication of the environmental review process." *Nuclear Energy Inst. v. Envtl. Prot. Agency,* 373 F.3d 1251, 1314 (D.C. Cir. 2004). In accordance with the NWPA, the Commission implemented a regulation concerning adoption. Pursuant to 10 C.F.R. § 51.109(c), the presiding officer will find that it is practicable to adopt DOE's EISs, unless "[t]he action proposed to be taken by the Commission differs from the action proposed in the license application . . . and . . . the

difference may significantly affect the quality of the human environment . . . or . . . [s]ignificant and substantial new information or new considerations render such environmental impact statement inadequate." The regulation does not require that the Staff had to come to the same conclusion as DOE. Rather, pursuant to the regulation, the test the EISs must meet for adoption is adequacy under NEPA In its EISADR, the Staff concluded that, with the exception of the groundwater issue requiring supplementation, the EISs were "generally consistent with NRC and [CEQ] regulations and NRC guidance on completeness and adequacy." EISADR at ES-1. To hold that the Staff also needed to redo DOE's analysis to ensure that the Staff would have come to the exact same conclusions as DOE would run counter to one of the main benefits of adoption: avoiding redundancies in NEPA analysis. *See Nuclear Energy Inst. v. Envtl. Prot. Agency,* 373 F.3d 1251, 1314 (D.C. Cir. 2004); *see also* NUREG-1748, Environmental Review Guidance for Licensing Actions Associated with NMSS, at 1-9 (August 2003); Letter from Bradley W. Jones, Assistant General Counsel for Rulemaking and Fuel Cycle, to Martin G. Malsch, Counsel for the State of Nevada (Mar. 20, 2008) ("The [S]taff will review the FEIS to the extent necessary to support its adoption decision . . . [b]ut . . . will not duplicate the environmental review already performed by the DOE"). CEQ regulations on adoption also do not envision an agency duplicating the work of a second agency before adopting its EIS. Instead, "[a]n agency may adopt a Federal draft or final environmental impact statement or portion thereof provided that the statement or portion thereof meets the standard for an adequate statement under [CEQ] regulations." 40 C.F.R. § 1506.3.

Nevada has not provided any legal support or analysis for the assertion that the above is incorrect. Therefore, Nevada has not provided sufficient information to show that there is a genuine dispute regarding a material issue of law. NEV-NEPA-17 does not comply with 10 C.F.R. § 2.309(f)(1)(vi) and, therefore, is inadmissible.

NEV-NEPA-18 - OVERLAP BETWEEN NEPA AND AEA

> Certain of Nevada's safety contentions challenging aspects of DOE's TSPA-LA are applicable to DOE's 2008 FSEIS and to NRC Staff's September 5, 2008 adoption decision (U.S. Nuclear Regulatory Commission Staff's Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain (09/05/2008), LSN# NRC000029699). See Attachment 3, Affidavit of Michael C. Thorne, Attachment C. These contentions are significant, individually but especially cumulatively, and if they were to be addressed in a satisfactory manner, the disclosure of overall radiological impacts would be materially different. As a result, the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition 1118. NEV-NEPA-18 asserts that errors in DOE's TSPA, used in the SAR, also impact DOE's environmental analyses. *Id*.

Staff Response

As discussed further below, this contention does not comply with the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and is not supported by a legally sufficient affidavit. In addition, the contention does not include an adequate basis, does not demonstrate that the issue raised therein is material to the findings the NRC must make to issue a construction authorization, and is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1). For these reasons, the contention is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria

and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Nevada does not explicitly address the motion to reopen criteria. The contention states without further explanation that the issues raised therein "are significant, individually but especially cumulatively, and if they were to be addressed in a satisfactory manner, the disclosure of overall radiological impacts would be materially different." NEV Petition at 1118. Nor can it be inferred from the remainder of the contention that Nevada has raised a significant environmental issue or demonstrated that a materially different would be or would have been likely had the issue been considered initially.

In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is

analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

In support of NEV-NEPA-18, Nevada states that it "has filed numerous safety contentions (listed above) challenging aspects of DOE's TSPA-LA." NEV Petition at 1119. Further, Nevada asserts that "it is clear that the model used in the [Repository SEIS] to evaluate potential post-closure impacts to human health from releases of radioactive materials is the so-called TSPA-SEIS . . . and that this model is nearly identical to the TSPA-LA." *Id.* Nevada concludes that "[i]t follows that most of Nevada's safety TSPA-LA contentions are applicable to DOE's [Repository SEIS]." *Id.* However, these bare assertions are not sufficient to meet the high burden set by the motion to reopen criteria, even if one takes into account the "supporting facts and opinions…provided in Nevada's TSPA safety contentions." *Id.*

First, it is unclear what safety contentions Nevada alleges are also NEPA contentions. Nevada repeatedly states that such contentions are "listed above," but no such list is included in the contentions. The contention could be referring to a list of contentions appended to the affidavit of Dr. Michael Thorne, but the contention also refers to "*certain* of

Nevada's safety contentions challenging aspects of DOE's TSPA-LA," and "*most* of Nevada's safety TSPA-LA contentions," indicating that the NEV-NEPA-18 does not encompass every safety contention supported by Dr. Thorne. NEV Petition at 1118 and 1119 (emphasis added).

Even if it were clear which safety contentions are being discussed in NEV-NEPA-18, Nevada presents no support for the assertion that these issues are material to DOE's EIS aside from a conclusory assertion that "[i]t follows that most of Nevada's safety TSPA-LA contentions are applicable to DOE's [Repository SEIS]." NEV Petition at 1119. Nevada states that "supporting facts and opinions are provided in Nevada's TSPA safety contentions listed above," but without knowing which specific contentions are the subject of NEV-NEPA-18, it is impossible to judge whether the support offered for safety contentions is sufficient to meet the heightened requirements applicable to NEPA contentions. Nor does Nevada explain why these issues are a significant from a safety standpoint or how, if true, these issues would materially affect DOE's NEPA analysis. NEV-NEPA-18 has not met the motion to reopen requirements of 10 C.F.R. § 2.326(a). On this basis, the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*quoting Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10,

67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-18 is associated with an affidavit from Dr. Michael Thorne. The affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition, Attachment 3, Affidavit of Michael C. Thorne ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Michael C. Thorne (Paragraph 5) In Accordance With Affidavit;" NEV-NEPA-18 is included on this list. The affidavit further states that "within the Petition are numerous contentions relating to the TSPA. I hereby adopt as my own opinions the statements contained within Paragraph 6 of those specific contentions identified in Attachment C to this Affidavit;" NEV-NEPA-18 is not included on this list. Thorne Affidavit ¶ 3. Attachment C to the affidavit consists of a list of "Contentions Adopted By Michael C. Thorne (Paragraph 6) In Accordance With Affidavit." In the affidavit, the Dr. Thorne acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Thorne Affidavit ¶ 4. Neither list is signed or initialed by Dr. Thorne, and there is no other indication that he reviewed either list associated with his affidavit, and therefore had knowledge of the contents of the lists, prior to either list being filed. Neither the contention nor the affidavit specifies which statements in the contention are attributable to Dr. Thorne, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to him. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Dr. Thorne based his opinion. NEV-NEPA-18 is not

accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(ii): Brief Explanation of the Basis for the Contention

An admissible contention must provide a brief explanation of the basis for the contention, "indicating the potential validity of the contention." 10 C.F.R. § 2.309(f)(1)(ii); Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989) (referring to 10 C.F.R. § 2.714(b)(2)(ii), now 10 C.F.R. § 2.309(f)(1)(ii)). The basis of a contention must be set forth with reasonable specificity "to put the other parties on notice as to what issues they will have to defend against or opposed." *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), ALAB-899, 28 NRC 93, 97 (1988), aff'd sub nom. *Massachusetts v. NRC*, 924 F.2d 311 (D.C. Cir. 1991), cert. denied, 502 U.S. 899 (1991). Here, Nevada states only that it "has filed numerous contentions challenging aspects of DOE's TSPA-LA, and because DOE relies on essentially the same TSPA for estimating the radiological impacts from disposal to at Yucca Mountain in its [Repository SEIS], it follows that these contentions are applicable to" the Repository SEIS. NEV Petition at 1118. However, Nevada never specifies which safety contentions are relevant to NEV-NEPA-18 and, more importantly, does not specify errors in the Repository SEIS. Without understanding what specific errors are alleged in the TSPA or Repository SEIS, the other parties in the proceeding have no "notice as to what issues they will have to defend against." NEV-NEPA-18 does not comply with 10 C.F.R. § 2.309(f)(1)(ii) and is inadmissible.

A contention must demonstrate that the issue raised therein "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). To that end, DOE has submitted several environmental impact statements, including the Repository SEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy DOE's obligations under NEPA.

To demonstrate materiality, Nevada states that NEV-NEPA-18 "falls within the scope of . . . regulations" relating to the NRC's adoption of DOE's NEPA documents. However, Nevada offers no explanation as to how alleged concerns with DOE's TSPA would necessarily mean that DOE's EISs failed to meet NEPA and, thus, impact the NRC's ability to find that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." The purpose of challenging the adequacy of an EIS is not to "flyspeck" the EIS, "looking for any deficiency no matter how minor," but rather to identify deficiencies significant enough to defeat the informed decision-making envisioned under NEPA. *Nevada v. U.S. Dep't of Energy*, 457 F.3d 78, 94 (D.C. Cir. 2006) (citing *Fuel Safe Wash. v. FERC*, 389 F.3d 1313, 1323 (10th Cir.2004)). There is not sufficient information in the contention to determine whether the alleged deficiencies in the TSPA, if true, would constitute such a grave error. The contention does not demonstrate that the issue raised therein is material to the findings the NRC must make to issue a construction authorization as required by 10 C.F.R. § 2.309(f)(1)(iv), and, therefore, NEV-NEPA-18 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position.” 10 C.F.R.§ 2.309(f)(1)(v). A “mere ‘notice pleading’ is insufficient” and the petitioner shall set forth the significance of each of its supporting references. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if parties rely on expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

Nevada states that "supporting facts and opinions are provided in Nevada's TSPA safety contentions." NEV Petition at 1119. However, these TSPA safety contentions are never identified with sufficient clarity to identify the information allegedly supporting the contention. Moreover, the contention never explains the significance of information regarding safety contentions to an environmental contention. NEV-NEPA-18 is also allegedly supported by Dr. Thorne's affidavit. As discussed above, this affidavit is deficient. However, even if the affidavit were acceptable, neither the affidavit nor the contention explains the basis for Dr. Thorne's opinions. NEV-NEPA-18 is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v), and, for that reason, the contention is inadmissible.

NEV-NEPA-19 - PEAK DOSE IDENTIFICATION

> DOE's 2008 FSEIS and 2002 FEIS are inadequate because neither calculates or discloses the reasonably foreseeable post-closure impacts to human health from releases of radioactive materials after one million years. This deficiency is significant, and if it were to be addressed in a satisfactory manner, the disclosure of overall radiological impacts would be materially different. As a result, the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1121. In NEV-NEPA-19, Nevada alleges that DOE's FEIS and FSEIS should include the reasonably foreseeable post-closure impacts to human health from radioactive releases after one million years. *Id*.

Staff Response

As discussed further below, the contention does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and does not included the required affidavit. In addition, Nevada fails to demonstrate that the contention is material to the findings the NRC must make to issue a construction authorization for the repository as required by 10 C.F.R. § 2.309(f)(1)(iv). For these reasons, the contention is inadmissible.

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at

Yucca Mountain," 73 Fed. Reg. at 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria. However, Nevada states without further explanation that the alleged "deficiency is significant, and if it were to be addressed in a satisfactory manner, the disclosure of overall radiological impacts would be materially different." NEV Petition at 1121. This statement is not sufficient to satisfy the motion to reopen criteria. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.326(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously*

different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

Nevada contends that DOE's FEIS and FSEIS are inadequate because they do not calculate "reasonably foreseeable post-closure impacts to human health from releases of radioactive materials after one million years." NEV Petition at 1121. The contention notes that the expected dose for the reasonably maximally effected individual (RMEI) is increasing after 1 million years. *Id.* at 1122. However, as discussed further below, the contention does not account for the uncertainty of calculating the dose after the period of geologic stability (1 million years). In addition, the contention is allegedly supported by an affidavit from Dr. Michael Thorne, but, as discussed further below, this affidavit is deficient and does not explain the reasoning behind Dr. Thorne's position. Without further details and analysis, the contention is not adequately supported to meet the "deliberately heavy" evidentiary burden for a motion to reopen. *See Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Because NEV-NEPA-19 does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2), the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated

and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-19 is associated with an affidavit from Dr. Michael Thorne. The affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition Attachment 3, Thorne Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Michael C. Thorne (Paragraph 5) In Accordance With Affidavit;" NEV-NEPA-19 is included on this list. In the affidavit, the Dr. Thorne acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Thorne Affidavit ¶ 4. The list is neither signed nor initialed by Dr. Thorne, and there is no other indication that he reviewed the list, and therefore had knowledge of the contents of the list, prior to the list being filed. Neither the contention nor the affidavit specifies which statements in the contention are attributable to Dr. Thorne, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to him. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Dr. Thorne based his opinion. NEV-NEPA-19 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the

requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

An admissible contention must assert an issue of law or fact that is “material to the findings the NRC must make to support the action that is involved in the proceeding.” 10 C.F.R. § 2.309(f)(1)(iv). With respect to the materiality of NEV-NEPA-19, Nevada states without further explanation that the "contention challenges compliance with NEPA and [10 C.F.R. § 63.31(c)] and therefore raises a material issue," and that "10 C.F.R. § 51.109(a)(2) also makes [the contention] a material issue." NEV Petition at 1121. This statement alone is not sufficient to demonstrate that the issue raised in the contention is material to the Staff's findings as required by 10 C.F.R. § 2.309(f)(1)(iv).

Based on the remainder of the contention, it appears that Nevada may be asserting that the alleged deficiency is material because it renders inadequate the "hard look" that DOE is required to take at environmental consequences. Even if this were the case, in the present instant, exclusion of radiological releases after one million years does not violate the "hard look" requirement. Although federal agencies are required to take a "hard look" at the potential environmental consequences of proposed actions, *see, e.g., Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992), but the requirement is tempered by a "rule of reason." *Id*; *see also Louisiana Energy Services, LP* (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258 (2006). An agency "need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable . . . and may decline to examine 'remote and speculative'" impacts. *LES*, LBP-06-08, 63 NRC at 258. Here, Nevada suggests that DOE must analyze potential risks occurring more than one million years in the future. NEV Petition at 1121. DOE's decision to truncate its dose calculations at one million years is based on EPA's dose standard, promulgated pursuant to the Energy Policy Act of 1992. "It is always possible to speculate about the potential for doses occurring even further in the future. Continuing the calculation beyond 1 million years would introduce further complications regarding the geologic stability of the site while adding little if any additional

understanding of repository performance." SECY-08-0170, Final Rule: 10 CFR Part 63, "Implementation of a Dose Standard After 10,000 Years," at18 (Nov. 4, 2008) (ADAMS ML082880297). When providing its recommendations for standards to the EPA, the National Academy of Sciences recommended that the calculation be carried out for a period of time "within the limits imposed by long-term stability of the geologic environment," one million years. "Technical Bases for Yucca Mountain Standards," National Research Council, 6 (1995). This finding demonstrates that the NAS did not consider calculation beyond one million years feasible. Although the NAS recommendation and the EPA standard were both developed within the context of the safety analysis, requiring a calculation for the period beyond one million years for the EIS when the feasibility of such a calculation has been called into question does not comport to the rule of reason to be applied to NEPA's hard look requirement, and therefore is not necessary for compliance with NEPA. With regard to what sort of calculation is necessary for an EIS, 10 C.F.R. § 63.341 requires DOE to include in the EIS "the peak dose of the reasonably maximally exposed individual that would occur after 10,000 years following disposal but within the period of geologic stability . . . as an indicator of long-term disposal system performance." Although Nevada correctly notes that the dose to the RMEI appears to be increasing at 1 million years, NEV Petition at 1122, Nevada has not adequately addressed the uncertainty inherent in calculating the dose past the period of geologic stability. Thus, Nevada has not demonstrated that the issue raised in NEV-NEPA-19 is material to the findings the NRC must make, and the contention is inadmissible.

NEV-NEPA-20 – RADIONUCLIDE CONTAMINATION OF AQUIFER

> The incomplete and inadequate 2002 FEIS and 2008 FSEIS analyses of cumulative impacts on groundwater quality due to contamination by radionuclides and other repository derived contaminants released to the volcanic/alluvial aquifer are significant deficiencies, and were they to be remedied, the disclosure of these impacts would be materially different, thus the FEIS and FSEIS cannot be adopted by the NRC.

NEV Petition at 1124. NEV-NEPA-20 alleges the FEIS and the FSEIS do not adequately address the proposed repository's impacts on the volcanic-alluvial aquifer and therefore may not be adopted by the NRC. *Id.*

Staff Response

NEV-NEPA-20 raises the same issue raised in the Staff's Adoption Determination, *see* EISADR at 3-10 to 3-11, and DOE has agreed to supplement its FEIS and FSEIS with an analysis of the proposed repository's impacts on groundwater quality due to contamination by radionuclides and other contaminants released to the volcanic-alluvial aquifer. *See* "Supplement to the Environmental Impact Statements for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV," 73 Fed. Reg. 63,463 (October 24, 2008). However, in order to be an admissible contention, NEV-NEPA-20 must still satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1), 2.326, and 51.109. As discussed further below, this contention does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and is not supported by a legally sufficient affidavit as required. In addition, NEV-NEPA-20 does not satisfy 10 C.F.R. § 2.309(f)(1)(v). For these reasons, NEV-NEPA-20 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set

forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

In NEV-NEPA-20, Nevada does not address the § 2.326 criteria, except to state without any further explanation that the alleged inadequacies "are significant deficiencies, and were they to be remedied, the disclosure of these impacts would be materially different." NEV Petition at 1124. As explained below, neither this unsupported assertion nor the remainder of the contention presents sufficient information to meet the § 2.326 criteria.

In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* Here, the

contention is associated with affidavits from Michael Thorne and Steven Frishman. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne and Attachment 20, Affidavit of Steven Frishman. As discussed further below, these affidavits are deficient. Moreover, the information in support of the contention is not sufficient, even if the affidavits were acceptable, to satisfy the criteria in 10 C.F.R. §§ 51.109 and 2.326. NEV-NEPA-20 asserts that the FEIS and FSEIS are deficient under NEPA and 10 C.F.R. Part 51 in that they do not adequately assess the repository's impacts on groundwater due to contamination by radionuclides and other contaminants released to the volcanic-alluvial aquifer. NEV Petition at 1124-25. However, NEV-NEPA-20's discussion is confined to the alleged deficiencies in DOE's EIS documents and the impacts Nevada believes should have been considered. *See* NEV Petition at 1125-27. Although the Staff has concluded that additional information is necessary regarding the proposed repository's impacts on the volcanic-alluvial aquifer, the Staff's conclusion, standing alone, that more information or analysis on a subject is needed, is not sufficient to meet the requirements of 10 C.F.R. §§ 51.109(a)(2) and 2.326 or to support the admissibility of a contention. *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 336-37 (1999). Nevada must demonstrate that the requirements of sections 51.109 and 2.326 are met, and Nevada has not demonstrated that the alleged deficiency in NEV-SAFETY-20 raises a "significant environmental issue."

In addition, Nevada does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412,

418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id.* Nevada offers no independent documentary support for NEV-NEPA-20. NEV-NEPA-20 appears to rest entirely on the affidavits of Dr. Thorne and Mr. Frishman and assertions about what impacts Nevada believes that DOE should consider. However, notwithstanding the fact that these affidavits are legally deficient, there is no explanation of the basis for these opinions. Without an explanation of the basis for the opinions, the opinions are merely "[b]are assertions and speculations" and insufficient to demonstrate that consideration of impacts to groundwater due to contamination of the volcanic-alluvial aquifer would "paint a '*seriously* different picture of the environmental landscape.'" Although the Staff has concluded that more analysis on issues raised in NEV-NEPA-20 is necessary, and DOE has agreed to prepare a Supplemental EIS, Nevada offers no independent documentary support for NEV-NEPA-20 or discussion of the significance of the alleged deficiencies. As stated above, the Staff's conclusion that more discussion on a subject is necessary is not sufficient, standing alone, to demonstrate compliance with section 2.326 or the admissibility of a contention. *Oconee*, CLI-99-11, 49 NRC at 336-37. Nevada has not demonstrated that these requirements are met; therefore, NEV-NEPA-20 also does not meet the criterion at 10 C.F.R. § 2.326(a)(3).

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.*

(American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

NEV-NEPA-20 appears to be associated with affidavits from Michael Thorne and Steven Frishman. Both affidavits state that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." Thorne Affidavit ¶ 2; Frishman Affidavit ¶ 2. Each Attachment B to the affidavits consists of lists of "Contentions Adopted By Michael C. Thorne In Accordance With Affidavit" or "Contentions Adopted By Steven A. Frishman In Accordance With Affidavit." In each affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Thorne Affidavit ¶ 2; Frishman Affidavit ¶ 2. These lists are neither signed nor initialed by the affiants, and there is no other indication that either affiant reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavits specifies which statements in the contention are attributable to either or both, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to both affiants. Each

affiant's *curriculum vitae* is attached to his affidavit, but without further explanation, it is difficult to discern the intended range of each affiant's expertise. Neither the contention nor the affidavits explains the personal knowledge or facts upon which Dr. Thorne or Mr. Frishman based his opinion. NEV-NEPA-20 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. As discussed further below, the contention also does not comply with all the admissibility criteria of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

As discussed above, NEV-NEPA-20 cites no documentary evidence in support of any of the statements made therein, and so it appears that the contention is attributable to the expert opinions of Dr. Thorne and Mr. Frishman. For example, the contention alleges that the alleged inadequacies "are significant deficiencies, and were they to be remedied, the disclosure of these impacts would be materially different" but nothing in the contention or associated affidavits supports or explains the basis for this assertion. NEV-NEPA-20 is not adequately supported by fact or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(v). For this reason, the contention is inadmissible.

Therefore, for the reasons set forth above, NEV-NEPA-20 should be rejected.

NEV-NEPA-21 – CONTAMINATED AQUIFER DISCHARGES

> The incomplete and inadequate 2002 FEIS and 2008 FSEIS analyses of the cumulative impacts of land surface discharge of groundwater contaminated with radionuclides and other repository derived contaminants are significant deficiencies, and were they to be remedied, the disclosure of these impacts would be materially different, thus the FEIS and the FSEIS cannot be adopted by the NRC.

NEV Petition at 1128. NEV-NEPA-21 alleges the FEIS and the FSEIS do not adequately address the proposed repository's "impacts of land surface discharge, at Franklin Lake Playa and from springs near Furnace Creek, of groundwater contaminated with radionuclides and other repository derived contaminants that can be concentrated by evaporation of water, plant uptake, mineral precipitation and other natural process[es], and subsequently redistributed in the environment." *Id.*

Staff Response

NEV-NEPA-21 raises the same issue raised in the Staff's Adoption Determination, *see* EISADR at 3-11 – 3-12, and DOE has agreed to supplement its 2002 EIS and Repository SEIS with an analysis of the proposed repository's impacts due to the surface discharge of groundwater contaminated with radionuclides from the proposed repository. *See* Supplement to the Environmental Impact Statements for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV, 73 Fed. Reg. 63,463, 63,464 (Oct. 24, 2008). However, in order to be an admissible contention, NEV-NEPA-21 must still satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1), 2.326, and 51.109. As discussed further below, this contention does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and is not supported by a legally sufficient affidavit as required. In addition, NEV-NEPA-21 does not satisfy 10 C.F.R. § 2.309(f)(1)(v). For these reasons, NEV-NEPA-21 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions “must be accompanied by one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326 . . . ." 10 C.F.R. § 51.109(a)(2). *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC___ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14), citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 221 (1990). Section 2.326(b) also requires supporting affidavits.

In NEV-NEPA-21, Nevada does not address the 10 C.F.R. § 2.326 criteria, except to state without any further explanation that the alleged inadequacies “are significant deficiencies, and were they to be remedied, the disclosure of these impacts would be materially different . . . .” NEV Petition at 1128. As explained below, neither this unsupported assertion nor the remainder of the contention presents sufficient information to meet the § 2.326 criteria.

In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of

qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* Here, the contention is associated with affidavits from Michael Thorne and Steven Frishman. *See* NEV Petition at Attachment 3, Affidavit of Michael C. Thorne; Attachment 20, Affidavit of Steven A. Frishman. As discussed further below, these affidavits are deficient. Moreover, the information in support of the contention is not sufficient, even if the affidavits were acceptable, to satisfy the criteria in §§ 51.109 and 2.326. NEV-NEPA-21 asserts that the FEIS and FSEIS are deficient under NEPA and 10 C.F.R. Part 51 in that they do not adequately assess the repository's impacts of surface discharge of groundwater potentially contaminated by radionuclides and other contaminants from the proposed repository. NEV Petition at 1128. However, NEV-NEPA-21's discussion is confined to the alleged deficiencies in DOE's EIS documents and the impacts Nevada believes should have been considered. *See id.* at 1129-1131. Although the Staff has concluded that additional analysis is necessary regarding the proposed repository's impacts due to the surface discharge of contaminated groundwater, the Staff's conclusion that more information is necessary, standing alone, does not satisfy the Petitioner's requirements under 10 C.F.R. §§ 51.109(a)(2) and 2.326 or render the contention admissible. *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 336-37 (1999). Nevada, in its Petition, must demonstrate that the contention raises a significant environmental issue, and Nevada's Petition does not do so.

In addition, Nevada does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage,*

LLC (Independent Spent Fuel Storage Installation), CLI-06-03, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir. 1984). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.*, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). This showing also requires something more than "[b]are assertions and speculation" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required . . . ." *Id.* Although the Staff has concluded that more analysis on issues raised in NEV-NEPA-21 is necessary, and DOE has agreed to prepare a Supplemental EIS, Nevada offers no independent documentary support for NEV-NEPA-21 or discussion of the significance of the alleged deficiencies. As stated above, the Staff's conclusion that more discussion on a subject is necessary is not sufficient, standing alone, to demonstrate compliance with Section 2.326 or the admissibility of a contention. *Oconee*, CLI-99-11, 49 NRC at 336-37. Rather, the contention appears to rest entirely on the affidavits of Dr. Thorne and Mr. Frishman and assertions about what impacts Nevada believes that DOE has not considered and should consider. These unsupported assertions do not demonstrate that DOE's consideration of the impacts of surface discharge of contaminated groundwater would "paint a '*seriously* different picture of the environmental landscape.'" *PFS*, CLI-06-03, 63 NRC at 28. Therefore, NEV-NEPA-21 also does not meet the criterion at 10 C.F.R. § 2.326(a)(3). Because NEV-NEPA-21 does not meet the heightened admissibility criteria of 10 C.F.R. §§ 2.326 and 51.109(a)(2) applicable to this proceeding, the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in

10 C.F.R. §§ 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." FED. R. CIV. P. 56.

NEV-NEPA-21 appears to be associated with affidavits from Michael Thorne and Steven Frishman. Both affidavits state that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." Thorne Affidavit ¶ 2; Frishman Affidavit ¶ 2. Each Attachment B to the affidavits consists of lists of "Contentions Adopted By Michael C. Thorne In Accordance With Affidavit" or "Contentions Adopted By Steven A. Frishman In Accordance With Affidavit." In each affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Thorne Affidavit ¶ 2; Frishman Affidavit ¶ 2. These lists are neither signed nor initialed by the affiants, and there is no other indication that either affiant reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavits specifies which statements in

the contention are attributable to either or both, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to both affiants. Neither the contention nor the affidavits explain the personal knowledge or facts upon which Dr. Thorne or Mr. Frishman based his opinion. NEV-NEPA-21 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. As discussed further below, the contention also does not comply with all the admissibility criteria of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 204 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion . . . .'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998).

As discussed above, NEV-NEPA-21 cites no documentary evidence in support of any of the statements made therein. For example, NEV-NEPA-21 argues that "[t]hese concentration and redistribution processes have the potential to result in higher radiological impacts to individuals . . . than those arising to the RMEI," *see* NEV Petition at 1130, but provides no support for this assertion. In addition to the fact that the affidavits submitted by Dr. Thorne and Mr. Frishman are deficient, there is no reasoned basis or explanation provided for the opinions contained in the contention. NEV-NEPA-21 is not adequately

supported by fact or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(v). For this reason, the contention is inadmissible.

Therefore, for all of the foregoing reasons, NEV-NEPA-21 should be rejected.

NEV-NEPA-22 - NO-ACTION ALTERNATIVE

> The 2002 FEIS's No-Action Alternative is neither an available, appropriate, nor reasonable alternative for analysis and decision making in that neither of the two No-Action Alternative scenarios likely ever would be determined acceptable for implementation; however, the current practice of at-reactor (or off-site ISFSI), NRC licensed spent nuclear fuel storage can be extrapolated, for EIS comparative impact analysis purposes, for a reasonable and feasible period of time in the future. This deficiency is significant, and if it were to be addressed in a satisfactory manner, the disclosure of overall environmental impacts would be materially different. As a result, the FEIS cannot be adopted by the NRC.

NEV Petition at 1132. NEV-NEPA-22 alleges that the No-Action Alternative considered by DOE in the 2002 EIS is not reasonable. NEV Petition at 1132.

Staff Response

As discussed further below, this contention does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and is not supported by a sufficient affidavit as required. In addition, the contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). For these reasons, NEV-NEPA-22 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for

Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

In NEV-NEPA-22, Nevada does not address the § 2.326 criteria, except to state without further explanation that the alleged "deficiency is significant, and if it were to be addressed in a satisfactory manner, the disclosure of overall environmental impacts would be materially different." NEV Petition at 1132. As explained below, neither this bare statement nor the remainder of the contention presents sufficient information to meet the § 2.326 criteria.

Nevada does not demonstrate that the issue raised in NEV-NEPA-22 is a significant environmental issue. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* Here, the contention is associated with affidavits from Robert Halstead and Steven Frishman. As discussed further below, these affidavits are deficient. Moreover, the information in support of the contention is not sufficient, even if the affidavits were acceptable. Nevada alleges that the two no-action alternatives considered by DOE are

remote and speculative, and puts forth its own alternative scenario for the no-action alternative, which the state argues would be a reasonable approach. NEV Petition at 1133-34. DOE stated that the FEIS "does not intend to represent the No-Action Alternative as a viable long-term solution, but rather to use it as a basis against which the proposed action can be evaluated." FEIS Chapter 2 at 2-1. Nevada argues that because the two scenarios are not expected to ever occur, DOE's decision to use them as a baseline for comparison to the proposed action violates NEPA. NEV Petition at 1134. As support for this assertion, Nevada cites without further explanation provisions in the CEQ regulations that have allegedly been violated. *Id.* Nevada further makes several conclusory statements regarding the probability of the no action alternatives. *Id.* However, Nevada offers no evidence that the no-action alternatives considered by DOE were inadequate for DOE's stated purpose: as a baseline against which to evaluate the proposed action. Nor does Nevada offer any evidence that, in the present instance, where Congress has mandated a particular course of action, it is inappropriate to utilize a no-action alternative to serve as "a benchmark, enabling decision makers to compare the magnitude of effects of the action alternatives." Forty Most Asked Questions Concerning CEQs National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,027 (March 23, 1981). Nevada also proffers its own no-action alternative that is purportedly more reasonable, but offers no evidence that this is, in fact, the case. NEV Petition at 1134-35. All of these general assertions regarding DOE's analysis of no-action alternatives are not enough to show that the issue raised in the contention, whether DOE should have instead considered a no-action alternative similar to that proposed by Nevada, is significant.

In addition, Nevada does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage,*

LLC (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id.* Nevada offers no independent documentary support for NEV-NEPA-22. Rather, the contention appears to rest entirely on the affidavits of Mr. Halstead and Mr. Frishman. However, notwithstanding the fact that these affidavits are deficient, there is no explanation of the basis for these opinions. Without an explanation of the basis for the opinions, the opinions are "[b]are assertions and speculations" and insufficient to demonstrate that Nevada's proposed no-action alternative would "paint a '*seriously* different picture of the environmental landscape'" than the no-action alternatives already analyzed by DOE. Therefore, NEV-NEPA-22 also does not meet the criterion at 10 C.F.R. § 2.326(a)(3). Because NEV-NEPA-22 does not meet the heightened admissibility criteria of 10 C.F.R. §§ 2.326 and 51.109(a)(2), the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181

(1998)). In addition, the APAPO Board stated that "affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-22 appears to be associated with affidavits from Robert Halstead and Steven Frishman. Both affidavits state that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." Halstead Affidavit ¶ 2; Frishman Affidavit ¶ 2. Each Attachment B to the affidavits consists of lists of "Contentions Adopted By Robert J. Halstead In Accordance With Affidavit" or "Contentions Adopted By Steven A. Frishman In Accordance With Affidavit." In each affidavit, the affiant acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Halstead Affidavit ¶ 2; Frishman Affidavit ¶ 2. These lists are neither signed nor initialed by the affiants, and there is no other indication that either affiant reviewed the list associated with his affidavit, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention nor the affidavits specifies which statements in the contention are attributable to either or both, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to both affiants. Neither the contention nor the affidavits explains the personal knowledge or facts upon which Mr. Halstead or Mr. Frishman based his opinion. NEV-NEPA-22 is not accompanied by an

affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. As discussed further below, the contention also does not comply with all the admissibility criteria of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

As discussed above, NEV-NEPA-22 cites no documentary evidence in support of any of the statements made therein, and so it appears that the contention is attributable to the expert opinions of Mr. Halstead and Mr. Frishman. In addition to the fact that the affidavits submitted by Mr. Halstead and Mr. Frishman are deficient, there is no reasoned basis or explanation provided for the opinions contained in the contention. NEV-NEPA-22 is not adequately supported by fact or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(v). For this reason, the contention is inadmissible.

NEV-NEPA-23 - AIRCRAFT CRASH SCENARIOS - AGING FACILITY

> SEIS Appendix E, Section E.7, which states that DOE did not consider the Aging Facility to be vulnerable to a hypothetical sabotage scenario involving a large commercial jet aircraft crash due to the spacing and protective nature of the concrete overpacks, fails to accurately identify the number of overpacks damaged, fails to accurately assess the severity of the damage from such a crash, and fails to accurately analyze the amount of radioactive material that would be released from such a crash. These deficiencies are significant, and if they were to be addressed in a satisfactory manner, the disclosure of overall radiological impacts would be materially different, and thus the FEIS and SEIS cannot be adopted by the NRC.

NEV Petition at 1136. NEV-NEPA-23 alleges that DOE's analysis of the potential environmental impacts of a hypothetical sabotage scenario is inadequate because it did not consider the impacts of such a crash at the Aging Facility and did not consider appropriate representative aircraft characteristics. NEV Petition at 1136.

Staff Response

As discussed further below, the contention does not meet the standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2). In addition, Nevada does not demonstrate that the issue in the contention is material to the findings the NRC must make to issue a construction authorization for the facility as required by 10 C.F.R. § 2.309(f)(1)(iv). For these reasons, NEV-NEPA-23 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that

are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository, CLI-08-25, 68 NRC __ (2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, Nevada has not explicitly addressed the § 2.326 criteria. However, Nevada states that the alleged SEIS deficiencies identified in the contention are significant and that, if the alleged deficiencies "were to be addressed in a satisfactory manner, the disclosure of overall radiological impacts would be materially different." NEV Petition at 1136. This language seems intended to meet criteria 2 and 3 under § 2.326, but is not sufficient to do so.

In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. With regard to the third prong of the motion to reopen standard, in the context of an EIS, section 2.325(a)(3) is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the

proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*.

In SEIS Appendix E, Section E.7, DOE presents an analysis of the impacts resulting from an aircraft crash at the Canister Receipt and Closure Facility as the result of sabotage. The analysis considered a crash that would penetrate the roof of the facility, breach two TAD canisters and rupture 100 percent of the fuel assemblies housed inside, and result in a fire that would oxidize all the fuel assembly pellets into powder form. SEIS E-33 to E-34. This analysis is intended to be a representative analysis for any sabotage-related aircraft crashes at the facility, and the Staff concluded that the analysis was adequate for the impacts of accidental aircraft crashes. Adoption Determination Report at 3-13. Here, while Nevada argues that there would be some radiological impact from the accidental crash scenarios suggested for inclusion in the SEIS, NEV Petition at 1138-40, it has not demonstrated that any such impact would exceed the impact from the sabotage scenario already evaluated. In addition, the contention is not accompanied by sufficient evidentiary support to meet the high burden associated with the motion to reopen standard. *See Oyster Creek,* CLI 08-28, 68 NRC at __ (slip op. at 16, 22). NEV-NEPA-23 is associated with an affidavit from Hugh Horstman. However, as discussed further below, Mr. Horstman's affidavit is deficient. NEV-NEPA-23 does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2). On this basis, the contention is inadmissible.

In addition, the Staff submits that Nevada has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." Fed. R. Civ. P. 56.

NEV-NEPA-23 appears to be associated with an affidavit from Hugh Horstman. Mr. Horstman's affidavit states that "within the Petition are numerous contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit." NEV Petition Attachment 12, Horstman Affidavit ¶ 2. Attachment B to the affidavit consists of a list of "Contentions Adopted By Hugh Horstman In Accordance With Affidavit." In the affidavit, Mr. Horstman acknowledges that counsel for Nevada intended to prepare the list after he signed the affidavit. Horstman Affidavit ¶ 2. This list is neither signed nor initialed by Mr. Horstman and there is no other indication that Mr. Horstman reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed. Neither the contention itself nor Mr. Horstman's affidavit specifies which statements in the contention are

attributable to Mr. Horstman, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Mr. Horstman. Mr. Horstman's *curriculum vitae*, which shows he is a pilot, is attached to the affidavit, but without further explanation, it is difficult to discern the intended range of his expertise. In addition, from his CV, it does not appear that Mr. Horstman has any education or experience relevant to releases of radiological materials from crashes or another discipline that qualifies him to provide an expert opinion on the significance of radiological releases or the severity of potential impacts from radiological releases. Neither the contention nor the affidavit explains the personal knowledge or facts upon which Mr. Horstman based his opinions. NEV-NEPA-23 is not accompanied by an affidavit adequate to comply with the requirements of 10 C.F.R. §§ 2.326(b) and 51.109(a)(2) and is inadmissible on that basis alone. In addition, as discussed further below, the contention does not comply will all the requirements of 10 C.F.R. § 2.309(f)(1) and therefore is inadmissible.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application.

As discussed above, Nevada has argued that the accidental aircraft crash scenarios discussed in the contention would have some radiological impact. However, nothing in the contention argues that the impact from an accidental aircraft crash scenario postulated by Nevada would be greater than the radiological impact from the sabotage scenario already

considered. *See* FEIS Chapter 6 at 6-50 through 6-52. Although NEPA requires that DOE take a "hard look" at all potential environmental consequences, *see Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998), this examination "is subject to a 'rule of reason,' meaning that the assessment need not include every environmental effect that could potentially result from the action, but rather 'may be limited to the effects which are shown to have some likelihood of occurring.'" *Hydro Resources, Inc.* (PO Box 777, Crownpoint New Mexico 87313), LBP-04-23, 60 NRC 441, 447 (2004) (*citing Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 & 2), ALAB-455, 7 NRC 41, 48 (1978)). Nor, as in the present instance, where a federal agency would be asked to supplement an environmental impact statement, need the agency take action every time an additional consideration is raised. Rather, supplementation is required where the additional circumstance could "affect the quality of the human environment in a significant manner or to a significant extent not already considered." *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (*citing Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987)). As discussed above, Nevada has made no showing that the consequences from the aircraft accidents suggested in NEV-NEPA-23 would be any greater than those already considered by DOE in the sabotage analysis. Therefore, Nevada has not raised an issue that is material to the findings the NRC must make, and NEV-NEPA-23 is inadmissible.

TIM-NEPA-01 - DOSES RELATED TO INGESTION OF PARTICULATE MATTER

> Dose calculations presented in the FEIS and SFEIS, based on a “reasonably maximally exposed individual” (RMEI) as defined in Federal Register Vol. 73 No. 200, pp 61256-61289, fails to consider doses attributable to the full diet and associated particulate contamination of dietary components during the postclosure period, and doses related to airborne dust and sand containing radionuclides derived from the repository and had these deficiencies been remedied the disclosure of impacts would have been materially different, therefore the FEIS and FSEIS can not be adopted by the NRC.

TIM Petition at 19. TIM-NEPA-01 alleges that the 2002 EIS and Repository SEIS are deficient because the calculated dose to the reasonably maximally exposed individual (RMEI) does not consider doses attributable to diet and associated particulate contamination in the post-closure period or doses related to airborne dust and sand. TIM Petition at 19.

Staff Response

As discussed further below, the contention does not meet the heightened contention admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2). In addition, the contention is not adequately supported by fact or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v). For these reasons, TIM-NEPA-01 is not admissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for

Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2)*, CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, TIM does not directly address the motion to reopen criteria. Moreover, the contention does not provide sufficient information to satisfy the criteria. First, the petitioner does not demonstrate that the issue raised in TIM-NEPA-01 is a significant environmental issue. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. Here, the contention is supported by affidavits from Cady Johnson, Ph.D. and Martin Mifflin, Ph.D. However, the affidavits merely state that Drs. Johnson and Mifflin "adopt as [their] own opinions the statements contained within Paragraph 5 and 6 of Contentions TIM-NEPA-01" among other, and do not contain any specific information regarding the basis for Dr. Johnson's or Dr. Mifflin's opinions. TIM Petition, Attachment 2, Affidavit of Cady Johnson at ¶ 3; Attachment 3, Affidavit of Martin D. Mifflin at ¶ 3.

In the text of the contention, the petitioner touches on several different arguments

regarding DOE's analysis of doses from particulate materials derived from groundwater discharge deposits. In essence, it appears that TIM is arguing that ingestion of radioactive particulates from groundwater can lead to exposures to certain individuals higher than the dose calculated to the RMEI by DOE. TIM Petition at 19. Based on evidence of dietary components of aboriginal cultures, the contention alleges that DOE should have accounted for ingestion of particulates due to grit in future diets. *Id.* at 20-21. The contention also argues that DOE should account for respiration of radionuclides in fine-grained particulates by future populations. *Id.* at 21. These phenomena seem to be related to climate change or extreme changes in lifestyles near the repository, including, for example, an analysis of particulate matter expected in a "post-industrial" diet, but the contention does not explain why these phenomena must be included in the environmental analysis. *Id.* at 22-23. While the contention presents information regarding the dietary components of aboriginal cultures, the contention does not provide a connection between this information and the assertion that DOE must take this information into account and demonstrate that "radionuclide-enriched particulates will not represent a contribution to whole-body and organ doses from dietary and respiratory pathways." *Id.* at 21. The contention also argues that DOE should consider the probability that prior groundwater discharges will recur in the future and what the radionuclide concentration in such groundwater discharges would be. *Id.* However, this argument is based on assertions about potential long-term changes to the alluvial aquifer flow and transport system (as described in FEIS section 5.4) from assumed future climate changes. TIM claims that this change in the flow and transport system could allow transport of potential radionuclide releases from the repository to the postulated alternative discharge location at or near Crater Flat referred to in the contention. TIM Petition at 21. However, TIM provides no explanation of the basis for these assertions or discussion of the likelihood of any such changes to the flow and transport system or resulting discharges occurring. Taken together, this information is not sufficient to show that the issue raised in the contention is a significant

environmental issue.

In addition, the contention does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id.* As discussed above, the contention contains information that allegedly supports the position advanced by the petitioner. However, without further analysis and technical support, the information is little more than assertion or speculation, and is not sufficient to demonstrate that if this information were considered, there would be a materially different result with regard to DOE's NEPA analysis. TIM-NEPA-01 does not satisfy the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). On this basis, the contention is inadmissible. In addition, as discussed below, the contention does not meet all the contention admissibility requirements in 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a “concise statement of the alleged facts

or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

As discussed above, the information offered in support of the contention lacks basis and explanation. The contention alleges that DOE should consider greater potential doses to the RMEI based on ingestion of grit or respiration of fine particulates. TIM Petition at 20-21. This assertion seems to be premised on climate change or extreme changes in lifestyles near the repository, but does not explain the reasoning behind these assumptions. The contention is supported by affidavits from Drs. Johnson and Mifflin. However, as discussed above, neither the contention nor the affidavits explain the basis for their opinions, as required. TIM-NEPA-01 is not adequately supported by fact or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(v). On this basis, the contention is inadmissible.

TIM-NEPA-02 - ANALYSIS OF ALTERNATIVES TO THE PROPOSED ACTION

> DOE's discussion of alternatives the proposed repository at Yucca Mountain is inadequate in the context of the National Environmental Policy Act (40 CFR § 1502.14), which indicates that the discussion of alternatives is "…the heart of the EIS"; DOE presents only a single, "No-action" alternative that does not include Yucca Mountain as a component in an alternative waste-management strategy that utilizes the site as Congress intended.

TIM Petition at 24. TIM-NEPA-02 alleges that the 2002 EIS is deficient because it does not consider site-specific alternatives to a mined geologic repository at Yucca Mountain. *Id.*

Staff Response

As explained further below, the contention does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2). In addition, the contention does not meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1) because it is not within the scope of the proceeding, does not demonstrate that the issue raised is material to the findings the NRC must make to issue a construction authorization for the repository, and is not adequately supported by fact or expert opinion.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at

Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, the petitioner does not directly address the motion to reopen criteria. Moreover, the contention does not provide sufficient information to satisfy the criteria. First, the petitioner does not demonstrate that the issue raised in TIM-NEPA-02 is a significant environmental issue. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. Here, the contention is supported by affidavits from Cady Johnson and Martin Mifflin. However, the affidavit does not contain any specific information regarding the basis for Dr. Johnson's or Dr. Mifflin's opinions. The contention itself presents an argument that, under the NWPA, DOE should have considered on-site alternatives to deep geologic disposal at Yucca Mountain. TIM Petition at 26. Specifically, the contention argues that DOE should have considered the impacts of a surface-based storage facility within the controlled area at Yucca Mountain. *Id.* However, the contention does not contain any support for the assertion that the NWPA permits DOE to consider any alternative other than

deep geologic disposal. To the contrary, the NWPA explicitly states that DOE need not consider any alternative to disposal of high-level waste and spent nuclear fuel in a deep geologic repository and bans interim surface storage of spent nuclear fuel at Yucca Mountain. 42 U.S.C. §§ 10134(f)(2) and 10155(a)(2) (2000). The contention's vague, generic statement that the NWPA allows consideration of a surface-based storage facility within the controlled area at Yucca Mountain is not sufficient to override the express language of the NWPA. TIM presents no further support for its assertion that the issue raised in the contention is significant. TIM-NEPA-02 does not meet the motion to reopen criterion at 10 C.F.R. § 2.326(a)(2).

In addition, the contention does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*. In support of the contention, the petitioner cites a position statement prepared by the National Research Council. TIM Petition at 26. However, the contention does not explain on what basis the statement from the Council can

override the clear intent of the NWPA. Beyond this statement from the Council, the contention appears to be supported solely by Dr. Johnson's and Dr. Mifflin's affidavit, which states that the affiant "adopt[s] as [his or her] own opinions the statements contained within Paragraph 5 and 6 of Contentions TIM-NEPA . . . -02." TIM Petition, Attachment 2, Affidavit of Cady Johnson at ¶ 3; Attachment 3, Affidavit of Martin D. Mifflin at ¶ 3. However, neither affidavit nor the contention explains the basis of Dr. Johnson's or Dr. Mifflin's opinions. Moreover, the contention rests on an interpretation of the NWPA, stated in section 5 of the affidavit, and therefore apparently adopted by Drs. Johnson and Mifflin, that would require DOE to consider surface storage within the controlled area. TIM Petition at 26. However, it is not clear from the contention, either affidavit, or the resumes attached to the affidavits that Drs. Johnson and Mifflin, both hydrogeologists, are qualified to offer a statutory interpretation. Without an explanation of the basis for the opinions or an explanation of the qualifications of the individuals offering such opinions, the expert opinions are merely "[b]are assertions and speculations" and insufficient to demonstrate that Nevada's proposed no-action alternative would "paint a 'seriously different picture of the environmental landscape'" than the no-action alternatives already analyzed by DOE. Therefore, TIM-NEPA-02 also does not meet the criterion at 10 C.F.R. § 2.326(a)(3). Because TIM-NEPA-02 does not meet the heightened admissibility criteria of 10 C.F.R. §§ 2.326 and 51.109(a)(2), the contention is inadmissible. In addition, as discussed further below, the contention does not meet all the contention admissibility criteria of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iii): Within the Scope of the Proceeding

An admissible contention requires a showing that “the issue raised is within the scope of the proceeding.” 10 C.F.R. § 2.309(f)(1)(iii). The scope of an NRC adjudicatory proceeding is defined by the Commission in its initial hearing notice and order. *Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985); *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC

1, 23 (2007). A licensing board “does not have the power to explore matters beyond those which are embraced by the notice of hearing for the particular proceeding.” *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-90 n.6 (1979). In addition, challenges to applicable statutory requirements are outside the scope of the proceeding and therefore inadmissible. *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179 (1998) (citing *Philadelphia Elec. Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974)).

As discussed further below with regard to the materiality of the contention, TIM-NEPA-02 rests on an interpretation of the NWPA that would require DOE to consider site-specific alternatives to disposal of high-level waste and spent fuel in a geologic repository at Yucca Mountain, including surface storage within the controlled area. TIM Petition at 26. However, this interpretation is not consistent with a plain reading of the statute. Therefore, the contention's assertion that DOE is required to consider site-specific alternatives to disposal in a geologic repository is a challenge to the statute. As such, TIM-NEPA-02 is outside the scope of the proceeding. On this basis, the contention is inadmissible.

A contention must demonstrate that the issue raised therein "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy its obligations under NEPA.

NEPA generally requires that an agency consider the impacts of reasonable alternatives. 40 C.F.R. § 1502.14. However, section 114(f) of the NWPA relieves DOE of the duty of considering "alternatives to the isolation of high-level radioactive waste and spent nuclear

fuel in a repository." 42 U.S.C. § 10134(f)(2) (2000). DOE, therefore, considers only the no-action alternative in its NEPA analysis. The contention argues that the statute does not excuse DOE from considering site-specific alternatives to disposal in a mined repository, including surface-based storage within the controlled area at Yucca Mountain. TIM Petition at 26. This reading is based on the fact that in section 114(f), the word "repository" is not modified by any descriptor such as "deep" or "mined." However, the NWPA clearly defines "repository" as "any system licensed by the [NRC] that is intended to be used for, or may be used for, the permanent *deep geologic* disposal of high-level radioactive waste and spent nuclear fuel." 42 U.S.C. § 10101(18) (2000) (emphasis added). The petitioners offer no support for the statutory interpretation presented in the contention, despite the fact that the interpretation is not supported by a plain reading of the statute. Further, the NWPA specifically precludes interim surface storage at Yucca Mountain, 42 U.S.C. § 10155(a)(2), so the alternative offered by TIM is not a reasonable alternative. The contention does not demonstrate that the issue raised is material to the findings the NRC must make pursuant to 10 C.F.R. § 63.31(c) to issue a construction authorization for the repository. TIM-NEPA-02 does not comply with 10 C.F.R. § 2.309(f)(1)(iv) and, therefore, is inadmissible.

TIM-NEPA-03 - REPOSITORY THERMAL EFFECTS

> DOE's use in the FEIS and FSEIS of a constant-temperature boundary condition at land surface, combined with material-property and thermodynamic assumptions that limit heat-pipe effects in their Multiscale Thermohydrologic Model (MTHM; SNL, 2008 [LSN # DOC.20080201.0003]) results in non-conservative estimates of mechanical strains resulting from repository heating by minimizing the horizontal components of thermal gradients in the subsurface, prevents thermal effects on the biosphere from being rigorously assessed, and underestimates the magnitude of gaseous radionuclide releases. Had these deficiencies been remediated the disclosure of impacts in the FEIS and SFEIS would have been materially different, therefore the FEIS and SFEIS can not be adopted by NRC.

TIM Petition at 28. TIM-NEPA-03 alleges that the 2002 EIS and Repository SEIS are inadequate because of deficiencies in the Multiscale Thermohydrologic Model. TIM Petition at 28.

Staff Response

As discussed further below, this contention does not meet the heightened contention admissions criteria at 10 C.F.R. §§ 2.326 and 51.109(a)(2). In addition, because the contention does not demonstrate that the issue raised is material to the findings the NRC must make to issue a construction authorization for the repository and is not adequately supported by fact or expert opinion, the contention does not meet all the contention admissibility criteria of 10 C.F.R. § 2.309(f)(1). For these reasons, TIM-NEPA-03 is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented."

10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, the petitioner does not directly address the motion to reopen criteria. Moreover, the contention does not provide sufficient information to satisfy the criteria. First, the petitioner does not demonstrate that the issue raised in TIM-NEPA-03 is a significant environmental issue. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. Here, the contention is supported by an affidavit from Martin Mifflin, Ph.D. However, the affidavit does not contain any specific information regarding the basis for Dr. Mifflin's opinions.

In the text of the contention, the petitioner touches on several different arguments. First, the petitioner argues that abstractions based on certain material properties and thermodynamic assumptions used in the performance assessment in the 2002 EIS and Repository SEIS "misrepresent a range of processes important to repository performance, including drift stability, dryout/rewetting, and venting of gaseous radionuclides to the atmosphere." TIM Petition at 28. In support of this assertion, the contention cites studies that allegedly "demonstrate fault-zone permeabilities may be orders of magnitude higher than assumed in 1995," and states that "USGS staff have been promoting studies of the feasibility of passively ventilating the repository." TIM Petition at 30. Without further explanation, the contention then concludes that "[a]vailable evidence is therefore completely at odds with predictions of zero temperature rise at the ground surface, gas-travel sufficiently long to significantly attenuate radon-222 doses, and a 'smooth' thermal field above the repository that would limit thermally induced strains." *Id.* It appears that TIM is asserting that individuals will be attracted to “repository-induced ‘blowholes” caused by increased temperature above the repository and these individuals may be exposed to radiation. See TIM Petition at 30. Because DOE failed to consider the possibility of thermal fields above the repository, DOE also failed to consider potential doses to these individuals. *Id.* In support of its supposition, the contention notes that "the subject of pneumatic pathways and the adequacy of their characterization was the subject of a Differing Professional View." *Id.* None of these vague, general statements, even if true, is sufficient to support a showing that the issue raised in TIM-NEPA-03 is significant. Therefore, TIM-NEPA-03 does not meet the motion to reopen criterion in 10 C.F.R. § 2.326(a)(2).

In addition, the contention does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage,*

LLC (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek,* CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*. As discussed above, the contention contains information that allegedly supports the position advanced by the petitioner. However, without further analysis, the information is little more than assertion or speculation, and is not sufficient to demonstrate that if this information were considered, there would be a materially different result with regard to DOE's NEPA analysis.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted environmental impact statements to the NRC in conjunction with its license application. These documents are intended to satisfy its obligations under NEPA.

The petitioner argues in TIM-NEPA-03 that DOE's "NEPA documents fail to assess the environmental impacts of the proposed Yucca Mountain Repository," because it did not

consider doses to individuals attracted the repository by its warmth. TIM Petition at 29-30. TIM, however, does explain how these impacts would render the EISs inadequate such that the staff could not make the required findings. The purpose of reviewing an agency's NEPA analysis is not to "'flyspeck' an agency's environmental analysis, looking for any deficiency no matter how small." *Nevada v. U.S. Dep't of Energy*, 457 F.3d 78, 93 (D.C. Cir. 2006). TIM does not explain why this specific failure is so significant it is material to the findings the NRC must make and renders DOE's NEPA documents impracticable for adoption. TIM Petition at 29. TIM-NEPA-03 does not comply with 10 C.F.R. § 2.309(f)(1)(iv), and, therefore, is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The significance of each supporting reference must be explained. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Similarly, if a party relies on an expert opinion, a failure to provide "'a reasoned basis or explanation for that conclusion . . . deprives the Board of the ability to make the necessary, reflective assessment of the opinion.'" *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

As discussed above, the contention is associated with affidavits from Dr. Mifflin, but neither the affidavit nor the contention explain the basis for his opinions. TIM-NEPA-03 is not adequately supported by fact or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(v). For this reason, the contention is inadmissible.

TIM-NEPA-04 - SATURATED ZONE FLOW MODEL

> Abstractions from the Site Scale Saturated-Zone Flow Model to support Performance Assessment (PA) in the FEIS and FSEIS are invalid because process-level analyses incorporated in the Model are not representative of physical evidence from aquifer tests and groundwater temperatures, nor do they honor evidence from paleo-discharge deposits in the region. Were these deficiencies to be remedied, the disclosure of impacts would be materially different, and therefore the FEIS and FSEIS can not be adopted by the NRC.

TIM Petition at 33. TIM-NEPA-04 alleges that the 2002 EIS and Repository SEIS are deficient because abstractions from the site scale saturated-zone flow model used to support performance assessment in both documents are invalid. TIM Petition at 33.

Staff Response

As discussed further below, the contention does not meet the heightened admissibility standards of 10 C.F.R. §§ 2.326 and 51.109(a)(2). In addition, the contention does not demonstrate that the issue raised therein is material to the findings the NRC must make to issue a construction authorization for the repository, as required by 10 C.F.R. § 2.309(f)(1)(iv). For these reasons, TIM-NEPA-04 is inadmissible.

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at

Yucca Mountain," 73 Fed. Reg. 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, the petitioner does not explicitly address the motion to reopen criteria. For that reason, the contention is inadmissible. Moreover, the contention does not provide sufficient information to otherwise show that the contention satisfies the criteria. First, the petitioner does not demonstrate that the issue raised in TIM-NEPA-04 is a significant environmental issue. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek,* CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* Here, the contention is supported by affidavits from Cady Johnson, Ph.D, and Martin Mifflin, Ph.D. However, the affidavits do not contain any specific information regarding the basis for Dr. Mifflin's or Dr. Johnson's opinions. Instead, they merely state that that Drs. Johnson and Mifflin "adopt as [their] own opinions the statements contained within Paragraph 5 and 6 of Contentions" TIM-NEPA-04, among others. TIM Petition, Attachment 2, Affidavit of Cady Johnson at ¶ 3; Attachment 3, Affidavit of Martin D. Mifflin at ¶ 3.

In the text of the contention, the petitioner argues that "FEIS Subsections 5.3 and 5.4,

and SEIS Subsections 5.5.1 and 5.5.2 fail to analyze a groundwater flow regime that is representative of pluvial conditions, which in combination with the excessively thick flow domain used to represent modern conditions results in erroneous conclusions regarding the effects of future climates." TIM Petition at 35. Further, the contention states that the alleged "deficiencies are manifested by erroneous, misleading, or incomplete statements throughout Section 2.3.9 of the LA Safety Analysis Report." *Id.* at 36-36. There follows a listing of alleged deficiencies in the SAR, the significance of which is not adequately explained. The contention does provide two figures showing the results of analyses presumably done by Drs. Johnson and Mifflin, although the origin of the analyses is not specifically stated in the contention. *Id.* at 37-41. While the contention contends that this analysis is "simple and relatively transparent," *id.* at 41, vital information that would be needed to judge the reasonableness of the underlying analysis is not provided. Attachment C, Affidavit of James R. Winterle at ¶ 5. For example, no information is provided as to how the model for current conditions was calibrated to match observed water levels. *Id*. The match, however, would likely be quite poor as key structural features in the model domain, such as the Solitario Fault and the area of low permeability to the north of the repository appear absent from the model. *Id.* It is also not explained how these calculations demonstrate the significance of the issue raised in the contention.

In addition, the contention does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id*. at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412,

418 (7th Cir.1984)). Any "new information must paint a 'seriously different picture of the environmental landscape'" to warrant a supplement. *Id.* (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n,* 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI 08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id*. As discussed above, the contention contains information that allegedly supports the position advanced by the petitioner. However, without further analysis and technical support, the information is little more than assertion or speculation, and is not sufficient to demonstrate that if this information were considered, there would be a materially different result with regard to DOE's NEPA analysis. TIM-NEPA-04 does not satisfy the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). On this basis, the contention is inadmissible. In addition, as discussed below, the contention does not meet all the contention admissibility requirements in 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

A contention must demonstrate that the issue raised therein "is material to the findings the NRC must make to support the action that is involved in the proceeding. Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted several environmental impact statements to the NRC in conjunction with its license application, including the Repository SEIS. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 11, 87 (1998). Supplementation to correct an inadequate analysis is required where "'new

information' . . . raises a previously unknown environmental concern, but not necessarily when it amounts to mere additional evidence supporting one side or the other of a disputed environmental effect." *Private Fuel Storage*, CLI-06-3, 63 NRC at 28 (internal citations omitted) (emphasis in original).

To address the materiality requirement, TIM-NEPA-04 alleges that "the NEPA documents fail to assess the environmental impacts of the proposed Yucca Mountain Repository," but does not explain specifically where DOE's NEPA analysis is lacking. TIM Petition at 34. As discussed above, this contention instead identifies alleged failures in the SAR, but the contention does not explain how these alleged failures relate to DOE's NEPA analysis. Even if these alleged failures are assumed to be relevant to the NEPA analysis, the contention does not demonstrate that this information rises to the level of a previously unknown environmental concern. TIM-NEPA-04 does not demonstrate that the issue raised therein is material to the finding the NRC must make to issue a construction authorization for the repository, and the contention, therefore, is inadmissible.

TIM-NEPA-05 - INFILTRATION FLUX

> DOE's infiltration model has not been validated using available site and analogue information, and does not represent the range of probable infiltration fluxes, rendering the consequence estimates presented in FEIS Section 5.4 and SEIS Section 5.5 non-conservative and therefore invalid; had these deficiencies been remedied the disclosure of impacts would have been materially different, therefore the FEIS and FSEIS can not be adopted by the NRC.

TIM Petition at 44. TIM-NEPA-05 alleges that the 2002 EIS and Repository SEIS present analyses performed with an infiltration model that is not properly validated. *Id*.

Staff Response

As discussed further below, this contention does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2). On this basis, the contention is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the

newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

The petitioners do not demonstrate that the issue raised in TIM-NEPA-05 is a significant environmental issue. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* Here, the contention is accompanied by affidavits from Cady Johnson and Martin Mifflin. The affidavits themselves do not contain any technical information, but reference TIM-NEPA-05. TIM Petition, Attachment 2, Affidavit of Cady Johnson ¶ 3; Attachment 3, Affidavit of Martin D. Mifflin ¶ 3. The contention alleges that a potential future-climate natural analog site (Rainier Mesa) is not considered in the supporting document for infiltration, although the site was well-known. TIM Petition at 46. The contention also raises questions about the model chosen by DOE. *Id.* at 47-48. However, these general allegations of problems with DOE's model are not enough to show that the issue raised by the petition, that DOE's model should have included an additional analog site, is significant.

In addition, the petition does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A

supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id.* While the petition offers expert opinion that DOE's model is flawed, the contention does not offer any independent technical information. This is not enough to demonstrate that the information presented, if considered, would paint "a *seriously* different picture of the environmental landscape." TIM-NEPA-05 does not meet the criteria at 10 C.F.R. § 2.326(a)(2). Because TIM-NEPA-05 does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2), the contention is inadmissible.

TIM-NEPA-06 - ECONOMIC ANALYSIS

> The FSEIS, Subsections 3.1.7 and Table 3-1 define the Region of Influence for socioeconomic effects as "The two-county (Clark and Nye) area in which repository activities could most influence local economies and populations (Section 3.1.7)." This definition is a value jugedment [sic] that is not supported by the analysis contained in the FSEIS.

TIM Petition at 51. TIM-NEPA-06 alleges that the definition of the Region of Influence for socio-economic effects in DOE's FSEIS Subsection 3.1.7 and FSEIS Table 3-1 overlooks impacts the proposed action will have on the Timbisha Shoshone village in Death Valley. TIM Petition at 51.

Staff Response

As discussed further below, this contention is inadmissible because it fails to comply with the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) and because it does not satisfy the contention admissibility requirements of 10 CFR § 2.309(f)(1).

Since this contention raises an environmental issue, it must comply with the heightened admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2) in addition to the contention admissibility requirements applicable to other contentions as specified in 10 CFR § 2.309(f)(1). 10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also* "Notice of Hearing and Opportunity to Petition for Leave to

Intervene on an Application for Authority to Construct a Geologic Repository at a Geologic Repository Operations Area at Yucca Mountain," 73 Fed. Reg. at 63,029, 63,031 (Oct. 22, 2008). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits.

Here, TIM-NEPA-06 does not explicitly address the § 2.326 criteria, but merely asserts, without further explanation, that the Commission "must consider the environmental impacts of proposed action in order to meet the requirements of the National Environmental Policy Act." TIM Petition at 51.

This is not sufficient to meet the motion to reopen criteria. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC at __ (Nov. 6, 2008) (slip op. at 16).

While it may be appropriate to include less technical support for a primarily legal contention, as an environmental contention, TIM-NEPA-06 must meet the "deliberately heavy" burden set in 10 C.F.R. § 2.326 by providing a detailed analysis of the applicable legal requirements. Therefore, since it fails to address any of the heightened evidentiary standards, TIM-NEPA-06 does not meet the motion to reopen criteria at 10 C.F.R. § 2.326(a) as required by § 51.109(a)(2), and the contention is inadmissible.

In addition, the Staff submits that TIM-NEPA-06 does not comply with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although a

supporting affidavit is required by regulation, TIM-NEPA-06 does not include an affidavit in support of this contention, nor does TIM-NEPA-06 offer any explanation for the omission. For this reason, TIM-NEPA-06 is inadmissible.

In addition, the contention does not comply with the requirements of 10 C.F.R. §§ 2.309(f)(1)(iv) and (v), as discussed below.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

TIM-NEPA-06 fails to demonstrate that the issue it raises is material to the finding the Commission must make. An admissible contention must assert an issue of law or fact that is "material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). That is, the petitioner must show that the subject matter of the contention would impact the grant or denial of the pending construction authorization. The APAPO Board stated that this "requires citation to a statute or regulation that, explicitly or implicitly, has not been satisfied by reason of the issue raised in the contention." *U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

TIM-NEPA-06, however, does not cite to a single statute, regulation or judicial opinion to demonstrate that the issue it raises is "material to the findings the NRC must make. . ." 10 C.F.R. § 2.309(f)(1)(iv). Therefore, TIM-NEPA-06 must be rejected.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must also be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel,* Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, assertions, without further explanation, even from an expert are insufficient to meet the requirement of

section 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

TIM-NEPA-06 merely asserts that DOE's "FSEIS does not acknowledge that there will be economic effects from the use of the road network in the area or the increase in traffic caused by the construction of the repository. TIM Petition at 52. TIM-NEPA-06 asserts three unsubstantiated basis for this position: 1) DOE's methods have established artificial impact boundaries, 2) DOE's analysis ignores effects on the local economy, and 3) the FSEIS fails to acknowledge effects outside Nevada. *Id.* No reason is given for any of these assertions. TIM-NEPA-06 does not explain the basis for these claims and does not show how they are material to a finding the Commission must make in order to grant the application. Therefore, this contention should be rejected for failure to alleged facts or provide expert opinions to support its position.

TIM-NEPA-07 - MITIGATION

> The FSEIS' discussion of mitigation is contradictory and suggests that the DOE has failed to consider its responsibilities to mitigate the hazards of these shipments in a meaningful way.

TIM Petition at 54. In this contention TIM contends that DOE's FSEIS mitigation analysis with respect to potential transportation through or near tribal lands is deficient. *Id.*

Staff Response

As discussed below, this contention does not meet the requirements of 10 C.F.R. § 2.326. In addition, the contention does not comply with 10 C.F.R. § 2.309(f)(1) because it does not demonstrate that the issue raised is material to the findings the NRC must make or provide sufficient information to show a genuine dispute exists. For these reasons, TIM-NEPA-07 is inadmissible.

In addition to the generic contention admissibility requirements of 10 C.F.R. § 2.309(f)(1), 10 C.F.R. § 51.109(a)(2) establishes additional standards for the admission of contentions related to NEPA. NEPA contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered

initially." 10 C.F.R. § 2.326(a). Section 2.326(b) also requires supporting affidavits that set forth the factual and/or technical bases for the petitioner's claim that the criteria of paragraph (a) of this section have been satisfied. *See Amergen Energy Co. LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC ___ (November 6, 2008) (slip op. at 13). "Section 2.326(b) requires motions to reopen to be accompanied by affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant safety issue, together with evidence that satisfies our admissibility standards." *Id.* at 16. Proponents of a reopening motion bear the burden of meeting all of the requirements. *Id.* at 13-14.

TIM-NEPA-07 is inadmissible because the petitioner has failed to address the motion to reopen criteria as required by 10 C.F.R. § 2.326(b). Nothing in the contention implies that the petitioner has raised a significant safety or environmental issue. *See* 10 C.F.R. § 2.326(a)(2). The contention simply states, without elaborating, that the FSEIS "does not describe the tribe's role" in mitigating impacts outside the state of Nevada or on local tribes." TIM Petition at 55. Such unsupported assertions fall far short of demonstrating that the contention poses a significant environmental issue. *See Oyster Creek*, CLI-08-28, 68 NRC __ (slip op. at 16) ("A 'mere showing' of a possible violation is not enough" to demonstrate a significant safety issue). In addition, the contention does not address the third criterion, let alone demonstrate that a materially different result would have resulted or been likely, had DOE included specific mitigation plans that included the Timbisha Shoshone tribal lands. Consequently, the contention fails to meet the requirements of 10 C.F.R. § 2.326(a).

Sections 2.326 and 51.109(a)(2) also require that a NEPA contention be supported by an affidavit. The Staff submits that TIM has not complied with the requirement in 10 C.F.R. §§ 2.326(a)(3), 2.326(b) and 51.109(a)(2) to file a supporting affidavit. Although neither regulation specifies what must be contained in a supporting affidavit, general NRC practice requires that an expert explain the basis for his or her opinion. *See USEC, Inc. (*American

Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006), quoting *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). In addition, the APAPO Board stated that " affidavits shall be individually paginated and contain numbered paragraphs that can be cited with specificity," indicating that the affidavits were indeed required and intended to contain detailed information. *U.S. Dep't of Energy* (High-Level Waste Repository; Pre-Application Matters, APAPO Board), LBP-08-10, 67 NRC 450, 455 (2008). Further, although not binding on the NRC, the Federal Rules of Civil Procedure illustrate what is generally expected from an affidavit. In the context of a motion for summary judgment, the Federal Rules state that an "affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated." F. R. Civ. Pro. 56.

TIM-NEPA-7 appears to be associated with an affidavit from Fred Dilger, Ph.D. Dr. Dilger's affidavit states that

> Within the Petition are numerous Contentions, each comprised of several paragraphs. I hereby adopt as my own opinions the statements contained within Paragraph 5 of those specific contentions identified in Attachment B to this Affidavit. I understand that attorneys for the Timbisha Shoshone Tribe will assign unique numbers to each of those contentions just prior to the filing of the Petition and will include those unique numbers in Attachment B.

TIM Petition Attachment 1, Affidavit of Fred C. Dilger Affidavit ¶ 3. The affidavit also recites the documents reviewed by Dr. Dilger prior to signing the affidavit: the 2002 EIS, the Repository SEIS, the Rail Corridor SEIS, the Rail Alignment EIS, the Timbisha Shoshone Tribe's Petition, and "all documents cited to or referred to in the Contentions." Dilger Affidavit ¶ 2. Attachment B of the affidavit is a list of "Contentions Adopted by Fred C. Dilger In Accordance With Affidavit." This list is neither signed nor initialed by Dr. Dilger and there is no other indication that Dr. Dilger reviewed the list, and therefore had knowledge of the contents of the list, prior to it being filed, particularly as Dr. Dilger acknowledged that the list

would be prepared by counsel after he completed the affidavit. Dilger Affidavit ¶ 3. Neither the contention itself nor Dr. Dilger's affidavit specifies which statements in the contention are attributable to Dr. Dilger, so the reader is left to assume that either the entire discussion in Paragraph 5 or all statements not otherwise attributed to a specific document, including, in either case, legal conclusions, are attributable to Dr. Dilger. Although the affidavit does list documents which Dr. Dilger reviewed prior to signing the affidavit, neither the contention nor the affidavit explains exactly which documents or parts thereof formed the basis of which of Dr. Dilger's opinions. Nor does the affidavit or the contention mention any additional personal knowledge or facts upon which Dr. Dilger based his opinions.

TIM has not attached the required affidavit, nor does TIM-NEPA-7 meet the heightened admissibility requirements of 10 C.F.R. § 2.326 and 51.109(a)(2). For these reasons, the contention is inadmissible. In addition, as discussed further below, TIM-NEPA-7 does not comply with the requirements of C.F.R. §§ 2.309(f)(1)(iv) and (vi) and is therefore not an admissible contention.

10 C.F.R. § 2.309(f)(1)(iv): Materiality

The Commission's regulations at 10 C.F.R. § 2.309(f)(1)(iv) require that an issue must be material to the findings the Commission must make. "Any issues of law or fact raised in a contention must be material to the grant or denial of the license application in question, i.e., they must make a difference in the outcome of the licensing proceeding so as to entitle the petitioner to cognizable relief…This requirement of materiality embodies the notion that an alleged error or deficiency regarding a proposed licensing action must have some significance relative to the agency's general responsibility and authority to protect the public health and safety and the environment." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Facility), LBP-98-7, 47 NRC 142, 179-80 (1998). In addition, the Order of the APAPO Board made clear that Section 2.309(f)(1)(iv) "requires citation to a statute or regulation that explicitly or implicitly, has not been satisfied by reason of the issue raised in

the contention." *High Level Waste Repository*, LBP-08-10, 67 NRC at 455.

With respect to mitigation, the law requires that an Environmental Impact Statement must include a detailed statement regarding adverse environmental effects that cannot be avoided. *See* 42 U.S.C. § 4332(2)(C)(ii) (2000). This requirement entails a duty to discuss measures to mitigate adverse environmental requirements. 40 C.F.R. § 1502.16(h); *see also Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 351-52 (1989). "An EIS need not, however, contain 'a complete mitigation plan,' or 'a detailed explanation of specific measures which will be employed.'" *Hydro Resources, Inc.* (P.O. Box 777, Crownpoint, NM 87313), CLI-06-29, 64 NRC 417, 426-27 (2006), quoting *Robertson*, 490 U.S. at 352-353. "Indeed, a mitigation plan 'need not be legally enforceable, funded or even in final form to comply with NEPA's procedural requirements.' As long as the potential adverse impacts from a proposed action have been adequately disclosed, it is not improper for an EIS to describe 'mitigating measures in general terms and rel[y] on general processes ….'" *Id.* (internal citations omitted).

In this contention TIM does not cite to any statute or regulation that has not been satisfied by the mitigation plan contained in FSEIS. As discussed in detail below, the contention merely expresses displeasure with the mitigation plan, without indicating in any way that DOE has failed to follow applicable law or regulation. The FEIS/FSEIS need not contain a "complete mitigation plan" and may discuss mitigation in general terms. *Id.* As such TIM-NEPA-07 does not raise a material issue and fails to meet the criteria of 10 C.F.R. § 2.309(f)(1)(iv), or the Order of the PAPO Board. As such, it must be dismissed.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Under the pleading criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of

law or fact . . . . The intervenor must do more than submit 'bald or conclusory allegation[s]' of a dispute with the applicant. . . . He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (quoting "Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). In this contention, TIM alleges that the transportation mitigation plan described in Chapter 9 of the FSEIS "has failed to provide a framework for mitigating the impacts of this program; it has failed to describe how the mitigation will take place." TIM Petition at 55-56. The contention appears to argue for a mitigation plan that mitigates impacts outside of the state of Nevada, that outlines how eligibility for mitigation will be determined and describes what kind of program DOE will create to handle mitigation during each of the phases of construction. *Id.* at 55. However, the contention fails to cite to any statute or regulation (other than a general reference to NEPA), that has not been satisfied by DOE's treatment of transportation mitigation. The contention simply states, "The FSEIS does not describe how the DOE will comply with NRC requirements for protection of the public." *Id.* at 56. However, the Tribe does not cite to any law or regulation that requires that a mitigation plan meet this requirement. Indeed, as discussed above, it is legally permissible for a mitigation plan to describe mitigation measures in general terms. *See Hydro Resources*, CLI-06-29, 64 NRC at 427.

In sum, the contention does not specify how the FSEIS fails to comply with statute or regulation, and does not indicate that there is a genuine dispute regarding a material fact or law. Indeed, the FEIS and FSEIS actually appear to address the very issues raised by the Timbisha Shoshone Tribe, albeit not to the Tribe's satisfaction. The contention merely alleges a dispute with the applicant, which is not sufficient to admit the contention. *See*

Millstone Nuclear Power Station, CLI-01-24, 54 NRC at 358.

For all of the foregoing reasons, TIM-NEPA-07 is not an admissible contention.

TIM-NEPA-08 - FUTURE CLIMATE

> DOE has failed to conservatively incorporate the full range of likely future climates in their analyses of system response to climate change, on that basis their FEIS (Section 5.4) and SEIS (Section 5.5) are deficient, and had these deficiencies been remedied the disclosure of impacts would have been materially different; therefore the FEIS and FSEIS can not be adopted by the NRC.

TIM Petition at 57. The Timbisha Shoshone Tribe ("Tribe") asserts that the NRC cannot adopt DOE's 2002 EIS and Repository SEIS because these documents fail to consider the full range of likely climate changes. *See id.* Specifically, the Tribe alleges that Antarctic ice core-derived records of average global temperature and atmospheric greenhouse gas concentrations, documentation of ocean circulation changes, and current global warming indicate that DOE's characterization of global climate for the next 10,000 is not conservative. *Id.*

Staff Response

As explained further below, this contention does not comply with the requirements of 10 C.F.R. § 2.326. In addition, this contention fails to meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1)(v). TIM-NEPA-08 is therefore inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The

motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id*. In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary." *Id*. at 28, quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984). Any "new information must paint a 'seriously different picture of the environmental landscape.'" *Id*. at 28, quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14), citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990). Section 2.326(b) also requires supporting affidavits.

Here, the Tribe has not addressed the 10 C.F.R. § 2.326 criteria. The Tribe asserts that TIM-NEPA-08 raises a “material issue” (TIM Petition at 58) and had the alleged deficiency been remedied, then “the disclosure of the impacts would have been materially

different . . . ." TIM Petition at 57. The Tribe, however, fails to *demonstrate*, as required by 10 C.F.R. § 2.326(a)(3), that a materially different result would be or would have been likely had DOE conservatively incorporated the Tribe's alleged range of likely future climate events in the FEIS and FSEIS analyses. *See* 10 C.F.R. § 2.326(a)(3). The Tribe states that "ice-core data can be interpreted to suggest that a return to full-glacial climate is imminent," and therefore, DOE should "consider the effects of full-glacial climates. . ." TIM Petition at 59 (internal citation omitted). But, the Tribe does not provide any information to suggest that even if this information were considered, what, if any, impact this would have on DOE's analysis. Furthermore, the Tribe has not shown that this contention addresses a significant health or safety issue. The Tribe simply asserts, without reasoning or explanation, that TIM-NEPA-08 raises a "material" issue. *See* TIM Petition at 58. Thus, the Tribe fails to satisfy 10 C.F.R. § 2.326(a)(2) and (3).

In addition, the affidavits accompanying this contention (submitted by Martin Mifflin and Cady Johnson) fail to meet the required criteria set forth in 10 C.F.R. § 2.326(b), i.e., the affidavits do not address any of the specific criteria listed in 10 C.F.R. § 2.326(a). *See* TIM Petition at Attachments 2 & 3. Because the affidavits simply adopt the statements contained in paragraphs 5 and 6 of the contention (which itself fails to meet the applicable 10 C.F.R. § 2.326 criteria as discussed herein), the affidavits fail to meet the criteria of 10 C.F.R. § 2.326(b). Therefore, TIM-NEPA-08 should be rejected because it fails to satisfy the heightened admissibility requirements.

In addition, as discussed below, this contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1)(iv) and (v).

10 C.F.R. § 2.309(f)(1)(iv): Materiality

To be admissible, a contention must demonstrate that the issue raised "is material to the findings the NRC must make to support the action that is involved in the proceeding." 10 C.F.R. § 2.309(f)(1)(iv). Here, the relevant finding is that "after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization." 10 C.F.R. § 63.31(c). DOE has submitted environmental impact statements, including the FSEIS, to the NRC in conjunction with its license application. These documents are intended to satisfy the requirement that DOE take a "hard look" at all reasonably foreseeable environmental impacts. *See Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 87-88 (1998) ("*LES*"). The intent of NEPA is not to "flyspeck" environmental documents "looking for any deficiency no matter how minor." *Nevada v. DOE,* 457 F.3d 78, 93 (D.C. Cir. 2006). Intervenors have the burden to show that any alleged deficiency is significant and material. *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-29, 62 NRC 801, 811 (2005). Supplementation to correct an inadequate analysis is required only where any additional information would "paint a '*seriously* different picture of the environmental landscape.'" *Private Fuel Storage*, CLI-06-3, 63 NRC at 28.

Here, the Tribe argues that DOE "failed to conservatively incorporate the full range of likely future climates in their analyses of system response to climate change" and therefore the FEIS and FSEIS are deficient. TIM Petition at 57. The Tribe states that based on greenhouse gas concentrations in Antarctica, there appears "to be a terrestrial feedback mechanisms that limit global temperature rise and initiate cooling episodes sooner than would be predicted by the Milakovich theory." *Id.* at 58-59. The Tribe asserts that there may be a return to a full-glacial climate earlier than predicted by DOE. *Id.* at 59. The Tribe argues that had DOE considered the full range of likely future climates, it would have

rendered a materially different result. *Id.* at 57. The Tribe does not however show that this alleged deficiency is significant and material because it does not explain how or if DOE's analysis would change had the suggested full range of likely future climate states been incorporated. *See Clinton ESP*, CLI-05-29, 62 NRC at 811. Thus, the Tribe has not shown that if DOE had considered this information and used the tribes suggested methodology, that it would "paint a 'seriously different picture of the environmental landscape.'" *Private Fuel Storage*, CLI-06-3, 63 NRC at 28. Because TIM-NEPA-08 does not demonstrate that the analysis that it urges is material to the adequacy of the Repository SEIS or 2002 EIS under NEPA or 10 C.F.R. Part 51, TIM-NEPA-08 is inadmissible.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The Tribe states that neither the FEIS nor the FSEIS conservatively incorporate the full range of likely future climates. TIM Petition at 57. The Tribe asserts that had these deficiencies been remedied, then the impacts would have been "materially different." *See id.* Two experts attest to the Tribe's assertion that a 1999 and 2008 study appear to indicate that cooling periods will be initiated sooner than would be predicted by DOE. *Id.* at 58-59. Missing from the Tribe's contention and expert opinions is an explanation of, even if DOE had considered the Tribe's alleged full range of likely future climates, why the impacts would be materially different. *See id.* at 57. The Tribe simply asserts that DOE's analyses are not conservative and are therefore deficient. *See* TIM Petition at 57-58. Mere assertions without further explanation, even from an expert, are not sufficient to satisfy 10 C.F.R. § 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

For the reasons discussed above, TIM-NEPA-08 is inadmissible.

TOP-NEPA-001[72] - NEPA REQUIREMENTS

> DOE's 2008 FSEIS and 2002 FEIS are inadequate because they fail to reasonably identify post-closure impacts to human health that are culturally appropriate to Timbisha. This deficiency is significant, and if it were to be addressed in a satisfactory manner, the disclosure of the radiological impact to the Newe would be materially disproportionate and significant.

TOP Petition at 13. The Timbisha Shoshone Yucca Mountain Oversight Program Non-profit Corporation (TOP) alleges that the FEIS and FSEIS do not reasonably identify post-closure health impacts due to radiation exposure that are culturally appropriate to the Timbisha Shoshone. *Id.* TOP has not clearly identified whether this is an environmental contention or a safety contention. The contention is under a "Safety" heading in the petition, but its title is "NEPA Requirements." *Id.* Since the title is "NEPA Requirements" and the contention challenges the adequacy of DOE's FEIS and FSEIS, the Staff is addressing this as an environmental contention. However, the Staff notes that if it were intended as a safety contention, it does not meet the 10 C.F.R. § 2.309(f)(1)(vi) requirement to establish a genuine dispute with the license application because it does not reference any portion of DOE's license application but rather disputes a Commission rule. *See, e.g., PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 24 (2007). TOP-NEPA-001 impermissibly challenges a regulation because TOP did not seek specific permission as required by 10 C.F.R. § 2.335. Section 63.312 sets forth the required characteristics of the reasonably maximally exposed individual (RMEI) and specifies that the RMEI "[h]as a diet and living style representative of the people who now reside in the Town of Amargosa Valley, Nevada." 10 C.F.R. § 63.312(b).

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[72] The Timbisha Shoshone Yucca Mountain Oversight Program Non-profit Corporation did not choose a three letter acronym or label for its contentions. For convenience, the Staff chose "TOP" as its acronym and assigned labels to its contentions.

Staff Response

As discussed further below, this contention does not comply with the heightened contention admissibility standards of 10 C.F.R. §§ 2.326(a) and 51.109(a)(2) and does not present affidavits as required by regulation. In addition, this contention does not satisfy the contention requirements in § 2.309(f)(1). TOP-NEPA-001 is not supported by adequate supporting facts or expert opinion and does not raise a genuine dispute on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(v) and (vi). For these reasons, TOP-NEPA-001 is inadmissible.

10 C.F.R. § 51.109(a)(2) establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." 10 C.F.R. § 51.109(a)(2). Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *See also U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC ___ (Oct. 17, 2008) (slip op at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). The burden of meeting these criteria rests with the proponent. *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting

affidavits.

TOP has not explicitly addressed the criteria in 10 C.F.R. § 2.326. Moreover, TOP does not demonstrate that the issue raised in TOP-NEPA-001 is a significant environmental issue. In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant…issue, together with evidence that satisfies [the Commission's] admissibility standards." *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 16). A " 'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* Here, the contention is not accompanied by any affidavits, and so, TOP has not met its burden of demonstrating that the issue raised in TOP-NEPA-001 is a significant environmental issue.

In addition, the petition does not demonstrate that "a materially different result would be or would have been likely had the newly proffered evidence been considered initially," as required by 10 C.F.R. § 2.326(a)(3). In the context of an EIS, the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27-29 (2006). A supplemental EIS is required only where new information " 'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.' " *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.' " 63 NRC at 28 (quoting *National Committee for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004) (emphasis in original). This showing also requires something more than "[b]are assertions and speculations" to be offered in support of the contention. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 22). Rather, to meet the "deliberately heavy" burden, "technical details and analysis [are] required." *Id.*

While TOP-NEPA-001 references a journal article, its only explanation of that article is it

"demonstrates that assessments of risk need to take into account different lifestyle, different diet and life-ways." TOP Petition at 14 (citing Eric Frohmberg et al, *The Assessment of Radiation Exposures in Native American Communities from Nuclear Weapons Testing in Nevada*, RISK ANALYSIS, 20(1) (2000)). However, the contention does not address how DOE's consideration of these factors was inadequate, nor does the contention demonstrate that the radiological impact to the Newe would be "materially disproportionate and significant." *See* TOP Petition at 13. Because TOP-NEPA-001 does not meet the heightened contention admissibility requirements of 10 C.F.R. §§ 2.326 and 51.109(a)(2), the contention is inadmissible. In addition, as discussed below, TOP-NEPA-001 fails to meet the requirements of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

TOP-NEPA-001 does not satisfy § 2.309(f)(1)(v) because no expert opinion is provided and only a conclusory statement regarding the referenced study is provided. *See* TOP Petition at 14 ("The study…demonstrates that assessments of risk need to take into account different lifestyle, different diet and life-ways."). The only other supporting information TOP offers is the following assertion: "Timbisha discovered that Newe exposure from radioactive fallout from US testing of weapons of mass destruction was significant based on lifestyle differences such as diet, through the consumption of wild game. TOP Petition at 14. Attaching a document in support of a contention without any explanation of its significance does not provide an adequate basis for a contention. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-10, 47 NRC 288, 298-99 (1988); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Station, Units 1 & 2), LBP-02-4, 55 N.R.C. 49, 66 (2002) (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 & 2), CLI-98-25, 48 NRC 325, 348 (1998) ("Mere reference to documents does not, however, provide an adequate basis for a contention."). Because TOP-NEPA-001 does not adequately explain the significance of the referenced

study, the study does not provide an adequate basis to admit this contention. Accordingly, TOP-NEPA-001 is inadmissible.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

TOP-NEPA-001 argues that the FEIS and FSEIS are inadequate because they fail to address a culturally appropriate estimate of radiation exposure to Native Americans. TOP Petition at 13. However, DOE specifically addressed several comments relating to these issues in its 2002 EIS. FEIS, Vol. III, at CR7-617 to 618, CR7-731 to 733. In addition, the FSEIS states

> DOE has not identified subsections of the population, including minority or low-income populations, that would receive disproportionate impacts, and it has identified no unique exposure pathways, sensitivities, or cultural practices that would expose minority or low-income populations to disproportionately high and adverse impacts.

FSEIS, Vol. I at 4-96. TOP-NEPA-001 does not demonstrate, nor even address, how DOE's treatment of health impacts to Native Americans is inadequate. TOP-NEPA-001 does not show how the analysis DOE conducted is different from an analysis performed in accordance with the study it cited. Further, TOP-NEPA-001 does not demonstrate that its proposed analysis would lead to materially disproportionate and significant impacts to the Newe.

Therefore, as discussed above, TOP-NEPA-001 does not provide sufficient information to show a genuine dispute with the applicant and, therefore, should be rejected.

WHI-NEPA-1 - FAILURE OF ENVIRONMENTAL IMPACT STATEMENTS TO FULLY DISCLOSE CONSEQUENCES OF RADIATION CONTAMINATED TEPHRA DEPOSITION IN AREAS OTHER THAN THAT DIRECTLY APPLICABLE TO THE REASONABLY MAXIMALLY EXPOSED INDIVIDUAL

> Because the Yucca Mountain FEIS and the Repository FSEIS omit any consideration or analysis of the environmental and public health consequences of radiation contaminated tephra deposition in White Pine County and other downwind areas, NRC cannot adopt the EISs without the addition of supplementary information.

WHI Petition at 18. White Pine County asserts that the Staff cannot adopt DOE's FEIS and FSEIS because these documents omit any consideration or analysis of the consequences of radiation-contaminated tephra deposition in White Pine County. WHI Petition at 18.

Staff Response

As discussed below, WHI-NEPA-1 should not be admitted because White Pine County fails to specifically address the reopening standards of 10 C.F.R. § 2.326. In addition, the contention does not meet all the contention admissibility criteria of 10 C.F.R. § 2.309(f)(1).

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result

would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, White Pine County fails to specifically address the reopening standards of 10 C.F.R. § 2.326 and does not provide an affidavit that addresses the requirements of 10 C.F.R. § 2.326(a). Thus, WHI-NEPA-1 fails to satisfy the requirements of 10 C.F.R. § 2.326(b) and should be rejected on that basis. However, a review of the contention indicates that none of the issues raised by White Pine County in its contention raise a significant environmental issue or demonstrate that a materially different result regarding

DOE's NEPA documents or the Staff's adoption determination would have been likely. White Pine County claims first that a volcanic eruption that intersects the repository and results in deposition of tephra contaminated with radioactive material is a reasonably foreseeable event. WHI Petition at 2. White Pine County goes on to assert that it is possible that tephra could be transported to White Pine County, but that DOE inappropriately focused its analysis on the reasonably maximally exposed individual (RMEI), defined by regulation. *Id.* at 21-22. White Pine claims that radiologically contaminated tephra from a volcanic eruption at Yucca Mountain "posits significant public health and environmental consequences." *Id*. at 22. White Pine County alleges that dosage from primary ash deposition in White Pine County could be between 0.004 to 0.2 mrem. *Id*. at 23. White Pine County further alleges that redistribution of the ash could increase this dosage as much as 100-fold. *Id*. 23-24.

Nothing in White Pine County's contention, however, indicates it has raised a significant environmental concern that would meet the reopening standards. Although White Pine County asserts that dosages from a volcanic event to its residents could be as high as 20 mrem due to tephra redistribution, White Pine County offers no information to demonstrate this assertion is correct. *See* WHI Petition at 23. As discussed below, the underlying assumption supporting this assertion is incorrect. Further, White Pine County's expert, Dr. Geist, admits it is "impossible" for him to "predict the consequences of tephra redistribution in White Pine County" but then asserts that "annual dosages might increase as much as 100-fold in pockets where the contaminated ash is thickened 100-fold by sedimentary processes." "Assessment Tephra-Fall Hazards to White Pine County," December 1, 2008 at ¶ 7 attached to WHI Petition as Attachment 2 (Geist Report). *Id.* This speculation falls far short of demonstrating that the contention poses a significant environmental issue. *See Oyster Creek*, CLI-08-28, 68 NRC __ (slip op. at 16) ("A 'mere showing' of a possible violation is not enough" to demonstrate a significant safety issue).

Further, White Pine County fails to demonstrate that even if DOE had considered this

information in its FEIS and FSEIS, it would have resulted in a materially different result or that the NRC Staff should not have adopted these documents. White Pine County does not specifically address the requirement of 10 C.F.R. § 2.326(a)(3). However, White Pine County offers the affidavit of Dr. Mike Baughman who simply asserts that the issues raised in White Pine County's contentions raise "significant and substantial new information not considered and assessed in the Environmental Impact Statements provided to the Nuclear Regulatory Commission." WHI Petition, Attachment 4, Affidavit of Mike Baughman at ¶ 4. Dr. Geist makes a similar assertion in his affidavit. WHI Petition, Attachment 1, Affidavit of Dennis Geist at ¶ 6. These unsubstantiated statements fall far short of meeting the requirement that a petitioner demonstrate that a materially different result would have been likely. *See Oyster Creek*, CLI-08-28, 68 NRC __ (slip op. at 22) ("Bare assertions and speculation…do not supply the requisite support."). Accordingly, WHI-NEPA-1 should be rejected for failure to meet the requirements of 10 C.F.R. § 2.326(a). In addition, the contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1), as discussed below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel,* Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, assertions, without further explanation, even from an expert are insufficient to meet the requirement of section 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

Here, White Pine County asserts that it is possible that tephra could be transported to

White Pine County from a volcanic eruption intersecting with the repository. WHI Petition at 21-22. In support of this assertion, White Pine County provides an affidavit from Dr. Dennis Geist. *Id*. at 21; WHI Petition, Attachment 1, Affidavit of Dennis Geist. Dr. Geist's affidavit simply affirms the analyses and assertions in his Geist Report. *See* Geist Affidavit at ¶¶ 1-6. Dr. Geist posits that doses to individuals in White Pine County could be as high as 0.2 mrem from primary ash deposition and as high as 20 mrem in some areas due to redistribution. Geist Report at ¶¶ 6 & 7. *See also* WHI Petition at 22-23. Dr. Geist's assumptions regarding possible ash deposition is based on data from alleged comparable eruptions. Geist Report at ¶ 5. Based on this data, Dr. Geist states that "reasonable estimates for ash deposition in White Pine County on the basis of the tabulated eruptions range from 20 to 1000 gm/m^2. *Id.* However, a review of Dr. Geist's Report shows that this range of estimated thickness does not include ash deposition from the Paricutin eruption which showed a deposition of 0.0003 gm/m^2 at 320 km distance. *See id*. Even considering that this value for ash thickness from the Paricutin eruption is at a greater distance than the other eruptions considered, given the significantly low amount of ash deposition from this eruption, Dr. Geist offers no explanation for why he did not consider the Paricutin eruption. Of the deposits/eruptions listed in Dr. Geist's report, the Paricutin eruption is considered to be most similar to the type that have occurred around Yucca Mountain and has been used as an analog in studies by DOE. *See e.g., Characterize Eruptive Processes at Yucca Mountain, Nevada*, ANL-MGR-GS-0000052 REV 03, Las Vegas, Nevada: Sandia National Laboratories, ACC:DOC.20071010.0003, February 2007 (LSN #DN2002383082), Table 4.2 at 4.2, 6-36, Table 6-9 at 6-38. *See also Characterize Framework for Igneous Activity at Yucca Mountain, Nevada,* ANL-MGR-GS-000001 REV 02, Las Vegas, Nevada: Bechtel SAIC Company, ACC: DOC.20041015.0002, (LSN #DN2001632124) at 6.6. *See* SAR Chapter 2, Subsection 2.3.11.2.1.2 at pages 2.3.11-18 and 2.3.11-19. Because Dr. Geist did not consider this data in his estimate of potential dose to White Pine County, there is no basis for White Pine County's assertion that

"[d]osage from tephra fallout at locations within White Pine County may exceed those estimated for the RMEI in the Repository FEIS." WHI Petition at 22. Accordingly, WHI-NEPA-1 fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v). *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 N.R.C. 142, 181 ("the Board is not to accept uncritically the assertion that a document or other factual information or an expert opinion supplies the basis for a contention. In the case of a document, the Board should review the information provided to ensure that it does indeed supply a basis for the contention.").

Therefore, for the reasons set forth above, WHI-NEPA-1 should be rejected.

WHI-NEPA-2 - FAILURE OF ENVIRONMENTAL IMPACT STATEMENTS TO FULLY DISCLOSE THE CONSEQUENCES OF ATMOSPHERIC TRANSPORT OF RADIONUCLIDES IN VOLCANIC GASES

> Because the Yucca Mountain FEIS and the Repository FSEIS omit any consideration or analysis of the environmental and public health consequences of atmospheric transport of radionuclides in volcanic gases for the Reasonably Maximally Exposed Individual and in White Pine County and other downwind areas, NRC cannot adopt the EISs without the addition of supplementary information.

WHI Petition at 25. White Pine County asserts that the Staff cannot adopt DOE's FEIS and FSEIS because these documents fail to consider the potential impact of "radiation contaminated gases resulting from a volcanic eruption at the Yucca Mountain site" on "the RMEI [reasonably maximally exposed individual] and in White Pine County and other similar down-wind areas." WHI Petition at 27.

Staff Response

As explained further below, this contention does not comply with the requirements of 10 C.F.R. § 2.326. In addition, this contention fails to meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1). WHI-NEPA-2, therefore, is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the

motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, White Pine County fails to specifically address the reopening standards of 10 C.F.R. § 2.326 and does not provide an affidavit that addresses the requirements of 10 C.F.R. § 2.326(a). Thus, WHI-NEPA-2 fails to satisfy the requirements of 10 C.F.R. § 2.326(b) and should be rejected on that basis. However, a review of the contention

indicates that none of the issues raised by White Pine County in its contention raise a significant environmental issue or has demonstrated that a materially different result regarding DOE's NEPA documents or the Staff's adoption determination would have been likely.

White Pine County asserts that the alleged deficiency identified in the contention, the failure to consider the effects of radiation contaminated gases resulting from a volcanic eruption, is a significant new consideration that renders the FEIS and FSEIS inadequate. WHI Petition at 27. However, as discussed below, the contention does not provide any support for the assertion that the alleged deficiency is significant. The only fact White Pine County offers in support of this assertion is that the contribution of volcanic gases on atmospheric transport of radionuclide may be significant. WHI Petition at 28. White Pine County provides an affidavit from Dr. Dennis Geist. *Id*. at 28; WHI Petition, Attachment 1, Affidavit of Dennis Geist. Dr. Geist's affidavit simply affirms the analyses and assertions in his report, "Assessment Tephra-Fall Hazards to White Pine County," December 1, 2008 attached to WHI Petition as Attachment 2 (Geist Report). *See* Geist Affidavit at ¶¶ 1-6. Dr. Geist, in his Report, however states that the transport of radionuclides in volcanic gases may be significant. Geist Report at § 8. Neither Dr. Geist nor White Pine County provide any information to demonstrate what, if any, the potential impact would be for the RMEI or the residences of White Pine County. This speculation falls far short of demonstrating that the contention poses a significant environmental issue. *See Oyster Creek*, CLI-08-28, 65 NRC __ (slip op. at 16) ("A 'mere showing' of a possible violation is not enough" to demonstrate a significant safety issue). Thus, White Pine County fails to show that this alleged deficiency represents a significant environmental issue. 10 C.F.R § 2.326(a)(2).

Further, because White Pine County does not indicate, what, if any, the impacts on the environment of the atmospheric transport of radioactive gases would be, White Pine County fails to demonstrate that a materially different result would be or would have been likely.

10 C.F.R. § 2.326(a)(3). White Pine County does not specifically address the requirement of 10 C.F.R. § 2.326(a)(3). White Pine County asserts that the failure to consider the impacts of radionuclides transported by volcanic gases is inconsistent with NEPA and DOE and NRC NEPA regulations, but fails to explain why. WHI Petition at 28. White Pine County offers the affidavit of Dr. Mike Baughman who simply asserts that the issues raised in White Pine County's contentions raise "significant and substantial new information not considered and assessed in the Environmental Impact Statements provided to the Nuclear Regulatory Commission." WHI Petition, Attachment 4, Affidavit of Mike Baughman at ¶ 4. Dr. Geist makes a similar assertion. Geist Affidavit at ¶ 6. These unsubstantiated statements fall far short of meeting the requirement that a petitioner demonstrate that a materially different result would have been likely. *See Oyster Creek*, CLI-08-28, 68 NRC __ (slip op. at 22) ("Bare assertions and speculation…do not supply the requisite support."). Accordingly, WHI-NEPA-2 should be rejected for failure to meet the requirements of 10 C.F.R. § 2.326(a).

In addition, the contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1), as discussed below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). White Pine County states that neither the FEIS nor the FSEIS consider the transport of radionuclides in volcanic gases. WHI Petition at 28. However, White Pine County fails to show why this should have been considered in DOE's NEPA documents. White Pine County's expert, Dr. Geist in his Report simply states that the contribution of volcanic gases on atmospheric transport of radionuclides may be significant, "because gas is dispersed much more widely in the atmosphere than is tephra." Geist Report at ¶ 8. White Pine County provides no explanation of what this contribution may

be and what impact volcanic gases would have on the transport of radionuclides, other than to state it "may be significant." WHI Petition at 28. Dr. Geist does reference a calculation from a colleague, Dr. Anne Taunton, who assessed the solubility of uranium dioxide in a typical volcanic gas and estimated the concentration of uranium in the vapor, presumably in an effort to demonstrate how much uranium could be potentially transported by volcanic gases from an eruption through the proposed repository at Yucca Mountain. *See* Geist Report at 8. However, no basis is provided for Dr. Taunton's estimate nor has Dr. Taunton herself provided an affidavit regarding her estimate. Moreover, the paper referenced by Dr. Geist and Dr. Taunton, (Yajima T, Kawamura Y, Ueta S, 1995, Uranium solubility and hydrolysis constants under reduced conditions, Mat. Res. Soc. Symp. Proc., Vol 353, 1137-1142) pertains to experiments performed to test the solubility of uranium dioxide in a dilute salt-water solution at room temperatures. The contention fails to establish the relevance of this work to the contended topic of atmospheric transport of radionuclides in volcanic gases. Neither Dr. Geist nor Dr. Taunton explain how radionuclides could become part of or attached to volcanic gas. Further, even if Dr. Taunton's estimate was correct, missing from White Pine County's expert's opinion is an explanation of how uranium in the volcanic gas would impact the environment. Mere assertions, without further explanation, even from an expert are insufficient to meet the requirement of 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Accordingly, WHI-NEPA-2 should be rejected.

WHI-NEPA-3 - FAILURE OF ENVIRONMENTAL IMPACT STATEMENTS TO DISCUSS MEANS TO MITIGATE ADVERSE IMPACTS OF RADIATION CONTAMINATED TEPHRA DEPOSITION IN AREAS OTHER THAN THAT DIRECTLY APPLICABLE TO THE REASONABLY MAXIMALLY EXPOSED INDIVIDUAL

> Because the Yucca Mountain FEIS and the Repository FSEIS omit any discussion of means to mitigate adverse the environmental and public health impacts of radiation contaminated tephra deposition in White Pine County and other downwind areas, NRC cannot adopt the EISs without the addition of supplementary information

WHI Petition at 30. White Pine asserts that the Staff cannot adopt DOE's FEIS and FSEIS because these documents omit any discussion of the means to mitigate adverse environmental impacts of radiation contaminated tephra deposits in White Pine County. WHI Petition at 31.

Staff Response

As discussed below, WHI-NEPA-3 should not be admitted because White Pine County fails to specifically address the reopening standards of 10 C.F.R. § 2.326. In addition, WHI-NEPA-3 also fails to meet the requirements of 10 C.F.R. § 2.309(f).

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *U.S. Dep't of Energy* (High Level Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental

issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, White Pine County fails to specifically address the reopening standards of 10 C.F.R. § 2.326 and does not provide an affidavit that addresses the requirements of 10 C.F.R. § 2.326(a). Thus, WHI-NEPA-3 fails to satisfy the requirements of 10 C.F.R. § 2.326(b) and should be rejected on that basis. However, a review of the contention indicates that none of the issues raised by White Pine County in its contention raise a

significant environmental issue or demonstrate that a materially different result regarding DOE's NEPA documents or the Staff's adoption determination would have been likely. Similar to WHI-NEPA-1, White Pine County claims first that a volcanic eruption that intersects the repository, and results in deposition of tephra contaminated with radioactive material, is a reasonably foreseeable event. WHI Petition at 33. White Pine County goes on to assert that it is possible that tephra could be transported to White Pine County, but that DOE inappropriately focused its analysis on the reasonably maximally exposed individual (RMEI), defined by regulation. *Id.* at 33-34. White Pine claims that radiologically contaminated tephra from a volcanic eruption at Yucca Mountain "posits significant public health and environmental consequences." *Id*. at 35. White Pine County alleges that dosage from primary ash deposition in White Pine County could be between 0.004 to 0.2 mrem. *Id*. at 35. They further allege that redistribution of the ash could increase this dosage as much as 100-fold. *Id*. 36. Referencing NUREG-1748, *Environmental Review Guidance for Licensing Actions Associated with NMSS Programs,* (Aug. 2003), White Pine County alleges that because DOE has not characterized the potential impacts of tephra originating from a volcanic eruption on White Pine County, DOE also fails to adequately discuss the means to mitigate these impacts. WHI Petition at 32-36.

Nothing in White Pine County's contention, however, indicates it has raised a significant environmental concern that would meet the reopening standards. Although White Pine County asserts that dosages from a volcanic event to its residents could be as high as 20 mrem due to tephra redistribution, White Pine County offers no information to demonstrate this assertion is correct. *See* WHI Petition at 34. As discussed below, the underlying assumption supporting this assertion is incorrect. Further, White Pine County's expert, Dr. Geist, admits it is "impossible" for him to "predict the consequences of tephra retribution in White Pine County" but then asserts that "annual dosages might increase as much as 100-fold in pockets where the contaminated ash is thickened 100-fold by sedimentary processes."

"Assessment Tephra-Fall Hazards to White Pine County," December 1, 2008 at ¶ 7 attached to WHI Petition as Attachment 2 (Geist Report). *Id.* This speculation falls far short of demonstrating that the contention poses a significant environmental issue. *See Oyster Creek*, CLI-08-28, 68 NRC __ (slip op. at 16) ("A 'mere showing' of a possible violation is not enough" to demonstrate a significant safety issue).

Further, as with WHI-NEPA-1, White Pine County fails to demonstrate that even if DOE had considered this information in its FEIS and FSEIS, it would have resulted in a materially different result or that the NRC Staff should not have adopted these documents. White Pine County does not specifically address the requirement of 10 C.F.R. § 2.326(a)(3). However, White Pine County offers the affidavit of Dr. Mike Baughman who simply asserts that the issues raised in White Pine County's contentions raise "significant and substantial new information not considered and assessed in the Environmental Impact Statements provided to the Nuclear Regulatory Commission." WHI Petition, Attachment 4, Affidavit of Mike Baughman at ¶ 4. Dr. Geist makes a similar assertion in his affidavit. WHI Petition, Attachment 1, Affidavit of Dennis Geist ¶ 6. These unsubstantiated statements fall far short of meeting the requirement that a petitioner demonstrate that a materially different result would have been likely. *See Oyster Creek*, CLI-08-28, 68 NRC __ (slip op. at 22) ("Bare assertions and speculation…do not supply the requisite support."). Accordingly, WHI-NEPA-3 should be rejected for failure to meet the requirements of 10 C.F.R. § 2.326(a). In addition, the contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1), as discussed below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). A "mere 'notice pleading' is insufficient" and the petitioner shall set forth the significance of each of its supporting references. *Fansteel,* Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). Further, assertions, without further explanation, even from an expert are insufficient to meet the requirement of 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

Here, White Pine County asserts that it is possible that tephra could be transported to White Pine County from a volcanic eruption intersecting with the repository. *Id.* at 34-35. In support of this assertion, White Pine County provides an affidavit from Dr. Dennis Geist. *Id*. at 35; WHI Petition, Attachment 1, Affidavit of Dennis Geist. Dr. Geist's affidavit simply affirms the analyses and assertions in his Geist Report. *See* Geist Affidavit at ¶¶ 1-6. Dr. Geist posits that doses to individuals in White Pine County could be as high as 0.2 mrem from primary ash deposition and as high as 20 mrem in some areas due to redistribution. Geist Report at ¶¶ 6 & 7. *See also* WHI Petition at 36. Dr. Geist's assumptions regarding possible ash deposition is based on data from alleged comparable eruptions. Geist Report at¶ 5. Based on this data, Dr. Geist states that "reasonable estimates for ash deposition in White Pine County on the basis of the tabulated eruptions range from 20 to 1000 gm/m^2 *Id.* However, a review of Dr. Geist's Report shows that this range of estimated thickness does not include ash deposition from the Paricutin eruption, which showed a deposition of 0.0003 gm/m^2 at 320 km distance. *See id*. Even considering that this value for ash thickness from the Paricutin eruption is at a greater distance than the other eruptions considered, given the significantly low amount of ash deposition from this eruption, Dr. Geist offers no explanation

for why he did not consider the Paricutin eruption. Of the deposits/eruptions listed in Dr. Geist's report, the Paricutin eruption is considered to be most similar to the type that have occurred around Yucca Mountain and has been used as an analog in studies by DOE. *See e.g., Characterize Eruptive Processes at Yucca Mountain, Nevada*, ANL-MGR-GS-0000052 REV 03, Las Vegas, Nevada: Sandia National Laboratories, ACC:DOC.20071010.0003, February 2007 (LSN #DN2002383082), Table 4.2 at 4.2, 6-36, Table 6-9 at 6-38. *See also Characterize Framework for Igneous Activity at Yucca Mountain, Nevada,* ANL-MGR-GS-000001 REV 02, Las Vegas, Nevada: Bechtel SAIC Company, ACC: DOC.20041015.0002, (LSN #DN2001632124) at 6.6. *See* SAR Chapter 2, Subsection 2.3.11.2.1.2 at pages 2.3.11-18 and 2.3.11-19. Because Dr. Geist did not consider this data in his estimate of potential dose to White Pine County, there is no basis for White Pine County's assertion that "[d]osage from tephra fallout at locations within White Pine County may exceed those estimated for the RMEI in the Repository FEIS." WHI Petition at 35. Accordingly, WHI-NEPA-3 fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v). *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 N.R.C. 142, 181 ("the Board is not to accept uncritically the assertion that a document or other factual information or an expert opinion supplies the basis for a contention. In the case of a document, the Board should review the information provided to ensure that it does indeed supply a basis for the contention.").

Therefore, for the reasons set forth above, WHI-NEPA-3 should be rejected.

WHI-NEPA-4 - FAILURE OF ENVIRONMENTAL IMPACT STATEMENTS TO DISCUSS MEANS TO MITIGATE ADVERSE IMPACTS OF ATMOSPHERIC TRANSPORT OF RADIONUCLIDES IN VOLCANIC GASES

> Because the Yucca Mountain FEIS and the Repository FSEIS omit any discussion of means to mitigate adverse the environmental and public health consequences of atmospheric transport of radionuclides in volcanic gases originating from a volcanic eruption through the Yucca Mountain repository for the RMEI and in White Pine County and other downwind areas, NRC cannot adopt the EISs without the addition of supplementary information

WHI Petition at 38. White Pine County asserts that the Staff cannot adopt DOE's FEIS and FSEIS because these documents omit any discussion of the means to mitigate the potential impact of "atmospheric transport of radionuclides in volcanic gases originating from a volcanic eruption at the Yucca Mountain repository" on "the RMEI [reasonably maximally exposed individual] and in White Pine County and other downwind areas." WHI Petition at 39.

Staff Response

As explained further below, this contention does not comply with the requirements of 10 C.F.R. § 2.326. In addition, this contention fails to meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1). WHI-NEPA-4, therefore, is inadmissible.

10 C.F.R. § 51.109(a)(2), establishes standards for the admission of contentions related to NEPA in addition to the generic contention admissibility requirements at 10 C.F.R. § 2.309(f)(1). These contentions must be accompanied by "one or more affidavits which set forth factual and/or technical bases for the claim that . . . it is not practicable [for the NRC] to adopt the DOE environmental impact statement, as it may have been supplemented." Section 51.109(a)(2) also directs the presiding officer to "resolve disputes concerning adoption of the DOE [EIS] by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326." *U.S. Dep't of Energy* (High Level

Waste Repository), CLI-08-25, 68 NRC __ (Oct. 17, 2008) (slip op. at 8). The motion to reopen standard includes the following criteria: (1) the issue must be timely raised; (2) the motion, or in this case, the contention, "must address a significant safety or environmental issue"; and (3) the motion, or contention, "must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a). In order to comply with 10 C.F.R. § 2.326(a)(2), the petitioner must submit "affidavits of qualified experts presenting the factual and/or technical bases for the claim that there is a significant . . . issue, together with evidence that satisfies [the Commission's] admissibility standards." *Amergen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC __ (Nov. 6, 2008) (slip op. at 16). A "'mere showing' of a possible" error is not enough to satisfy the motion to reopen standard. *Id.* In the context of an EIS, the third prong of the motion to reopen standard is analogous to the standard for requiring a supplemental EIS. *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 27 (2006). A supplemental EIS is required only where new information "'raises new concerns of sufficient gravity such that another, formal in-depth look at the environmental consequences of the proposed action is necessary.'" *Id.* at 28 (quoting *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984)). Any "new information must paint a '*seriously* different picture of the environmental landscape.'" *Id.* (quoting *National Comm. for the New River, Inc. v. Fed. Energy Regulatory Comm'n*, 373 F.3d 1323, 1330 (D.C. Cir. 2004)) (emphasis in original). The burden of meeting these criteria rests with the proponent. *Oyster Creek*, CLI-08-28, 68 NRC at __ (slip op. at 14) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 221 (1990)). Section 2.326(b) also requires supporting affidavits.

Here, White Pine County fails to specifically address the reopening standards of 10 C.F.R. § 2.326 and does not provide an affidavit that addresses the requirements of

10 C.F.R. § 2.326(a). Thus, WHI-NEPA-4 fails to satisfy the requirements of 10 C.F.R. § 2.326(b) and should be rejected on that basis. A review of the contention indicates that none of the issues raised by White Pine County in its contention raise a significant environmental issue or has demonstrated that a materially different result regarding DOE's NEPA documents or the Staff's adoption determination would have been likely. White Pine County asserts that the alleged deficiency identified in the contention, the failure to discuss means to mitigate the effects of "volcanic eruption-related contaminant release in White Pine County and other similar down-wind areas" is a significant new consideration that renders the FEIS and FSEIS inadequate. WHI Petition at 41. White Pine County also references NUREG-1748, *Environmental Review Guidance for Licensing Actions Associated with NMSS Programs* (Aug. 2003) for its assertion that the EISs must address mitigation measures. WHI Petition at 40. Although White Pine County refers to "volcanic eruption-related contaminate release," the Staff assumes White Pine County is referring to the atmospheric transport of radionuclides in volcanic gases. *See* WHI Petition at 38 (describing the contention as focusing on volcanic gases). The only fact White Pine County offers in support of this assertion is that the contribution of volcanic gases on atmospheric transport of radionuclide may be significant. WHI Petition at 42. White Pine County provides an affidavit from Dr. Dennis Geist. *Id*. at 42; WHI Petition, Attachment 1, Affidavit of Dennis Geist. Dr. Geist's affidavit simply affirms the analyses and assertions in his report, "Assessment Tephra-Fall Hazards to White Pine County," December 1, 2008 attached to WHI Petition as Attachment 2 (Geist Report). *See* Geist Affidavit at ¶¶ 1-6. Dr. Geist, in his Report, however states that the transport of radionuclides in volcanic gases may be significant. Geist Report at ¶ 8. Neither Dr. Geist nor White Pine County provide any information to demonstrate what, if any, the potential impact would be for the RMEI or the residences of White Pine County. This speculation falls far short of demonstrating that the contention poses a significant environmental issue. *See Oyster Creek*, CLI-08-28, 65 NRC __ slip op. at 16 ("A 'mere

showing' of a possible violation is not enough" to demonstrate a significant safety issue). Consequently, because White Pine County fails to demonstrate that the failure to consider atmospheric transport of radionuclides is significant, the alleged failure to consider mitigation measures is also not a significant environmental issue. Thus, WHI-NEPA-4 fails to raise a significant environmental issue. 10 C.F.R § 2.326(a)(2).

Further, because White Pine County does not indicate, what, if any, the impacts on the environment of the atmospheric transport of radioactive gases would be, White Pine County fails to demonstrate that a materially different result would be or would have been likely. 10 C.F.R. § 2.326(a)(3). White Pine County does not specifically address the requirement of 10 C.F.R. § 2.326(a)(3). White Pine County does assert that the failure to consider the impacts of radionuclides transported by volcanic gases is inconsistent with NEPA and DOE and NRC NEPA regulations, but fails to explain why. WHI Petition at 43. White Pine County offers the affidavit of Dr. Mike Baughman who simply asserts that the issues raised in White Pine County's contentions raise "significant and substantial new information not considered and assessed in the Environmental Impact Statements provided to the Nuclear Regulatory Commission." WHI Petition, Attachment 4, Affidavit of Mike Baughman at ¶ 4. Dr. Geist makes a similar assertion. Geist Affidavit at ¶ 6. These unsubstantiated statements fall far short of meeting the requirement that a petitioner demonstrate that a materially different result would have been likely. *See Oyster Creek*, CLI-08-28, 68 NRC __ (slip op. at 22) ("Bare assertions and speculation…do not supply the requisite support."). Accordingly, WHI-NEPA-4 should be rejected for failure to meet the requirements of 10 C.F.R. § 2.326(a). Further, because White Pine County fails to provide any information regarding what if any impact the atmospheric transport of radionuclides in volcanic gases would have for the RMEI or the residents of White Pine County or other downwind areas, it also fails to demonstrate that the failure to consider mitigation measures would have had any effect on the outcome of DOE's NEPA analyses or the Staff's adoption decision. 10 C.F.R. § 2.326(a). Thus, WHI-

NEPA-4 should be rejected.

In addition, the contention does not comply with the requirements of 10 C.F.R. § 2.309(f)(1), as discussed below.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). White Pine County states that neither the FEIS nor the Repository FSEIS consider the transport of radionuclides in volcanic gases. WHI Petition at 42. In addition, White Pine County alleges that these documents fail to discuss means to mitigate the effects of "volcanic eruption-related contaminant release in White Pine County and other similar down-wind areas." WHI Petition at 43. However, White Pine County fails to show why this should have been considered in DOE's NEPA documents. White Pine County's expert, Dr. Geist in his report simply states the contribution of volcanic gases on atmospheric transport of radionuclides may be significant, "because gas is dispersed much more widely in the atmosphere than is tephra." Geist Report at ¶ 8. White Pine County provides no explanation of what this contribution may be and what impact volcanic gases would have on the transport of radionuclides, other than to state it "may be significant." WHI Petition at 42. Dr. Geist does reference a calculation from a colleague, Dr. Anne Taunton, who assessed the solubility of uranium dioxide in a typical volcanic gas and estimated the concentration of uranium in the vapor, presumably in an effort to demonstrate how much uranium could be potentially transported by volcanic gases from an eruption at Yucca Mountain. *See* Geist Report at 8. However, no basis is provided for Dr. Taunton's estimate nor has Dr. Taunton herself provided an affidavit regarding her estimate. Moreover, the paper referenced by Dr. Geist and Dr. Taunton, (Yajima T, Kawamura Y, Ueta S, 1995, Uranium solubility and hydrolysis constants under reduced conditions, Mat. Res. Soc. Symp.

Proc., Vol 353, 1137-1142) pertains to experiments performed to test the solubility of uranium dioxide in a dilute salt-water solution at room temperatures. The contention fails to establish the relevance of this work to the contended topic of atmospheric transport of radionuclides in volcanic gases. Neither Dr. Geist nor Dr. Taunton explain how radionuclides could become part of or attached to volcanic gas. Further, even if Dr. Taunton's estimate were correct, missing from White Pine County's expert opinion is an explanation of how uranium in the volcanic gas would impact the environment. Mere assertions, without further explanation, even from an expert are insufficient to meet the requirement of section 2.309(f)(1)(v). *See USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006). Accordingly, WHI-NEPA-4 should be rejected.

c. Miscellaneous Contentions

NCA-MISC-001[73] - LAND OWNERSHIP AND CONTROL

> Pursuant to 10 CFR § 63.121 (a)(1)(part of Subpart E) the geologic repository operations area (GROA) is required to be located in and on lands that are either acquired lands under the jurisdiction and control of DOE, or lands permanently withdrawn and reserved for its use. Also, 10 CFR § (a)(2) [sic] requires such lands to be held free and clear of all such encumbrances including easements, if significant, such as: (iii) All other rights…, or otherwise. This contention alleges non-compliance with this regulatory provision and therefore raises a material issue within the scope of the licensing proceeding.

NCA Petition at 7-8. To support this contention, NCAC alleges that DOE is unable to demonstrate ownership of Yucca Mountain "because the Treaty of Ruby Valley…is 'in full force and effect' and thereby controlling." NCA Petition at 8. Further, NCAC states that "[t]he treaty does not cede land to the US." NCA Petition at 8. In addition, NCAC argues, since the only basis for a legitimate claim by United States to the lands within Nevada is the Treaty of Ruby Valley, and the Treaty only affords rights regarding the specific interests sought by the United States in that Treaty, land within Nevada would be under the jurisdiction of the Western Shoshone Nation. NCA Petition at 8-9 (citing An Act of Congress Organizing the Territory of Nevada, Nevada Territorial Act, 12 Stat. 209, 209-214 (1861)).

Staff Response

The Staff opposes admissibility of this contention because it does not meet the standard set forth in 10 C.F.R. § 2.309(f)(1)(v) because the Treaty of Ruby Valley does not support NCAC's claims regarding land ownership.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

While NCAC claims the Treaty of Ruby Valley is "in full force and effect" and does not

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[73] NCAC did not choose a three letter acronym or label its contentions. For convenience, the Staff chose "NCA" as NCAC's acronym and assigned labels to its contentions.

cede any land to the United States, the Treaty is subject to scrutiny to determine if it actually supports NCAC's contention. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 & n.30 (1996); rev'd in part on other grounds, CLI-96-7, 43 NRC 235 (1996) (A document put forth by an intervenor as supporting the basis for a contention is subject to scrutiny, both for what it does and does not show. When a report is the central support for a contention's basis, the contents of that report are before the Board and, as such, are subject to Board scrutiny.).

While NCAC states that the Treaty of Ruby Valley "requires payment by the United States to the Newe for the specific interests sought, acknowledging that the Western Shoshone Nation possessed the specific interests that the US sought to purchase," NCAC does not address the U.S. Supreme Court decision in *United States v. Dann*. 470 U.S. 39 (1985). *Dann* involved a trespass action brought by the United States against two members of an autonomous band of the Western Shoshone Tribe. *Id.* at 43. The United States claimed they were grazing livestock on Federal land without a permit in violation of Department of the Interior regulations. *Id.* The two Tribe members claimed their aboriginal title to the land precluded the United States from requiring grazing permits. *Id.* In 1951, certain members of the Shoshone Tribe sought compensation for the loss of aboriginal title to lands in the western United States, and the Indian Claims Commission determined that the Western Shoshone's aboriginal title to the land had been extinguished in the late nineteenth century and awarded the Tribe compensation for the taking. *Id.* at 41-42. The Court of Claims affirmed this award, and after the Clerk of the Court of Claims certified this award in 1979, the money was deposited in an interest-bearing Treasury account. *Id.* at 42. In *Dann*, the Supreme Court held that the appropriation of funds into a Treasury account constitutes payment under the Indian Claims Commission Act notwithstanding the fact that the funds have not been distributed due to the refusal of the Western Shoshone to cooperate. *Id.* at 42-43, 44-45. Because payment has been effected, the Western Shoshone claim of

aboriginal title, pursuant to the Treaty of Ruby Valley, to the lands in the western United States has been extinguished. *Id.* at 44, 50.

In subsequent litigation, the Western Shoshone attempted to establish ownership of the lands based on treaty title rather than aboriginal title. The South Fork Band of the Western Shoshone argued that aboriginal title (a claim of possession of the land from time immemorial) was distinct from treaty title (fee title based on a treaty) and brought a claim to quiet title based on treaty title. *Western Shoshone Nat'l Council v. United States*, 415 F.Supp.2d 1201 (D.Nev. 2006).[74] The court found that the litigation brought by members of the Shoshone Tribe in 1951 before the Indian Claims Commission for compensation for the taking of their land by the United States put the Shoshone on notice that the United States claimed an interest adverse to the Shoshone in the land covered by the Treaty of Ruby Valley. *Id.* at 1207. Further, the *Dann* litigation reinforced this conflict over ownership of the land. *Id.* Therefore, no reasonable landowner would not have known of the adverse claims of the United States to this land. *Id.* Thus, the Shoshone, having been on notice since 1951, were outside of the twelve year statute of limitations of the Quiet Title Act, and the lawsuit was barred. *Id.*

The Western Shoshone National Council's complaint, which sought a declaration that the Treaty of Ruby Valley was in full force and effect, was also before the district court. *Id.* at 1205. Since the court determined the only way it could quiet title in the South Fork Band was if it determined that (1) the plaintiffs were relieved of the Supreme Court's ruling in *Dann*, (2) the Treaty was deemed to be in full force and effect, and (3) the Treaty gives the

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[74] The complaint was originally filed in the United States District Court of the District of Columbia, but that court severed the claims and transferred some to the Court of Federal Claims while sending the quiet title claims, including the Western Shoshone National Council's complaint, to United States District Court of the District of Nevada.

Shoshone substantive land rights, the court found the claims were redundant to the South Fork Band's claims and struck the complaint. *Id.* at 1205-06. The South Fork Band appealed to the Court of Appeals for the Ninth Circuit, where the decision of the district court was affirmed. *Western Shoshone Nat'l Council v. United States*, 274 F.App'x 573 (9th Cir. 2008), *cert. denied*, 129 S. Ct. 258 (2008).

The Court of Appeals for the Federal Circuit reviewed the Western Shoshone National Council's complaint seeking to invalidate the 1977 Indian Claims Commission judgment awarding the Western Shoshone compensation for the taking of their aboriginal lands and to receive other relief under the Treaty of Ruby Valley. *Western Shoshone Nat'l Council*, 279 F.App'x 980, 981 (Fed. Cir. 2008). The Federal Circuit cited the Supreme Court's declaration in *Dann* that the Treaty did not recognize the Western Shoshone as holding fee title and determined that the Treaty did not convey treaty title to any land. *Id.* at 987.

In another case, the Court of Appeals for the Ninth Circuit has also determined that the Shoshone had their title totally extinguished and, therefore, no longer held hunting and fishing rights based on the Treaty of Ruby Valley. *Western Shoshone Nat'l Council v. Molini*, 951 F.2d 200, 203 (9th Cir. 1991).

Because NCAC rests its claim that DOE will be unable to demonstrate ownership of land in accordance with NRC regulations on its interpretation of the Treaty of Ruby Valley, and U.S. courts have invalidated that interpretation, NCAC has not provided adequate supporting references for the basis of its contention and therefore has not satisfied 10 C.F.R. § 2.309(f)(1)(v). Consequently, the Staff opposes admissibility of this contention.

Therefore, for the reasons discussed above, NCA-MISC-001 should be rejected.

NCA-MISC-002[75] - WATER RIGHTS

> Pursuant to 10 CFR § 63.121 (d)(1) the DOE is to obtain such water rights as may be needed to accomplish the proposed repository; and 10 CFR § 63.121 (d)(2) water rights are included in the additional controls to be established. Water right are a reserved property interest not ceded to the US by the Treaty of Ruby Valley, 12 Statute 689-692 and are a shared right in privity with other NCAC members. The NCAC challenges the availability of water as insufficient to meet the needs of DOE since no lawful entitlement accrues to the US or the State of Nevada for use by the DOE.

NCA Petition at 10. NCAC alleges that "[w]ater rights are an exclusive reserved property interest not ceded by the Treaty of Ruby Valley…to the US by the Western Shoshone Nation." NCA Petition at 10. To support this contention, NCAC alleges that water rights "are not a subject the US sought to purchase through the Treaty of Ruby Valley…." NCA Petition at 11. Further, NCAC argues that the United States does not have legitimate water rights to meet the requirements of 10 C.F.R. § 63.121. NCA Petition at 11. The contention also challenges the license application as materially incomplete because it fails to consider the Western Shoshone Nation's jurisdiction over the water rights or the needs of the Newe individually or collectively. NCA Petition at 11.

Staff Response

The Staff opposes admissibility of this contention because it does not meet the standards set forth in 10 C.F.R. § 2.309(f)(1)(v) and (vi) because NCAC does not provide adequate support for its position, nor does the contention demonstrate that there is a genuine dispute on a material issue of law or fact.

If NCAC is alleging that its water rights will be violated if DOE receives a construction

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[75] NCAC did not choose a three letter acronym or label its contentions. For convenience, the Staff chose "NCA" as NCAC's acronym and assigned labels to its contentions.

authorization, the Staff notes that the NRC is not the proper forum for adjudicating disputes over water rights. *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), CLI-07-25, 66 NRC 101, 107 (2007) (Where petitioner "claims that NRC ought to concern itself with water use matters within the jurisdiction of other state and Federal agencies," the "complaints simply do not articulate any issue material to this proceeding…."); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), LBP-82-117A, 16 N.R.C. 1964, 1990 (1982) ("The District Court has jurisdiction to enforce Indian water rights and this Board does not.").

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

While NCAC claims the Treaty of Ruby Valley did not give the United States water rights and only references the Treaty in support of its position, the Treaty is subject to scrutiny to determine if it actually supports NCAC's contention. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 & n.30 (1996); rev'd in part on other grounds, CLI-96-7, 43 NRC 235 (1996) (A document put forth by an intervenor as supporting the basis for a contention is subject to scrutiny, both for what it does and does not show. When a report is the central support for a contention's basis, the contents of that report are before the Board and, as such, are subject to Board scrutiny.).

The courts of the United States have repeatedly found that the Western Shoshone Nation's property interests in the land covered by the Treaty of Ruby Valley have been extinguished. NCAC does not address any of these court decisions in its contention. In *United States v. Dann*, 470 U.S. 39, 43 (1985), the United States brought a trespass action against two members of an autonomous band of the Western Shoshone Tribe for grazing livestock on Federal land without a permit in violation of Department of the Interior regulations. The two Tribe members claimed their aboriginal title to the land precluded the United States from requiring grazing permits. *Id.* In 1951, certain members of the Shoshone Tribe sought compensation for the loss of aboriginal title to lands in the western United

States, and the Indian Claims Commission determined that the Western Shoshone's aboriginal title to the land had been extinguished in the late nineteenth century and awarded the Tribe compensation for the taking. *Id.* at 41-42. The Court of Claims affirmed this award, and after the Clerk of the Court of Claims certified this award in 1979, the money was deposited in an interest-bearing Treasury account. *Id.* at 42. In *Dann,* the Supreme Court held that the appropriation of funds into a Treasury account constitutes payment under the Indian Claims Commission Act notwithstanding the fact that the funds have not been distributed due to the refusal of the Western Shoshone to cooperate. 470 U.S. 39, 42-43, 44-45 (1985). Because payment has been effected, the Western Shoshone claim of aboriginal title, pursuant to the Treaty of Ruby Valley, to the lands in the western United States has been extinguished. *Id.* at 44, 50.

In subsequent litigation, the Western Shoshone attempted to establish ownership of the lands based on treaty title. The South Fork Band argued that aboriginal title (a claim of possession of the land from time immemorial) was distinct from treaty title (fee title based on a treaty) and brought a claim to quiet title based on treaty title. *Western Shoshone Nat'l Council v. United States*, 415 F.Supp.2d 1201 (D.Nev. 2006).[76] The court found that the litigation beginning in 1951 before the Indian Claims Commission attacked the Shoshone's claim to approximately half of the land they claimed in the Treaty of Ruby Valley, so the Shoshone were on notice that the United States may also have a claim to the remainder. *Id.* at 1207. Further, the *Dann* litigation reinforced this conflict over ownership of the land. *Id.* Therefore, no reasonable landowner would not have known of the adverse claims of the

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[76] The complaint was originally filed in the United States District Court of the District of Columbia, but that court severed the claims and transferred some to the Court of Federal Claims while sending the quiet title claims, including the Western Shoshone National Council's complaint, to United States District Court of the District of Nevada.

United States to this land. *Id.* Thus, the Shoshone were outside of the statute of limitations of the Quiet Title Act, and the lawsuit was barred. *Id.*

The Western Shoshone National Council's complaint, which sought a declaration that the Treaty of Ruby Valley was in full force and effect, was also before the district court. *Id.* at 1205. Since the court determined the only way it could quiet title in the South Fork Band was if it determined that (1) the plaintiffs were relieved of the Supreme Court's ruling in *Dann*, (2) the Treaty was deemed to be in full force and effect, and (3) the Treaty gives the Shoshone substantive land rights, the court found the claims were redundant to the South Fork Band's claims and struck the complaint. *Id.* at 1205-06. The South Fork Band appealed to the Court of Appeals for the Ninth Circuit, where the decision of the district court was affirmed. *Western Shoshone Nat'l Council v. United States*, 274 F.App'x 573 (9th Cir. 2008), *cert. denied*, 129 S. Ct. 258 (2008).

The Court of Appeals for the Federal Circuit reviewed the Western Shoshone National Council's complaint seeking to invalidate the 1977 Indian Claims Commission judgment awarding the Western Shoshone compensation for the taking of their aboriginal lands and to receive other relief under the Treaty of Ruby Valley. *Western Shoshone Nat'l Council*, 279 F.App'x 980, 981 (Fed. Cir. 2008). The Federal Circuit cited the Supreme Court's declaration in *Dann* that the Treaty did not recognize the Western Shoshone as holding fee title and determined that the Treaty did not convey treaty title to any land. *Id.* at 987.

In another case, the Court of Appeals for the Ninth Circuit has also determined that the Shoshone had their title totally extinguished and, therefore, no longer hold hunting and fishing rights based on the Treaty of Ruby Valley. *Western Shoshone Nat'l Council v. Molini*, 951 F.2d, 200, 203 (9th Cir. 1991).

Because NCAC relies on an interpretation of the Treaty of Ruby Valley that has been rejected by the courts and does not address how the Western Shoshone still possess water rights in spite of the decisions discussed above, NCAC has not satisfied the requirement to

provide adequate support for its position under 10 C.F.R. § 2.309(f)(1)(v). Consequently, the Staff opposes admissibility of this contention.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also alleges that DOE's license application is "materially incomplete because it fails to consider the Western Shoshone Nation's jurisdiction over the water rights within Newe Sogobia [the Western Shoshone Nation] or the needs of the Newe individually or collectively." NCA Petition at 11. However, as discussed above, NCAC does not provide adequate support for the claim that the Western Shoshone Nation has jurisdiction over the water rights. Further, NCAC does not cite any authority that requires DOE to list all of the competing claims to a water source that DOE plans to use. NCAC asserts that DOE fails to comply with 10 C.F.R. § 63.121(b) and (d). *Id.* However, § 63.121(b) and (d) require DOE to establish appropriate controls, including water rights, outside of the geologic repository operations area, and to obtain such water rights as may be needed to accomplish the purpose of the geologic repository operations area. These regulations do not require DOE to discuss any competing claims to water rights. In the absence of such a requirement, NCAC fails to establish a genuine dispute regarding the application. *See* 10 C.F.R. § 2.309(f)(1)(vi) ("[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the *supporting reasons* for the petitioner's belief…" is required.) (emphasis added). Therefore, the petitioner has not established a genuine dispute regarding the application, and the contention is inadmissible.

Therefore, for the reasons discussed above, NCA-MISC-002 should be rejected.

NEV-MISC-01 - EROSION AND GEOLOGIC DISPOSAL

> Legal issue: The construction authorization cannot be granted because, as contention NEV-SAFETY-41 establishes, Yucca Mountain will erode to the level of the repository drifts beginning around 500,000 years after waste emplacement, thereby exposing the waste packages to the atmosphere, with the result that for the period after about 500,000 years and continuing throughout the period of geologic stability the facility will no longer constitute a "repository" but would, at best, constitute a retrievable storage facility, in violation of sections 2(18),114(d), 141(g) and 302(d) of the NWPA, section 801(a) of the EnPA, and Public Law No. 107-200 (42 U.S.C. § 10135 note).

NEV Petition at 1144. NEV-MISC-01 challenges DOE's characterization of Yucca Mountain as a repository, based on Nevada's assertion that after 500,000 years, Yucca Mountain will erode to the level of the drifts and, as a result, will no longer fit the definition of a repository. *Id.* From this, NEV-MISC-01 goes on to challenge DOE's assertion of NRC jurisdiction and DOE's characterization of Yucca Mountain as a repository in the General Information portion of the LA, GI Section 1.3 at 1-20 to 1-21. *Id.* at 1145. NEV-MISC-01 states that the basis for DOE's position is found in NEV-SAFETY-41 which also claims that after about 500,000 years, Yucca Mountain will erode to the point that it will be a retrievable storage facility rather than a "repository."

Staff Response

The Staff opposes admission of NEV- MISC-01 because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-MISC-001 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the

requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R.§ 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991). The APAPO Board stated that the "references" must "be as specific as reasonably possible." *U.S. Dep't of Energy* (High Level Waste Repository), LBP-08-10, 67 NRC 450, 455 (2008).

NEV-MISC-01 argues that because of the claimed erosion that could occur in approximately 500,000 years, approval of DOE's license application would violate Sections 2(18), 114(d), and 302(d) of the NWPA, section 801(a) of the Energy Policy Act of 1992, and Public Law No. 107-200 (42 U.S.C. § 10135 note) since these statues provide only for construction and licensing of a "repository" at Yucca Mountain. NEV Petition at 1145.

NEV-MISC-001 is based solely on the assertion that Yucca mountain will erode to a level at which it will no longer constitute a "repository." However, the contention provides absolutely no alleged facts or expert opinions to support its position. The only information provided in support of NEV-MISC-01 is a cross references to the content of NEV-SAFETY-41 ("Supporting facts and technical opinions are in NEV-SAFETY-41." NEV Petition at 1146.). The Staff's response to that contention addresses in detail the Staff's position with respect to deficiencies in Nevada's position. Therefore, NEV-MISC-01 must be rejected because Nevada fails to allege facts or include expert opinions to support the contention.

For the reasons discussed above, NEV-MISC-01 should not be admitted.

NEV-MISC-02 - ALTERNATE WASTE STORAGE PLANS

> Legal issue: The LA cannot be granted because its discussion of alternate storage plans for spent fuel following retrieval violates the NWPA.

NEV Petition at 1147. According to Nevada, SAR subsection 1.11 at 1.11-1 through 1.11-16, describes on-site storage if retrieval became necessary, but not storage outside of Nevada. NEV Petition at 1147. NEV-MISC-02 contends that retrieved fuel storage in Nevada therefore becomes indefinitely long-term, which violates Section 141(g) of the Nuclear Waste Policy Act (NWPA). NEV Petition at 1147-48.

Staff Response

The Staff opposes admission of NEV-MISC-02 because it fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) to provide alleged facts or expert opinions to support its contention.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

NEV-MISC-02 fails to provide alleged facts or expert opinions to support its contention, as required by 10 C.F.R. § 2.309(f)(1)(v). An admissible contention must be supported by a "concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue . . . together with references to the specific sources and documents on which [it] intends to rely to support its position." 10 C.F.R. § 2.309(f)(1)(v). The petitioner must meet its burden of presenting factual information and expert opinion necessary to support its contention adequately. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155. The APAPO Board stated that the "references" must "be as specific as reasonably possible." *High-Level Waste Repository*, LBP-08-10, 67 NRC 450, 455 (2008).

NEV-MISC-02 is based entirely on the unsubstantiated assumption that, because the license application does not discuss post-retrieval storage outside of Nevada, such storage

within Nevada must be indefinitely long term. However, Nevada has offered absolutely no factual information or expert opinion to support its position that such a facility would be either indefinite or long term.

Furthermore, NEV-MISC-02 fails to explain how, what it claims is “indefinitely long-term” storage, violates Section 141(g) of NWPA. SAR section 1.11 describes an alternative storage location that would only come into use in the event that a retrieval decision was made. SAR section 1.11 SAR Section 1.11.1 specifically notes that “. . . if a determination was made that a retrieval action needed to provide long-term storage, then facilities for handling and storing waste would be designed to accommodate those needs.” SAR1.11.1 at 1.11-2. There is nothing in SAR subsection 1.11 that indicates that the contemplated post-retrieval storage could be viewed as a “monitored retrievable storage facility” prohibited by NWPA Section 141(g) or otherwise constitute long term storage. Therefore, NEV-MISC-02 must be rejected because its allegation that SAR subsection 1.11 violates NWPA Section 141(g) is not supported by alleged facts or expert opinions as required by 10 C.F.R. § 2.309(f)(1)(v).

For the reasons discussed above, NEV-MISC-02 should be rejected.

NEV-MISC-03 - LA REFERENCES

> Error of Omission: The LA SAR is insufficient on its face because it cannot be determined whether its safety conclusions are correct without also considering about 196 references listed therein, but as provided in LA General Information Subsection 1.4.1 at 1-21, DOE refuses to incorporate these references into the LA.

NEV Petition at 1149. NEV-MISC-03 asserts that 196 references, which are identified in General Information Subsection 1.4.1 of the application, must be incorporated into the application. Nevada contends that DOE's failure to incorporate these references into the application violates Commission regulations requiring findings to be made "on review and consideration of the application." 10 C.F.R. § 63.31; NEV Petition at 1149. Nevada asserts that the SAR cannot be evaluated without incorporation of these references. The issue then, is whether regulations require these references to be incorporated into and made a part of the license application or whether it is sufficient that DOE identify, cite, and make those references publicly available as appropriate.

Staff Response

The Staff opposes admission of NEV- MISC-03 because, in two respects, it fails to meet the requirements of Section 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

First, Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." NEV-MISC-03 fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a 'genuine dispute' exists with the applicant on a material issue of law or fact. The intervenor must do more than submit

‘bald or conclusory allegation[s]’ of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view.” *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-MISC-03 fails to specifically identify the 196 references by title or other unique identification system. As a result, the contention fails to comply with the requirement for references to “be as specific as reasonably possible.” *High-Level Waste Repository*, LBP-08-10, 67 NRC 450, 455 (2008).

The 196 references noted are commonly understood by the NRC, DOE, and the public to be the 196 references that were submitted with the license application to both NRC and the State of Nevada on June 3, 2008. These 196 references have already been placed on the docket. (DOE submitted these references under Docket WM-0011, before the license application was docketed. Docket number 63-001 was not established until September, 2008 with the Notice of Docketing [73FR53284]. These documents have since been moved to 63-001.)

Nevada does not cite any provision in the Commission’s regulations that requires the license application to be a “stand-alone” document in terms of directly incorporating extrinsic source information to support an independent assessment (i.e., by the intervenor) as to whether or not the safety conclusions included in the SAR are correct or not. The 196 references are publically available. These references are available in NRC’s public reading room and DOE has made them available on the LSN and at their five public readings rooms in Nevada and the District of Columbia. In fact, Nevada has used some of them to support a number of its technically focused contentions. See e.g. Nevada petition at 110, 312 and 620. Under these circumstances, a requirement that they or any external reference must be specifically incorporated into the license application itself, can be viewed as an unnecessary

elevation of form over substance.

To the extent that Nevada implies that the NRC is itself unable to reach a safety determination in accordance with 10 C.F.R. Part 63, the Staff's position is that the 196 references are already available on the docket and that NRC would request any other references deemed necessary to be provided to NRC, on the docket, by DOE. *See, e.g.,* RAI 2.4-1, submitted to DOE on 10/22/2008 (ML082950606). This approach is consistent with the risk-informed, performance-based regulatory review established in 10 C.F.R. Part 63. Consistent with these regulations, NRC is reviewing the LA; identifying those additional references (either from the 196 or others) necessary and significant to its safety determination; requesting those documents through the RAI process; and requiring those documents to be placed on the docket when not already on the docket.

Therefore, NEV-MISC-03 must be rejected because Nevada has failed to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact, as required by 10 C.F.R. § 2.309(f)(1)(vi).

In addition, the contention states that Nevada specifically seeks to raise a dispute with GI subsection 1.4.1, however, NEV-MISC-03 also states that

> This contention could be narrowed to challenge only those subsections of the SAR . . . addressed by Nevada's safety contention, but this would lose sight of the broader problem, . . . (and) . . . Nevada's safety contentions addressed to the SAR do not include an exhaustive compendium of all references that must be included in the SAR. Doing so would require an in-depth, expert review of every subsection of the SAR, which is beyond the reasonable capability of any intervenor and is not necessary to identify a wide range of matters of genuine dispute. However, Nevada's contentions are sufficiently numerous and detailed to support the reasonable inference that the completeness deficiencies found in the cited SAR subsections likely permeate the entire SAR.

NEV Petition at 1150-51.To the extent that Nevada seeks to raise an issue with respect to

provisions of the license application other than GI subsection 1.4.1, the contention is inadmissible with respect to those unspecified SAR sections.

Under the pleading criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must include references to specific portions of the application that the petitioner disputes. S*ee also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

For the reasons discussed above, the contention should be rejected.

NEV-MISC-04 - AGING FACILITY ROLE UNDER NWPA

> DOE's plan to have up to 21,000 metric tons of heavy metal sitting on "aging pads" for decades violates the Nuclear Waste Policy Act, as amended, by making Nevada the site of both a repository and a retrievable storage facility.

NEV Petition at 1152. NEV-MISC-04 asserts that the "aging pads," which DOE's license application indicates will be included at the Yucca Mountain repository, violate Sections 111(a)(5) and 141(g) of the Nuclear Waste Policy Act against placing retrievable nuclear waste storage in the same state as a site being considered for a repository. *Id.*

Staff Response

The Staff opposes admission of NEV-MISC-04 because it fails to meet the requirements of Section 2.309(f)(1)(vi) to provide sufficient information to show that a genuine dispute exists on a material issue of law or fact.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-MISC-04 fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Under the pleading criterion set forth in 10 C.F.R. § 2.309(f)(1)(vi), a contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. "[A] contention must show that a "genuine dispute" exists with the applicant on a material issue of law or fact. The intervenor must do more than submit "bald or conclusory allegation[s]" of a dispute with the applicant. He or she must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002).

NEV-MISC-04 asserts that the "aging pads," which DOE plans to use at the Yucca Mountain repository, violate Sections 111(a)(5) and 141(g) of the Nuclear Waste Policy Act

(NWPA), which prohibit placing retrievable nuclear waste storage in the same state as a site being considered for a repository is contrary to the plain meaning of the text of these provisions. NEV Petition at 1152-53. Nevada fails to demonstrate a genuine dispute with the applicant on a material issue of law or fact.

Nevada cites NWPA Section 141(g) to support this contention. As relevant here, Section 141(g) provides that "(n)o monitored retrievable storage facility developed pursuant to this section may be constructed in any State in which there is located any site approved for site characterization under section 10132 of this title." As Nevada correctly notes, additional language in this section makes its terms applicable to Nevada.

However, 10 C.F.R. § 72.3 defines Monitored Retrievable Storage Installation or MRS as a "complex, designed, constructed, and operated by DOE for the receipt, transfer, handling, packaging, possession, safeguarding, and storage of spent nuclear fuel aged for at least one year, solidified high-level radioactive waste resulting from civilian nuclear activities, and solid reactor-related GTCC waste, pending shipment to a HLW repository or other disposal."

NEV-MISC-04 quotes this section but does not explain how this section describes DOE's proposed aging pads. The purpose of an MRS is to store spent nuclear fuel. According to the application, the aging pads envisioned in DOE's application are integral to the planned high-level waste repository and any spent nuclear fuel on aging pads will not be "stored" or shipped to another disposal site. GI Section 1.1.2.1 and SAR Section 1.2.7. DOE's application provides that the spent nuclear fuel will be there for the purposes of thermal management and facility operations prior to being emplaced in the repository. SAR section 1.2.7. Nevada does not provide any support for its contrary assertion that the aging pads described in the SAR constitute a Monitored Retrievable Storage Installation. *See* NEV Petition at 1154. As a result, NEV-MISC-04 is inadmissible and must be rejected because it fails to provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi).

In sum, for the reasons discussed above, the contention should be rejected.

NEV- MISC-05 - ROLE OF AGING FACILITY

> SAR Subsections 1.1.2.1 and 1.2.7, and various similar and related subsections, which describe DOE's plan to construct and operate an Aging Facility at the GROA is neither necessary for nor integral to the safe operation of the repository, and cannot be justified under the NWPA.

NEV Petition at 1155. Nevada contends that the construction and operation of an Aging Facility at the GROA, as described in SAR subsections 1.1.2.1 and 1.2.7, and various similar and related subsections is not justified under the NWPA. *Id.* Nevada further argues that the cooling process is unnecessary and the aging pad has no demonstrated basis. *Id.*

Staff Response

The Staff opposes the admissibility of NEV-MISC-05 because it fails to meet the criterion of 10 C.F.R. § 2.309(f)(1)(vi) in that that it fails to show that there is a genuine dispute regarding the application on a material issue of fact or law.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

An admissible contention must show that a "genuine dispute exists with the applicant/licensee on a material issue of law or fact", identify either specific portions of, or alleged omissions from the application, and provide supporting reasons for the petitioner's position. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner must submit more than "'bald or conclusory allegation[s]' of a dispute with the applicant," but instead "must 'read the pertinent portions of the license application . . . and . . . state the applicant's position and the petitioner's opposing view.'" *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002). (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989)). A contention that does not directly controvert a specific portion of the application, or identify specific additional information that the petitioner alleges was improperly omitted must be dismissed. *See*

Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1992), review declined, CLI-94-2, 39 NRC 91 (1994).

Nevada has failed to show that there is a genuine dispute regarding the application with respect to NEV-MISC-05. While Nevada asserts that construction and operation of an aging facility at the GROA is unnecessary, Nevada fails to provide any support for the proposition that approval of a construction authorization, even if it included an unnecessary aging facility at the GROA, would violate the provisions cited by Nevada, 42 U.S.C. §§ 10131(a)(5) and 10161(g). *See* NEV Petition at 1155. Nevada further provides no support for the proposition that the aging facility is unnecessary. *See* NEV Petition at 1157. The contention is supported by an affidavit from Stephen Frishman, but that affidavit merely adopts the statements in paragraph five of the contention and does not explain the supporting reasons for Mr. Frishman's opinions. NEV Petition Attachment 20, Affidavit of Steven A. Frishman ¶ 2. Without further support and explanation, Nevada has raised only "bald [and] conclusory allegation[s]" insufficient to show that NEV-MISC-05 raises a genuine dispute on a material issue of law or fact. The contention does not meet 10 C.F.R. § 2.309(f)(1)(vi) and, therefore is inadmissible.

For the reasons discussed above, NEV-MISC-05 should be rejected.

TOP-MISC-001[77] - LAND OWNERSHIP AND CONTROL

> Pursuant to 10 CFR § 63.121 (a)(1)(part of Subpart E) the geologic repository operations area (GROA) is required to be located in and on lands that are either acquired lands under the jurisdiction and control of DOE, or lands permanently withdrawn and reserved for its use. Also, 10 CFR § (a)(2) [sic] requires such lands to be held free and clear of all such encumbrances including easements, if significant, such as: (iii) All other rights., or otherwise. This contention alleges non-compliance with this regulatory provision and therefore raises a material issue within the scope of the licensing proceeding.

TOP Petition at 8. To support this contention, the Timbisha Shoshone Yucca Mountain Oversight Program Non-profit Corporation (TOP) alleges that DOE is unable to demonstrate ownership of Yucca Mountain "because the Treaty of Ruby Valley…is 'in full force and effect' and thereby controlling." TOP Petition at 8. Further, TOP states that "[t]he treaty does not cede land to the US." TOP Petition at 8. In addition, TOP argues, since the only basis for a legitimate claim by United States to the lands within Nevada is the Treaty of Ruby Valley, and the Treaty only affords rights regarding the specific interests the United States sought to purchase but defaulted payment on, the land returned to the status quo before the Treaty. TOP Petition at 8-9. TOP alleges that the U.S. Constitution, the Treaty of Ruby Valley, and the statute organizing the Territory of Nevada permanently preserve the interests of the Timbisha, a constituent of the Western Shoshone Nation. TOP Petition at 10.

Staff Response

The Staff opposes admissibility of this contention because it does not meet the standard set forth in 10 C.F.R. § 2.309(f)(1)(v) because the Treaty of Ruby Valley does not support

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[77] The Timbisha Shoshone Yucca Mountain Oversight Program Non-profit Corporation did not choose a three letter acronym or label its contentions. For convenience, the Staff chose "TOP" as its acronym and assigned labels to its contentions.

TOP's claims regarding land ownership.

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

While TOP claims the Treaty of Ruby Valley is "in full force and effect" and does not cede any land to the United States, the Treaty is subject to scrutiny to determine if it actually supports the contention. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 & n.30 (1996); rev'd in part on other grounds, CLI-96-7, 43 NRC 235 (1996) (A document put forth by an intervenor as supporting the basis for a contention is subject to scrutiny, both for what it does and does not show. When a report is the central support for a contention's basis, the contents of that report are before the Board and, as such, are subject to Board scrutiny.).

While TOP states that the Treaty of Ruby Valley "requires payment by the US to the Newe for the specific interests sought" and "[t]he US failed to make the payment schedule required by Article VII, the purchase clause, and therefore the land returned to the status quo ante the treaty," TOP Petition at 8, the contention does not address the U.S. Supreme Court decision in *United States v. Dann*. 470 U.S. 39 (1985). *Dann* involved a trespass action brought by the United States against two members of an autonomous band of the Western Shoshone Tribe. *Id.* at 43. The United States claimed they were grazing livestock on Federal land without a permit in violation of Department of the Interior regulations. *Id.* The two Tribe members claimed their aboriginal title to the land precluded the United States from requiring grazing permits. *Id.* In 1951, certain members of the Shoshone Tribe sought compensation for the loss of aboriginal title to lands in the western United States, and the Indian Claims Commission determined that the Western Shoshone's aboriginal title to the land had been extinguished in the late nineteenth century and awarded the Tribe compensation for the taking. *Id.* at 41-42. The Court of Claims affirmed this award, and after the Clerk of the Court of Claims certified this award in 1979, the money was deposited in an interest-bearing Treasury account. *Id.* at 42. In *Dann*, the Supreme Court held that the

appropriation of funds into a Treasury account constitutes payment under the Indian Claims Commission Act notwithstanding the fact that the funds have not been distributed due to the refusal of the Western Shoshone to cooperate. *Id.* at 42-43, 44-45. Because payment has been effected, the Western Shoshone claim of aboriginal title, pursuant to the Treaty of Ruby Valley, to the lands in the western United States has been extinguished. *Id.* at 44, 50.

In subsequent litigation, the Western Shoshone attempted to establish ownership of the lands based on treaty title rather than aboriginal title. The South Fork Band of the Western Shoshone argued that aboriginal title (a claim of possession of the land from time immemorial) was distinct from treaty title (fee title based on a treaty) and brought a claim to quiet title based on treaty title. *Western Nat'l Shoshone Council v. United States*, 415 F.Supp.2d 1201 (D.Nev. 2006).[78] The court found that the litigation brought by members of the Shoshone Tribe in 1951 before the Indian Claims Commission for compensation for the taking of their land by the United States put the Shoshone on notice that the United States claimed an interest adverse to the Shoshone in the land covered by the Treaty of Ruby Valley. *Id.* at 1207. Further, the *Dann* litigation reinforced this conflict over ownership of the land. *Id.* Therefore, no reasonable landowner would not have known of the adverse claims of the United States to this land. *Id.* Thus, the Shoshone, having been on notice since 1951, were outside of the twelve year statute of limitations of the Quiet Title Act, and the lawsuit was barred. *Id.*

The Western Shoshone National Council's complaint, which sought a declaration that the Treaty of Ruby Valley was in full force and effect, was also before the district court. *Id.* at

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[78] The complaint was originally filed in the United States District Court of the District of Columbia, but that court severed the claims and transferred some to the Court of Federal Claims while sending the quiet title claims, including the Western Shoshone National Council's complaint, to United States District Court of the District of Nevada.

1205. Since the court determined the only way it could quiet title in the South Fork Band was if it determined that (1) the plaintiffs were relieved of the Supreme Court's ruling in *Dann*, (2) the Treaty was deemed to be in full force and effect, and (3) the Treaty gives the Shoshone substantive land rights, the court found the claims were redundant to the South Fork Band's claims and struck the complaint. *Id.* at 1205-06. The South Fork Band appealed to the Court of Appeals for the Ninth Circuit, where the decision of the district court was affirmed. *Western Shoshone Nat'l Council v. United States*, 274 F.App'x 573 (9th Cir. 2008), *cert. denied*, 129 S. Ct. 258 (2008).

The Court of Appeals for the Federal Circuit reviewed the Western Shoshone National Council's complaint seeking to invalidate the 1977 Indian Claims Commission judgment awarding the Western Shoshone compensation for the taking of their aboriginal lands and to receive other relief under the Treaty of Ruby Valley. *Western Shoshone Nat'l Council*, 279 F.App'x 980, 981 (Fed. Cir. 2008). The Federal Circuit cited the Supreme Court's declaration in *Dann* that the Treaty did not recognize the Western Shoshone as holding fee title and determined that the Treaty did not convey treaty title to any land. *Id.* at 987.

In another case, the Court of Appeals for the Ninth Circuit has also determined that the Shoshone had their title totally extinguished and, therefore, no longer held hunting and fishing rights based on the Treaty of Ruby Valley. *Western Shoshone Nat'l Council v. Molini*, 951 F.2d 200, 203 (9th Cir. 1991).

Because TOP rests its claim that DOE will be unable to demonstrate ownership of land in accordance with NRC regulations on its interpretation of the Treaty of Ruby Valley, and U.S. courts have invalidated that interpretation, TOP has not provided adequate supporting references for the basis of its contention and therefore has not satisfied 10 C.F.R. § 2.309(f)(1)(v). Consequently, the Staff opposes admissibility of this contention.

Therefore, for the reasons discussed above, TOP-MISC-001 should be rejected.

TOP-MISC-002[79] - WATER RIGHTS

> Pursuant to 10 CFR § 63.121 (d)(1) the DOE is to obtain such water rights as may be needed to accomplish the proposed repository; and 10 CFR § 63.121 (d)(2) water rights are included in the additional controls to be established. Pursuant to the [Timbisha Shoshone] Homeland Act, 16 USC 410aaa, PL 106-423, Section 5 (b)(2) Timbisha's water rights are established with "The priority date of the Federal water rights described in subparagraphs (A) through (E) of paragraph (1) shall be the enactment of this Act…shall not be subject to relinquishment, forfeiture or abandonment." Timbisha challenges the availability of water as insufficient to meet the needs of both the DOE and Timbisha.

TOP Petition at 11. To support this contention, the Timbisha Shoshone Yucca Mountain Oversight Program Non-profit Corporation (TOP) alleges that there is not enough water to meet the needs of both the Timbisha Shoshone and DOE. *Id*. TOP asserts the [Timbisha Shoshone] Homeland Act guarantees a sufficient supply of water for the Timbisha Shoshone. *Id.* (citing Timbisha Shoshone Homeland Act, 16 U.S.C. § 410aaa). The petitioner states that DOE's license application is materially incomplete because it fails to consider the Timbisha Shoshone's water requirements, and it fails to comply with 10 C.F.R. § 63.121 (b) and (d). TOP Petition at 12.

Staff Response

The Staff opposes admissibility of this contention because it does not meet the standards set forth in 10 C.F.R. § 2.309(f)(1)(v) and (vi) because the petitioner does not provide adequate support for its position, nor does the contention demonstrate that there is a genuine dispute on a material issue of law or fact.

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[79] The Timbisha Shoshone Yucca Mountain Oversight Program Non-profit Corporation did not choose a three letter acronym or label its contentions. For convenience, the Staff chose "TOP" as its acronym and assigned labels to its contentions.

If the petitioner is alleging that its water rights will be violated if DOE receives a construction authorization, the Staff notes that the NRC is not the proper forum for adjudicating disputes over water rights. *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), CLI-07-25, 66 NRC 101, 107 (2007) (Where petitioner "claims that NRC ought to concern itself with water use matters within the jurisdiction of other state and Federal agencies," the "complaints simply do not articulate any issue material to this proceeding…."); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), LBP-82-117A, 16 N.R.C. 1964, 1990 (1982) ("The District Court has jurisdiction to enforce Indian water rights and this Board does not.").

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Because the petitioner has only provided conclusory statements to the effect that insufficient water is available to meet the needs of both the Timbisha Shoshone and DOE, the contention lacks supporting expert opinion or supporting facts. *See, e.g., Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998) ("[A]n expert opinion that merely states a conclusion…without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion as it is alleged to provide a basis for the contention."). The petitioner has not offered any explanation or specific reasons addressing why the water needs of both the Timbisha Shoshone and DOE cannot be satisfied; therefore, there is no basis for the assertion that DOE cannot comply with 10 C.F.R. § 63.121. Accordingly, 10 C.F.R. § 2.309(f)(1)(v) has not been met, and the Staff opposes admissibility of this contention.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The contention also alleges that DOE's license application is "materially incomplete because it fails to sufficiently consider the water requirements of Timbisha pursuant to the Homeland Act…." TOP Petition at 12. As discussed above, TOP fails to provide a basis for

why there is insufficient water available to meet the needs of both the Timbisha Shoshone and DOE. Further the petitioner does not cite any authority that would explicitly require DOE to list all of the competing claims to a water source that DOE plans to use. TOP asserts that DOE fails to comply with 10 C.F.R. § 63.121(b) and (d). *Id.* However, § 63.121(b) and (d) require DOE to establish appropriate controls, including water rights, outside of the geologic repository operations area, and to obtain such water rights as may be needed to accomplish the purpose of the geologic repository operations area. These regulations do not require DOE to discuss any competing claims to water rights. In the absence of such a requirement, TOP fails to establish a genuine dispute regarding the application. *See* 10 C.F.R. § 2.309(f)(1)(vi) ("[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the *supporting reasons* for the petitioner's belief…" is required.) (emphasis added). Therefore, this contention is inadmissible.

For the reasons discussed above, TOP-MISC-002 should be rejected.

2. Not Opposed or Opposed in Part Contentions

The Staff does not oppose the admissibility of the following contentions:

NEV-SAFETY-14 – PRECIPITATION MODEL

> The precipitation component of the net infiltration model, which is described in SAR Subsection 2.3.1.3.2 and similar subsections, is fundamentally flawed because it relies upon modeling that fails to represent physical and empirical aspects of the precipitation process, and because no attempt has been made to investigate important aspects of its performance.

NEV Petition at 119.

Staff Response

The NRC Staff does not oppose admission of this contention. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-14 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-14 asserts that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 123, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 14 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 123-24. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 123-24. Therefore, with respect to this part of the NEV-SAFETY-14, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.1.3.2 and “similar” subsections. NEV Petition at 119. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

For the reasons stated above, this contention is inadmissible.

NEV-SAFETY-40 - PARAMETER UNCERTAINTY TREATMENT IN NET INFILTRATION MODEL

> The net infiltration modeling, reflected in SAR Subsections 2.3.1.3.2 through 2.3.1.3.4 and similar subsections, is invalid because the representation of parameter uncertainty in the net infiltration modeling is inadequate and the methodology for selecting net infiltration values for unsaturated zone modeling is ad hoc, inconsistent, and incorrect.

Nevada Petition at 230. The Staff does not oppose the admission of this contention. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Staff Response

NEV-SAFETY-04 seeks to raise a dispute with SAR Subsections 2.3.1.3.2 through 2.3.1.3.4 and similar subsections. NEV Petition at 230. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi); s*ee also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the

named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

In sum, the contention is inadmissible under 10 C.F.R. § 2.309(f)(1)(v) and (vi).

NEV-SAFETY-58 – GROUNDWATER SAMPLES IN THE UNSATURATED ZONE SORPTION TESTS

> SAR Subsection 2.3.8.3.1, and similar and related subsections, assume without validation that two groundwater compositions (from the saturated zone) are representative and useful for experimentation to describe radionuclide sorption in the unsaturated zone.

NEV Petition at 323. The Staff does not oppose NEV-SAFETY-58 to the extent that it raises an issue with SAR subsection 2.3.8.3.1. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-58 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-58 asserts that due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 325, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 58 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 325. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 325. Therefore, with respect to this part of the NEV-SAFETY-58, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsection 2.3.8.3.1 and "similar and related" subsections. NEV Petition at 323, 325. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-60 – EMPIRICAL SITE-SPECIFIC DATA AND THE NEAR-FIELD CHEMISTRY MODEL

> DOE's near-field chemistry model is not site specific and therefore not valid for Ti-7 and C-22 corrosion studies because the unsaturated zone hydrogeochemical characterization porewater data are not satisfactory for determining the environment in which in-drift geochemical reactions will occur.

NEV Petition at 330. In this contention, Nevada raises two issues in asserting its claims that the near-field chemistry model is not valid for corrosion studies conducted to analyze the environment it which in-drift chemical reactions will occur. *See* NEV Petition at 330. First, at "Issue 1," Nevada claims that pore-water composition is erroneously equated with fracture flow water. *See* NEV Petition at 332. Second, at "Issue 2," Nevada argues that the pore-water samples used by DOE for the near-field chemistry models are inadequate or inappropriate due to concerns about whether the water samples are spatially representative, sufficient in number, and properly screened for microbial action. *See* NEV Petition at 335. Based on these claimed deficiencies, Nevada alleges noncompliance with several sections of Part 63, in particular, 10 C.F.R. §§ 63.113, 63.114(f), and 63.115. *See* NEV Petition at 331-32.

Staff Response

The Staff opposes the admissibility of NEV-SAFETY-60 with respect to the portion addressing the subject matter of "Issue 1" (objecting to DOE equating pore-water and fracture water), because it fails to provide a concise statement of supporting facts or expert opinion as required by 10 C.F.R. § 2.309(f)(1)(v) and fails to demonstrate the existence of a genuine dispute of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, this portion of NEV-Safety-60 should be rejected. The Staff does not oppose the portion of NEV-SAFETY-60 captured in "Issue 2" (objecting to the adequacy or appropriateness of the pore-water samples used by DOE due to quality concerns).

10 C.F.R. § 2.309(f)(1)(v): Concise Statement of Supporting Facts or Expert Opinion

Section § 2.309(f)(1)(v) requires that a contention be supported by a concise statement of fact or expert opinion. An expert opinion must not be a mere conclusory statement; rather, it must be supported with sufficient basis or explanation to permit "the Board to make the necessary, reflective assessment of the opinion." *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)). Although Nevada provides reference to an expert opinion, that expert fails to provide sufficient basis and explanation for his opinion as required by 10 C.F.R. § 2.309(f)(1)(v).

As a preliminary matter, within the first part of the "Issue 1" section of argument, Nevada emphasizes that DOE fracture water compositions have not been sampled directly, but provides no claim or evidence to indicate that fracture waters exist in sufficient quantity to sample directly. NEV Petition at 332. There is also no explanation as to why methods other than direct sampling, such as the sampling and analysis of fracture wall minerals and isotopic compositions that DOE performed, are insufficient to represent the properties of fracture water. *See* SAR Subsection 2.3.5.3.2.2.1 at 2.3.5-30 and 31.

Nevada continues by arguing, in a two-part discussion under "Issue 1," that DOE's treatment of unsaturated zone pore-water as being geochemically equivalent to unsaturated zone fracture water for near-field chemistry modeling purposes is incorrect. *See* NEV Petition at 332. The expert does not directly refute DOE's analysis, based on FEHM modeling, that the equilibration between matrix and fracture waters is rapid relative to downward transport throughout much of the host rock mass. Instead, he states that "DOE's observations *may* incorrectly distinguish matrix. . . from small and large fracture flow." *See* NEV Petition at 333 (emphasis added). He follows with other equivocal statements and suppositions that lack basis and fail to provide the requisite support for the idea that matrix waters are not representative of fracture waters. For instance, he states that "it is *most*

doubtful that fracture flow water in fast path transport will come into equilibrium with the wall rock of the fractures in welded tuffs. . . [t]here is just not sufficient time for this to happen." NEV Petition at 333 (emphasis added). This statement amounts to Nevada's expert claiming, without support, that fracture waters move "too quickly" for equilibration to occur, while DOE analysis of modeling scenarios *provides a basis* to conclude otherwise. *See* SAR Subsection 2.3.5.3.2.2.1 at 2.3.5-31. It is not sufficient for an expert to merely assert that he believes the near-field waters will behave without providing a supporting explanation for his opinion. However, this is precisely what Nevada's expert does. His statements do not comply with 10 C.F.R. § 2.309(f)(1)(v), because they amount to mere assertions that provide an insufficient basis for the Board to make a reflective assessment of the opinion. *USEC Inc*. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998)).

The second section of argument within "Issue 1" raises objections to DOE's conclusion, based on supporting data from isotopic composition analyses, that fracture waters equilibrate rapidly with the rock matrix. *See* NEV Petition at 334. Nevada's expert argues that the data "are evidence of fracture path transport, not matrix pore-water diffusion" and that "[t]here was no matrix pore-space geochemically studied using strontium and uranium by DOE." NEV Petition at 334. These assertions do not provide a basis to refute the conclusion of equilibrium between fracture waters and rock matrix based on the isotopic data from several studies as described at SAR Subsection 2.3.5.3.2.2.1 at 2.3.5-30 and 31. The SAR provides that changes in isotopic ratios of successive mineral layers in the fractures show that waters in direct contact with the fracture walls has matrix characteristics, whereas water that was insulated from contacting fracture walls has surface-water characteristics. *See* 2.3.5.3.2.2.1 at 2.3.5-30 and 31. Thus, SAR section 2.3.5.2.2.1 concludes water in the pores of the rock matrix would be in equilibrium with water flowing through fractures. Nevada's contrary

assertions, however, simply assume non-equilibrium between rock matrix and fracture waters without basis: "[t]here are no data presented to indicate that matrix as defined in FEHM equates to matrix as defined with respect to pore-water chemistry" and without explaining why DOE's assertions are incorrect. *See* Nevada petition at 333.

Nevada's expert, as discussed above, fails to explain the basis for his arguments with regard to DOE's equating pore and fracture waters. Nevada, therefore, does not support its assertions and fails to provide a sufficient basis necessary to comply with 10 C.F.R. § 2.309(f)(1)(v). Rather than presenting mere assertions, a petitioner must provide documents or other factual information or expert opinion that set forth the necessary technical analysis to show why the proffered bases support its contention. *See Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305, *vacated in part and remanded on other grounds,* CLI-95-10, 42 NRC 1, *aff'd in part,* CLI-95-12, 42 NRC 111 (1995).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

A contention must demonstrate that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi). A petitioner "must do more than submit bald or conclusory allegation[s] of a dispute with the applicant." *Dominion Nuclear Connecticut, Inc*. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsid. denied*, CLI-02-01, 55 NRC 1 (2002) (internal citation omitted).

Nevada alleges with respect to the subject matter discussed in "Issue 1," the portion of NEV-SAFETY-60 opposed by the Staff, that DOE has not shown in its near-field chemistry model, described at SAR Subsection 2.3.5.3, that pore and fracture waters are equivalent for the purposes of in-drift environment corrosion tests or that an alternative strategy for representing in-drift water chemistry would affect repository performance. *See* NEV Petition at 338. However, for many of the reasons discussed above, Nevada has failed to present sufficient explanation or opinion that demonstrates the claimed shortcomings in DOE's

analyses and conclusions regarding pore and fracture water equivalence.

Furthermore, Nevada's expert actually provides information that contradicts his argument that DOE's equating of pore-waters and fracture waters for the purposes of corrosion experiments is inappropriate. After suggesting, without explanation, that he believes the pore-water in the unsaturated zone may either be connate or in "meta-stable equilibrium with the matrix rock," the expert states that "[a] higher TDS is expected for pore-water that has been trapped inside the matrix pore and micro-fracture structures than for fracture flow unsaturated zone water that is in fast path...gravity driven transport." NEV Petition at 333. Because a higher concentration of dissolved elements in water has the general effect of enhancing corrosion (e.g., SAR section 2.3.6.4.2), DOE is, by the logic of Nevada's expert, using a conservative approach that potentially overstates the corrosive properties of fracture water. Thus, Nevada has not shown that the DOE approach would be in noncompliance with 10 C.F.R. §§ 63.114(f) or 63.113 by underestimating the effects of water chemistry in the performance assessment such that the magnitude and time of the resulting radiological exposures to the RMEI or the accessible environment would be changed.

Nevada also argues that due to DOE not collecting direct samples of fracture water, "there are no reliable hydrogeochemical data…for the in-drift seepage and for reactions in the waste emplacement environment." NEV Petition at 338. Yet, as discussed above, Nevada does not claim that fracture waters are available to sample directly and does not support the assertion that data regarding fracture water obtained by other means is insufficient. Thus, Nevada has not provided sufficient support to state a genuine dispute of fact or law with regard to its objections to DOE's findings of pore and fracture water equilibrium ("Issue 1" subject matter).

For the foregoing reasons, NEV-SAFETY-60 in part with respect to Issue1, is inadmissible because it fails to meet 10 C.F.R. § 2.309(f)(1)(v) and (vi). The Staff does not oppose the contention with respect to Issue 2.

NEV-SAFETY-75 – MICROBIALLY INFLUENCED CORROSION MODEL

> The model described in SAR Subsection 2.3.6.3.3.2 and DOE reference "General Corrosion and Localized Corrosion of Waste Package Outer Barrier, ANL-EBS-MD-000003 Rev. 03" (07/25/2007), LSN# DN2002460404, to calculate an enhancement factor for microbially influenced corrosion as a multiplier to a general corrosion rate is not a standard or recommended practice and cannot be used to estimate localized corrosion resulting from the presence and activities of microorganisms.

NEV Petition at 409. The Staff does not oppose NEV-Safety-75 to the extent that it raises an issue with SAR subsection 2.3.6.3.3.2. However, NEV-Safety-75, also seeks to raise a dispute with "similar and related" subsections. NEV Petition at 414. To the extent that Nevada seeks to raise an issue with "similar and related" SAR subsections, the contention is inadmissible with respect to those unspecified SAR subsections.

Staff Response

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar and related" subsections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another subsection in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related" to the named subsection. *See Commonwealth Edison Co.* (Zion Nuclear Power Station,

Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR subsections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-88 - THERMODYNAMICS OF COMPLEX DELIQUESCENT SALT REACTIONS DURING C-22 CORROSION

> SAR Subsections 2.3.6.4.4.1, 2.3.5.5.4.2.1 and 2.3.5.5.4.3 and similar subsections, which describe hydroscopic dust and seepage environments, fail to consider the formation of a variety of complex hydroscopic natural salts such as tachyhydrite ($CaMg_2Cl_6 \cdot 12H_2O$) and carnallite ($KMgCl_3 \cdot 6H_2O$) that could substantially influence modes and rates of corrosion

NEV Petition at 474. The NRC Staff does not oppose admission of this contention.[80] However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-88 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-88 asserts that due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 478-79, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

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[80] The NRC Staff notes that there is overlap between the matter raised in this contention and that raised in NEV-SAFETY-95, "Peak Thermal Period Seepage and Corrosion."

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 88 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 478-79. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes

that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 478-79. Therefore, with respect to this part of the NEV-SAFETY-88, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-95 - PEAK THERMAL PERIOD SEEPAGE AND CORROSION

> SAR Subsections 2.3.3, 2.3.5 and 2.3.6 and similar subsections dealing with water seepage and corrosion, fail to account for corrosion of C-22 and Ti-7 during the thermal period.

NEV Petition at 513. The NRC Staff does not oppose admission of this.[81] However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-95 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-95 asserts that due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 516-17, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the

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[81] The NRC Staff notes that there is overlap between the matter raised in this contention and that raised in NEV-SAFETY-88, "Thermodynamics of Complex Deliquescent Salt Reactions During C-22 Corrosion."

petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 95 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 1516-17. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See

NEV Petition at 516-17. Therefore, with respect to this part of the NEV-SAFETY-95, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.3, 2.3.5 and 2.3.6 and “similar” subsections. NEV Petition at 513. To the extent that Nevada seeks to raise an issue with a “similar” SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are “similar” to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 (“We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner.”). The Commission has also held that one of the purposes of the contention rule is to put “other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing.” *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-101 - SULFUR ACCUMULATION AT THE METAL-PASSIVE FILM INTERFACE

> SAR Subsection 2.3.6.3 (and subsections therein), which addresses the general corrosion of the waste package outer barrier, fails to consider the possibility of sulfur accumulation at the metal-passive film interface during slow passive corrosion, which could lead to an increased rate of uniform corrosion.

NEV Petition at 541.

Staff Response

The Staff does not oppose the admission of this contention to the extent that it raises a dispute with the cited SAR subsection. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-101 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-101 asserts that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 544-45, does not satisfy the showing required to meet the requirements of10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 101 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 544-45. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." Commonwealth Edison Co. (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes

that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 544-45. Therefore, with respect to this part of NEV-SAFETY-101 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

NEV-SAFETY-102 - SULFUR ACCUMULATION AND LOCALIZED CORROSION

> SAR Subsection 2.3.6.4 and similar subsections fail to consider the possibility of sulfur accumulation at the metal-passive film interface during slow passive corrosion, which could lead to an increased susceptibility to localized corrosion.

NEV Petition at 546.

Staff Response

The Staff does not oppose the admission of this contention to the extent that it raises a dispute with the cited SAR subsection. However, to the extent that the contention states objections to the TSPA and "similar" subsections, the Staff opposes admission of NEV-SAFETY-102 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-102 asserts that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 550, does not satisfy the showing required to meet the requirements of 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 102 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 550. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 550. Therefore, with respect to this part of NEV-SAFETY-102 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.4 and "similar" subsections. NEV Petition at 546, 549. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar " to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

NEV-SAFETY-103 - SULFUR ACCUMULATION AND STRESS CORROSION INITIATION

> SAR Subsection 2.3.6.5 and similar subsections fail to consider the possibility of sulfur accumulation at the metal-passive film interface and at grain boundaries in the alloy during a combination of slow passive corrosion and exposure at relatively high temperature, which would create a strong susceptibility to stress corrosion crack initiation.

NEV Petition at 551. The Staff does not oppose the admission of this contention to the extent that it raises a dispute with the cited SAR subsection. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-103 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-103 asserts that due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 554-55, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists . . . on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY-103 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention . . . ." NEV Petition at 554-55. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 555. Therefore, with respect to this part of NEV-SAFETY-103 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.5 and "similar" subsections. NEV Petition at 551, 554. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" subsection of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified

NEV-SAFETY-104 - SULFUR ACCUMULATION AND STRESS CORROSION PROPAGATION

> SAR Subsection 2.3.6.5 and similar subsections fail to consider the possibility of sulfur accumulation at the metal-passive film interface, and at grain boundaries in the alloy during a combination of slow passive corrosion and exposure at relatively high temperature, which could lead to an increased susceptibility to stress corrosion crack propagation.

NEV Petition at 556.

Staff Response

The Staff does not oppose the admission of NEV-SAFETY-104 to the extent it raises a dispute with cited SAR sections. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-104 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-104 asserts that, due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 560, does not satisfy the showing required to meet the requirements of 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists . . . on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 104 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention . . . ." NEV Petition at 560. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists . . . on a material issue of law or fact" and "references to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 &2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 &3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes

that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. *See* NEV Petition at 560. Therefore, with respect to this part of the NEV-SAFETY-104 Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.6.5 and "similar" subsections. NEV Petition at 556, 559. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" subsection of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another subsection in the SAR as part of the contention, it should have identified those subsections as well. The Staff and applicant should not have to guess which subsections Nevada believes are "similar" to the named subsection. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee*, CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR subsections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific subsections of the SAR that were identified.

NEV-SAFETY-111 – HLW WASTE GLASS DISSOLUTION

> SAR Subsection 2.3.7.9 and similar and related subsections, which state and/or assume that HLW borosilicate waste glass degradation and radionuclide release rates can be congruently modeled with only orthosilicic acid controlling glass dissolution, are incorrect because in an advective flow regime and under acidic conditions different more rapid modes of dissolution will occur.

NEV Petition at 588.

Staff Response

The Staff does not oppose NEV-Safety-111 to the extent that it raises an issue with SAR subsection 2.3.7.9. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-111 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-111 asserts that due to the complexity of the TSPA, a determination of due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 591-92, does not satisfy the showing required to meet the requirements of 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the

petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 111 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 591-92. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See

NEV Petition at 591-92. Therefore, with respect to this part of the NEV-SAFETY-111, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.7.9 and "similar and related" subsections. NEV Petition at 588, 591. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to those specific sections of the SAR that were identified.

NEV-SAFETY-112 – HLW WASTE GLASS DEGRADATION

> SAR Subsection 2.3.7.9.3 and similar subsections, which utilize a release rate formula for HLW glass degradation employing a glass surface area exposure factor that ranges between 4 and 17, are based upon insufficient laboratory testing and exclusion of a fundamental hydration reaction, and therefore result in an incorrect measure of radionuclide release.

NEV Petition at 593. The Staff does not oppose NEV-SAFETY-112 to the extent that it raises an issue with SAR subsection 2.3.7.9.3. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-112 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-112 asserts that due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 598-99, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007)

(contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 112 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 598-99. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 598-99. Therefore, with respect to this part of the NEV-SAFETY-112, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.7.9.3 and "similar" subsections. NEV Petition at 593, 598. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-113 - COMPETITIVE SORPTION IN THE UNSATURATED

> SAR Subsection 2.3.8.3.1, and similar and related sections, assume without validation that "chromatographic effects" will limit the competitiveness of mixtures of radionuclides (and other cations and metals) for sorption sites in the unsaturated zone during transport.

NEV Petition at 601. The Staff does not oppose NEV-SAFETY-113 to the extent that it raises an issue with SAR subsection 2.3.8.2.1. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-113 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-113 asserts that due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 604, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the

application).

NEV-SAFETY- 113 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 604. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See NEV Petition at 604. Therefore, with respect to this part of the NEV-SAFETY-113, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.8.3.1 and

"similar and related" subsections. NEV Petition at 601, 603. To the extent that Nevada seeks to raise an issue with a "similar and related" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar and related" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar and related" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-114 - APPLICABILITY OF SORPTION DATA

> SAR Subsections 2.3.8.1, 2.3.9, 2.1.2.3, 2.1.4 and similar subsections, which describe sorption characteristics of the upper and lower natural barriers, are not an adequate basis for safety assessment since they evaluate the retardation potential of the host rock data from crushed tuff column experiments that do not represent in situ characteristics of sorption.

NEV Petition at 605. The Staff does not oppose NEV-SAFETY-114 to the extent that it raises an issue with SAR subsections 2.3.8.1, 2.3.9, 2.1.2.3 and 2.1.4. However, NEV-Safety-114, also seeks to raise a dispute with "similar" subsections. NEV Petition at 605, 609. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR subsections.

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" subsections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another subsection in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named subsection. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 &

2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR subsections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-115 - MATRIX DIFFUSION

> SAR Subsection 2.3.8 and similar subsections, dealing with matrix diffusion, utilize percolation fluxes that are based upon mean values rather than on individual storm events, thereby overestimating the diffusion of radionuclides during fracture-matrix interactions, even before consideration is given to additional effects due to the degree of radionuclide dilution, and authigenic mineralization along fracture wall surfaces causing matrix pore and micro-fracture plugging, which together make matrix diffusion insignificant during fracture flow transport.

NEV Petition at 610. The Staff does not oppose NEV-SAFETY-115 to the extent that it raises an issue with SAR subsection 2.3.8. The NRC Staff does not oppose admission of this contention. However, to the extent that the contention states objections to the TSPA, the Staff opposes admission of NEV-SAFETY-115 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi).

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

NEV-SAFETY-115 asserts that due to the complexity of the TSPA, a determination of whether the contention "would necessarily lead to doses in excess of EPA's dose standards" could only be performed by DOE, *see* NEV Petition at 614, does not satisfy the showing required to meet 10 C.F.R. § 2.309. The affidavit of Michael C. Thorne is referenced to support these assertions; however, it also fails to provide a reasoned basis for the statements. *See* NEV Petition, Attachment 3, Affidavit of Michael C. Thorne. Bare assertions are not sufficient for contention admission. *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the

petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316 (2007) (contention found not to meet criterion 6 because it did not reference a specific portion of the application).

NEV-SAFETY- 115 asserts that possibly thousands of changes would need to be made to the TSPA's approach in order to "include the effects of accepting this one contention..." NEV Petition at 614. To the extent that the reference is interpreted to state objections to aspects of the TSPA that are not specifically identified in the contention (i.e., matters beyond the scope of the particular contention) the requirements of 10 C.F.R. § 2.309(f)(1)(vi) are also not met.

In addition, the Staff and Applicant should not have to guess which parts of the TSPA Nevada believes would need "many thousands of possible changes." Section 2.309(f)(1)(vi) requires "sufficient information to show that a genuine dispute exists on a material issue of law or fact" and references "to specific portions of the application." "The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner" and boards are not expected to address "arguments not advanced by litigants themselves." *See* C*ommonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-4, 49 NRC 185, 194 (1999). Nevada needs to identify "specific grievances" and provide other parties "a good idea" of "claims they will be either supporting or opposing." *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada does not identify which aspects of the TSPA it is challenging, that aspect of the contention is inadmissible.

Further, although Nevada claims that "there are many thousands of possible changes that would need to be made to DOE's TSPA approach to include the effects of accepting this one contention along with all possible combinations of Nevada's other contentions relating to different aspects of the TSPA," Nevada offers no explanation of why this is the case. See

NEV Petition at 614. Therefore, with respect to this part of the NEV-SAFETY-115, Nevada fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

In addition, this contention seeks to raise a dispute with SAR subsections 2.3.8 and "similar" subsections. NEV Petition at 610, 613. To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR sections.

Here, because Nevada does not specify which other "similar" section of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another section in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named section. *See Zion*, CLI-99-4, 49 NRC at 194 ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Oconee,* CLI-99-11, 49 NRC at 334. Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-117 – RADIONUCLIDE SORPTION IN THE SATURATED ZONE

> SAR Subsection 2.3.9.3.2.2 and similar subsections, which address radionuclide sorption in the saturated zone, rely on distribution coefficients that are derived from invalid experimental procedures, and as a consequence, the radionuclide transport calculations in the LA cannot be relied upon.

NEV Petition at 619. The Staff does not oppose NEV-Safety-117 to the extent that it raises an issue with SAR subsection 2.3.9.3.2.2. However, NEV-Safety-117, also seeks to raise a dispute with "similar" subsections. NEV Petition at 625. To the extent that Nevada seeks to raise an issue with "similar" SAR subsections, the contention is inadmissible with respect to those unspecified SAR subsections.

Staff Response

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" subsections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with another subsection in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "similar" to the named subsection. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 &

2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of the petitioners' specific grievances and thus give[ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR subsections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes to those specific sections of the SAR that were identified.

NEV-SAFETY-172 - INSPECTION AND VERIFICATION OF TAD

> SAR Subsections 5.0, 5.1, 1.5, 1.5.1, 1.2.1, and similar subsections, and DOE'S QARD (incorporated by reference in the License Application in Chapter 5) Sections 7.1, 7.2, and similar subsections, demonstrate that DOE is required to, but does not intend to, require reasonable assurance with respect to the contents and the proper packaging of those contents by nuclear utilities providing waste to DOE for the proposed repository in transportation, aging, and disposal (TAD) canisters; such quality assurance failure with respect to the important-to-safety (ITS) TAD renders it unusable for emplacement and storage of waste in the proposed Yucca Mountain repository.

NEV Petition at 923. NEV-SAFETY-172 alleges that DOE failed to assure that components received at Yucca Mountain from third-party, outside sources have been prepared in accordance with a compliant quality assurance program. Id., at 932.

Staff Response

The NRC Staff does not oppose admission of this contention. However, to the extent that the contention states objections to “similar subsections” of the SAR and the QARD, the Staff opposes admission of NEV-SAFETY-172 for failing to satisfy the criteria set forth in 10 C.F.R. § 2.309(f)(1)(vi). The Staff notes that on November 11, 2008 it issued a request for additional information (RAI) to DOE (LSN# NRC000029880) that raised a similar issue. On December 10, 2008, DOE responded to Question 9 of the RAI (LSN# NRC000029868), which addressed this issue, by stating:

> [t]he U.S. Department of Energy (DOE) retains responsibility for assuring that entities that perform quality-affecting work related to the geologic repository operations area, including federal waste custodians Environmental Management (EM) and the Naval Nuclear Propulsion Program (NNPP) and their contractors, as well as commercial licensees/certificate holders and their contractors, work under an accepted or approved Quality Assurance (QA) program.

Therefore, DOE has already acknowledged its responsibility to assure that relevant work

performed for DOE by subcontractors is accomplished in accordance with a compliant quality assurance program.

10 C.F.R. § 2.309(f)(1)(vi): Genuine Dispute Regarding the Application

The Staff opposes admission of NEV- SAFETY-172 under 10 C.F.R. § 2.309(f)(1)(vi) because NEV-SAFETY-172 seeks to raise a dispute with SAR subsections 5.0, 5.1, 1.5, 1.5.1, 1.2.1 and "similar subsections." To the extent that Nevada seeks to raise an issue with a "similar" SAR subsection, the contention is inadmissible with respect to those unspecified SAR subsections.

Section 2.309(f)(1)(vi) requires that a contention provide "sufficient information to show that a genuine dispute exists on a material issue of law or fact." This section further requires that the information include references to specific portions of the application that the petitioner disputes. 10 C.F.R. § 2.309(f)(1)(vi). *See also PPL Susquehanna, LLC.* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-4, 65 NRC 281, 316, (2007) (Contention found not to meet criterion 6 because it did not reference a specific portion of the application).

Here, because Nevada does not specify which other "similar" section or sections of the SAR it wishes to dispute, the contention fails to meet criterion 6 with respect to those other unidentified sections. If Nevada wished to raise an issue with other sections in the SAR as part of the contention, it should have identified those sections as well. The Staff and applicant should not have to guess which sections Nevada believes are "related" to the named section. *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) ("We do not expect our adjudicatory Boards, unaided by the parties, to sift through the parties' pleadings to uncover and resolve arguments not advanced by litigants themselves. The burden of setting forth a clear and coherent argument for standing and intervention is on the petitioner."). The Commission has also held that one of the purposes of the contention rule is to put "other parties in the proceeding on notice of

the petitioners' specific grievances and thus give [ ] them a good idea of the claims they will be either supporting or opposing." *Duke Energy Corp.,* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). Because Nevada has not identified any additional SAR sections which it disputes, if this contention is otherwise found to be admissible, it should be limited to disputes involving those specific sections of the SAR it identifies.

NYE-NEPA-1 – FAILURE TO ADEQUATELY CONSIDER CUMULATIVE IMPACTS TO THE ENVIRONMENT, OVER TIME, FROM RELEASES OF RADIOLOGICAL AND OTHER CONTAMINANTS TO GROUNDWATER AND FROM SURFACE WATER DISCHARGES

> NRC's regulations implementing the National Environmental Policy Act ("NEPA") require that the Department of Energy's (DOE's) license application for the repository must be accompanied by an Environmental Impact Statement ("EIS") prepared in accordance with the Nuclear Waste Policy Act, 10 CFR § 63.21(a), and further provide that NRC may not adopt any environmental impact statement prepared by DOE for a geologic repository if there is "significant and substantial new information or new considerations [that would] render such environmental impact statement inadequate." 10 CFR § 51.109(c)(2). The failures of DOE's 2002 Environmental Impact Statements and the 2008 Repository Supplemental EIS (collectively "EISs") to completely and adequately characterize potential contaminant releases to groundwater, and from surface discharges, as well as to adequately characterize the potential impacts on the environment from those releases and discharges, constitute significant new and additional considerations that render the EISs inadequate for that portion of the EISs that consider impacts to groundwater and from surface discharge over the long term, pursuant to the related legal requirements' of NEPA itself, 42 U.S.C. §§ 4332(C); the Nuclear Waste Policy Act, 42 U.S.C. § 10134(f) provisions pertaining to NEPA compliance for the repository; DOE's regulations implementing NEPA, 10 CFR Part 1021; and NRC's regulations implementing NEPA, 10 CFR Part 51 & 63. Therefore, NRC may not adopt the EIS without further supplementation. 10 CFR § 51.109(c)(2).

NYE Petition at 73. NYE-NEPA-1, which asserts that the FEIS and FSEIS fail to adequately assess the proposed repository's impacts on groundwater, appears to raise three distinct issues, which is not consistent with the Advisory PAPO Board's direction that contentions should each raise one distinct issue. *U.S. Dep't of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 454 (2008). NYE-NEPA-1 raises three distinct issues, in asserting that the FEIS and FSEIS fail to adequately assess:

(1) the nature and extent of the repository's cumulative impact on groundwater in the volcanic-alluvial aquifer over time;
(2) the nature and extent of the repository's cumulative impact on groundwater when added to other sources of water, radiological contaminants, and other contamination,

surface water runoff and groundwater intrusion of contaminants from past and future activities at the Nevada Test Site ("NTS"); and

(3) the potential impacts from discharges of potentially contaminated groundwater to the surface.

NYE Petition at 79.

Staff Response

The Staff does not oppose the admission of NYE-NEPA-1. The Staff, however, notes that (1) and (3) raise issues similar to those raised in the Staff's Adoption Determination Report. *See* EISADR at 3-10 – 3-12. DOE has agreed to supplement its existing EISs with additional analysis to address the potential impacts of the proposed repository on groundwater and from the surface discharge of groundwater. *See* Supplement to the Environmental Impact Statements for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV, 73 Fed. Reg. 63,463 (Oct. 24, 2008).

NYE-SAFETY-1 - FAILURE TO INCLUDE ACTIVITIES IN THE PERFORMANCE CONFIRMATION PROGRAM SUFFICIENT TO ASSESS THE ADEQUACY OF INFORMATION USED TO EVALUATE THE CAPABILITY OF THE UPPER NATURAL BARRIER (UNB) FOLLOWING REPOSITORY CLOSURE

> The Applicant fails to include activities in the performance confirmation program required as part of the Safety Analysis Report (SAR) [Yucca Mountain Repository License Application, General Information and Safety Analysis Report. DOE/RW-0573 REV 0. 2008. (SAR Table 4-1; SAR p. 4-43 to 4-47). LSN DEN001592183] sufficient to assess the adequacy of the assumptions, data, and analyses that support modeling of the features and processes, particularly infiltration, seepage, and unsaturated zone (UZ) flow, that contribute to and provide the basis for the stated capability of the UNB to prevent or substantially reduce the amount and rate of water seeping into emplacement drifts. See 10 CFR 63.102(m) and 63.131(a)(2). Given the uncertainty in the infiltration modeling, site-specific activities should be conducted, and data gathered, to assess the adequacy of the basis for treatment of surface water runoff, evaporation, transpiration, depth of surficial soils, and properties of shallow bedrock in the infiltration model. For the UZ flow model, site specific activities and data are needed to evaluate the adequacy of the bases for treatment of the distribution of property values for fractures and matrix in the various hydrologic units, fracture–matrix flow and interaction, and the role of the Paintbrush non-welded unit in attenuating and diverting flow. For the seepage model, site specific activities and data are needed to evaluate the adequacy of the bases for treatment of the spatially variable rock and fracture properties, and the hydrological parameters that control seepage potential under both ambient (pre-emplacement) and higher-temperature (post-emplacement) conditions.

NYE Petition at 6. The Staff does not oppose the admission of this contention.

NYE-SAFETY-2 - FAILURE TO INCLUDE ACTIVITIES IN THE PERFORMANCE CONFIRMATION PROGRAM SUFFICIENT TO ASSESS THE ADEQUACY OF INFORMATION USED TO EVALUATE THE CAPABILITY OF THE LOWER NATURAL BARRIER (LNB) FOLLOWING REPOSITORY CLOSURE

> The Applicant fails to include activities in the performance confirmation program required as part of the Safety Analysis Report [*Yucca Mountain Repository License Application, General Information and Safety Analysis Report.* DOE/RW-0573 REV 0. 2008. (SAR Table 4-1, p. 4-43 to 4-47). LSN DEN001592183] sufficient to assess the adequacy of the assumptions, data, and analyses that support modeling of the features and processes that contribute to and provide the basis for the stated capability of the LNB to prevent or substantially reduce the rate of movement of radionuclides from the repository to the accessible environment. See requirements at 10 CFR 63.102(m) and 63.131(a)(2) Additional site-specific testing and monitoring activities are required to address uncertainties in the basis for the models used to evaluate the capabilities of the features of the LNB. For the unsaturated zone (UZ) model, activities should be conducted to assess the adequacy of the basis for treatment of (1) net infiltration rates over the mountain; (2) the heterogeneity of welded and nonwelded tuffs, their flow properties, and spatial distributions, especially below the repository; (3) fracture properties in zeolitic units and faults; (4) lateral diversion caused by zeolites; and (5) transport properties. For the saturated zone (SZ) model, activities should be conducted to assess the adequacy of the basis for treatment of (1) parameters related to SZ flow, including uncertainty in groundwater-specific discharge, flowing interval porosity, alluvium effective porosity, and horizontal anisotropy; (2) parameters related to matrix diffusion, including flowing interval spacing, effective diffusion coefficient, and matrix porosity; (3) parameters related to sorption, including sorption coefficients for tuff and alluvium; (4) parameters used to model colloid-facilitated transport including colloid retardation factor, groundwater concentration of colloids, and sorption coefficients onto colloids; and (5) the location of the northern and western boundaries the alluvium along the inferred flow path in the SZ because the movement of radionuclides through the SZ is affected by the contrast in the flow between these two media and because the retardation characteristics of the two media are different.

NYE Petition at 19-20. NYE-SAFETY-2 claims that DOE failed to include activities in the performance confirmation program proposed by DOE that would adequately assess

assumptions related to the capability of the lower natural barrier (LNB) to prevent or substantially reduce the rate of movement of radionuclides from the repository to the accessible environment. NYE Petition at 19. Nye County asserts that additional site-specific testing and monitoring activities are necessary to address uncertainties in the bases for the models used to evaluate the capabilities of the LNB. NYE Petition at 19-21.

The Staff does not oppose the admission of NYE-SAFETY-2.

CONCLUSION

For the reasons set forth above, the Staff respectfully submits that Caliente Hot Springs Resort LLC, Native Community Action Council, and Nuclear Energy Institute have not demonstrated their standing to intervene in this proceeding, and their petitions for leave to intervene should therefore be denied. Further, none of these petitioners have proffered an admissible contention. The Staff also submits that the State of California; Clark County, Nevada; the County of Inyo California; the Nevada Counties of Churchill, Esmeralda, Lander and Mineral; the Timbisha Shoshone Tribe; and White Pine County, Nevada have standing but have failed to submit at least one admissible contention. Accordingly, their petitions for leave to intervene should be denied. The Staff submits that the State of Nevada and Nye County, Nevada have standing and have proffered at least one admissible contention. The Staff respectfully submits that the Petitioners' contentions should be found admissible in the manner and to the extent set forth above. Finally, the Staff does not oppose the requests of Eureka County, Nevada and Lincoln County, Nevada to participate as interested governmental participants pursuant to 10 C.F.R. § 2.315(c).

/Signed (electronically) by/
Mitzi A. Young
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15D21
Washington, DC 20555-0001
(301) 415-1523
MAY@nrc.gov

/Executed in accord with 10 C.F.R. § 2.304(d)/
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Dated at Rockville, Maryland
this 9th day of February, 2009.

ATTACHMENT A

TRIBAL REPRESENTATION LETTERS

EXHIBIT A

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Central California Agency
650 Capitol Mall, Suite 8-500
Sacramento, CA 95814

IN REPLY REFER TO

FEB 2 9 2008

Mr. Joe Kennedy, Chairman
Timbisha Shoshone Tribe
785 North Main Street, Suite Q
Bishop, California 93514

Dear Mr. Kennedy:

The purpose of this correspondence is to provide a response to your written request dated February 4, 2008, wherein you requested that I, as Agency Superintendent, acknowledge or recognize all actions of the Timbisha Shoshone General Council at the special General Council meeting held on January 20, 2008.

In light of the recent actions at that meeting, where the General Council voted to ratify the November 13, 2007, General Election, actions and authority of the Tribal Council subsequent to August 25, 2007, and the interpretation of what constitutes a resignation from the Tribal Council, I hereby rescind my letter dated December 14, 2007.

Therefore, the Bureau of Indian Affairs, Central California Agency, recognizes the following individuals to be official tribal representatives of the Timbisha Shoshone Tribal Council:

Joe Kennedy, Chairman
Margaret Armitage, Vice-Chairman
Madeline Esteves, Secretary/Treasurer
Margaret Cortez, Council Member
Pauline Esteves, Council Member

Please contact Carol Rogers-Davis, Tribal Operations Officer, at (916) 930-3794 should you require further assistance in this matter.

Sincerely,

Troy Burdick
Superintendent

cc: Acting Regional Director, Pacific Region, Bureau of Indian Affairs

RECD MAR 03 '08

EXHIBIT B

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Central California Agency
650 Capitol Mall, Suite 8-500
Sacramento, CA 95814-4710

IN REPLY REFER TO

Mr. Joe Kennedy
Timbisha Shoshone Tribe
Post Office Box 206
Death Valley, California 92328

OCT 17 2008

Mr. George Gholson
1349 Rocking W Drive
Bishop, California 93514

RECEIVED OCT 21 2008

Dear Mr. Gholson and Mr. Kennedy:

The purpose of this correspondence is to provide a response to documentation submitted on September 26, 2008, regarding the removal of Mr. Joe Kennedy, Chairman of the Timbisha Shoshone Tribe, at a General Council meeting held September 20, 2008, in Las Vegas, NV.

The Central California Agency is also in receipt of documentation submitted by Mr. Joe Kennedy on October 1, 2008, and supporting documentation in regards to the recent actions taken during the September 20, 2008, General Council meeting.

Article VIII, Section 3. (b) of the Tribe's constitution states that Special meetings of the General Council may be called by the Tribal Chairperson or by any member of the General Council who submits a petition with ten (10) signatures of General Council members to the Tribal Council requesting a special meeting. It is evident this process was followed in accordance with the Tribe's constitution; however, the validity of (2) two handwritten signatures were challenged by the Tribal Council, which declined to call a meeting of the General membership to recall and replace the Chairman.

After review of the General Council Meeting Petition and of the two (2) printed names and signatures, it can be documented that the same individuals printed and signed their names in the same manner for a General Council meeting previously held in January 2008, under similar circumstances. Therefore, I believe there was no basis to deny the petition given the fact that the same two (2) signatures had been accepted by the Tribal Council in a previous meeting and acknowledge the petition as valid.

Because the Tribal Council declined to call a meeting, the General Council moved forward and continued the process of holding the September 20, 2008, meeting to conduct business. According to meeting minutes, a hand vote was taken to remove Joe Kennedy as Tribal Chairman. The results were 91-Yes, 29-No, 16-Abstain.

[illegible] vote, a further ballot vote was disseminated to voting members. Each member was instructed to write "Removal of Joe Kennedy" on the ballot. Once this process was completed, the ballots were counted and reconciled. The results of the vote on the resolution to remove Joe Kennedy as Tribal Chairperson were as follows: 130-Yes, 5-No, 1-Abstain.

The Tribe has reported that is has 252 voting members in which 136 participated, constituting a quorum. In accordance with Article VIII, Section 3.(c), No business shall be transacted in the absence of a quorum. A majority of the voting member's of the General Council shall constitute a quorum at all Council Meetings. Therefore, the results of the General Council meeting confirm that a quorum was established.

During this time, it was acknowledged that Ms. Margaret Armitage had resigned as Vice-Chairperson; therefore, opening up nominations for the Tribal Chairperson and Vice Chairperson seats. Oral nominations were taken for both positions. The person receiving the highest number of votes would be the Tribal Chairperson and the person receiving the second higher number votes would be the Vice-Chairperson. In conclusion, the total of each of the counts were reconciled. Minutes of the meeting reflect the results as George Gholson, Chairman with 106 votes, Wallace Eddy- 53 votes, Jacob Parra-50 votes and Ed Beaman-27 votes. Therefore, it was concluded that George Gholson would serve as the Tribe's Chairman and Wallace Eddy, Vice-Chairman.

After careful review of the above General Council actions taken at the September 20, 2008, General Council meeting, I am acknowledging the actions taken by the General Council at this meeting. Therefore, the Bureau of Indian Affairs, Central California Agency will recognize the following individuals to be official tribal representatives of the Timbisha Shoshone Tribal Council with the understanding that this council may change due to mandated elections in November 2008.

George Gholson, Chairman
Wallace Eddy, Vice-Chairman
Madeline Esteves, Secretary/Treasurer
Margaret Cortez, Council Member
Pauline Esteves, Council Member

It is my sincere hope that this acknowledgement of General Council actions will bring stability to the Tribe and I strongly encourage the Tribal Council to work together for the benefit of all tribal members.

Please contact Carol Rogers-Davis, Tribal Operations Officer at (916) 930-3794, should you have additional questions, or need further assistance.

Sincerely,

Troy Burdick
Superintendent

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Central California Agency
650 Capitol Mall, Suite 8-500
Sacramento, CA 95814-4710

IN REPLY REFER TO

NOV 1 0 2008

Mr. Joe Kennedy, Chairman
Timbisha Shoshone Tribe
P.O. Box 206
Death Valley, California 92328-0206

Dear Mr. Kennedy:

The purpose of this correspondence is to clarify that, for government-to-government purposes, the Bureau of Indian Affairs (BIA) continues to recognize Mr. Joe Kennedy, Mr. Ed. Beaman, Ms. Madeline Esteves, Ms. Virginia Beck, and Mr. Cleveland Casey, members of the Tribal Council of the Timbisha Shoshone Tribe that were in office prior to the General Council meeting of January 20, 2008, as the governing body of the Tribe. The results of subsequent Tribal elections have been acknowledged by the BIA. However, as explained below, these decisions to acknowledge Tribal action are not final for the Department of the Interior until the opportunity for appeal is exhausted. Consequently, until decisions regarding acknowledgment of recent Tribal election activities are final, the BIA continues to recognize Mr. Kennedy and Mr. Beaman, and the Council seated prior to January 20, 2008, for purposes involving the Federal government.

Previously, by correspondence dated February 29, 2008, I acknowledged the actions by the Timbisha Shoshone General Council at a Special General Council meeting held on January 20, 2008, wherein the General Council voted to ratify the November 13, 2007, General Election, seating Margaret Armitage and Margaret Cortez. Consequently, my decision of February 29, 2008 to acknowledge the results of January 20, 2008 meeting was appealed and therefore is not yet final.

On October 17, 2008, I provided my response to documentation submitted on September 26, 2008, regarding the removal of Mr. Joe Kennedy, Chairman of the Timbisha Shoshone Tribe, at a General Council meeting held September 20, 2008 and acknowledged the actions taken at the September 20, 2008 meeting. Consequently, my decision of October 17, 2008, is again subject to appeal in accordance with 25 CFR, Part 2.

Both of my prior decisions to acknowledge the General Council's election actions are subject to appeal in accordance with 25 CFR, Part 2, which provides that no decision I make is effective until the time for filing a notice of appeal has expired and no notice of appeal has been filed within the 30 day period for filing an appeal. If my decision is

timely appealed, the Regional Director must then render a written decision regarding the appeal within 60 days. A decision by the Regional Director may thereafter be appealed to the Interior Board of Indian Appeals (IBIA). Regulations at 43 CFR Part 4 govern appeals to the IBIA, and provide that no decision of a BIA official that is subject to appeal will be considered final so as to constitute agency action unless made effective by a decision and order of the IBIA.

To summarize, both my February 29, 2008 and October 17, 2008 decisions are subject to appeal to the Regional Director, Pacific Regional Office, Bureau of Indian Affairs, 2800 Cottage Way, Sacramento, California 95825 in accordance with regulations at 25 CFR part 2 (copy enclosed). Any notice of appeal must be filed in this office within 30 days of the date you receive this decision. The date of filing your notice of appeal is the date it is postmarked or the date it is personally delivered to this office. Your notice of appeal must include name, address and telephone number. It should clearly identify the decision to be appealed. If possible, attach a copy of the decision. The notice of appeal and the envelope which it is mailed should be clearly labeled "NOTICE OF APPEAL." The notice of appeal must list names and addresses of the interested parties known to you and certify that you have sent them copies of the notice. You must also send a copy of your notice to the Regional Director, at the address given above. If no timely appeal is filed, these decisions will become final for the Department of the Interior at the expiration of the appeal period. No extension of time may be granted for filing a notice of appeal.

If you have any questions, please do not hesitate to contact Carol Rogers-Davis, Tribal Operations Officer, at (916) 930-3794.

Sincerely,

Troy Burdick
Superintendent

cc: Regional Director, Pacific Region, Bureau of Indian Affairs
John M. Peebles, Esq.1001 Second Street, Sacramento, CA 95814
Mike Anderson, Esq. 300 Independence Ave., SE, Washington, D.C. 20003
Judith A. Shapiro, Esq. 6856 Eastern Ave., NW, Ste. 206, Washington, D.C 20012
Timbisha Shoshone Tribe, P.O. Box 206, Death Valley, CA 92328

EXHIBIT C

United States Department of the Interior

IN REPLY REFER TO:

BUREAU OF INDIAN AFFAIRS
Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825

DEC 0 4 2008

CERTIFIED MAIL NO. 7006 3450 0002 4647 5049
RETURN RECEIPT REQUESTED

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Fredericks Peebles & Morgan LLP
Attorneys at Law
1001 Second Street
Sacramento, CA 95814

CERTIFIED MAIL NO. 7006 3450 0002 4647 5056
RETURN RECEIPT REQUESTED

Judith A. Shapiro, Esq.
Attorney for Appellants
2001 N Street, Suite 100
Sacramento, CA 95814

CERTIFIED MAIL NO. 7006 3450 0002 4647 5032
RETURN RECEIPT REQUESTED

Darcie L. Houck, Esq.
Fredericks Peebles & Morgan LLP
Attorneys at Law
1001 Second Street
Sacramento, CA 95814

Subject: Timbisha Tribal Council Composition for Government-to-Government Purposes

Dear Mr. Peebles, Ms. Shapiro, and Ms. Houck:

The purpose of this correspondence is to inform you of my decision regarding the Notice of Appeal dated March 17, 2008, which was filed By John M. Peebles, Esq., Attorney for Ed Beaman, Virginia Beck, and Cleveland Casey, and the Notice of Appeal dated November 13, 2008, filed by Judith A. Shapiro, Esq., on behalf of Mr. Joe Kennedy, Ms. Madeline Esteves, and Ms. Pauline Esteves, pursuant to 25 CFR § 2.9 (a).

The Notice of Appeal dated March 17, 2008, concerned the Bureau of Indian Affairs, Central California Agency, Superintendent's (Superintendent) decision of February 29, 2008, acknowledging the results of

TAKE PRIDE IN AMERICA

a General Council meeting held on January 20, 2008 concerning the composition of the Tribal Council.

The Notice of Appeal dated November 13, 2008, concerned the Superintendent's October 17, 2008, decision to acknowledge the results of a General Council meeting held on September 20, 2008 concerning the composition of the Tribal Council.

Based on the record before me, I affirm the Superintendent's decision of October 17, 2008, to acknowledge the results of a Special meeting of the Timbisha Shoshone General Council held on September 20, 2008. Therefore, for the government to government purposes, I recognize the following individuals as the official tribal representatives of the Timbisha Tribal Council:

George Gholsen, Chairman
Wallace Eddy, Vice-Chairman
Madeline Esteves, Secretary/Treasurer
Margaret Cortez, Council Member
Pauline Esteves, Council Member

This decision affirming the Superintendent's decision of October 17, 2008, regarding the composition of the Tribal Council, renders moot the Notice of Appeal dated March 17, 2008, which was filed By John M. Peebles, Esq., Attorney for Ed Beaman, Virginia Beck, and Cleveland Casey.

By correspondence dated December 2, 2008, and December 3, 2008, a request was received from Darcie Houck on behalf of the members of the Tribal Council who were acknowledged by the Superintendent's decision of October 17, 2008, asking that my decision affirming the Superintendent's decision be made effective immediately pursuant to 25 CFR 2.6. Section 2.6 provides that decisions may be immediately finalized by the Department due to reasons relating to public safety, protection of trust resources, or other public exigency. Ms. Houck cites correspondence from the Assistant Secretary – Indian Affairs, dated June 29, 2007, which grants the Timbisha Shoshone Tribe status as an "Affected Indian Tribe" (AIT) pursuant to the Nuclear Policy Waste Act (NPWA). She includes declarations stating in paragraph 6 that: "In order to participate in the Yucca Mountain Project the Tribe must have a licensing system network ("LSN") website certified by the NRC immediately, and the Tribe must intervene and file its contentions regarding the Yucca Mountain Project with the NRC by December 22, 2008." Ms. Houck also declares that consultants are unsure whom they should consult with and will cease work on the Yucca Mountain Project if internal Tribal issues are not resolved.

In the June 29, 2007 correspondence from the Assistant Secretary, the Tribe was granted AIT status in the Yucca Mountain Project because effects of the Project may be both substantial and adverse to the Tribe. Based on the Tribe's AIT status, and the deadlines for participation in the Yucca Mountain Project, I find there are grounds for making my decision recognizing the composition of the Tribal Council immediately effective pursuant to 25 CFR 2.6 in order that the Tribe may protect trust resources through participation in the licensing process for the Yucca Mountain Project. Accordingly, the Department immediately recognizes the Tribal Council representatives listed above for government-to-government purposes.

This decision may be appealed to the Interior Board of Indian Appeal, 801 North Quincy Street, Arlington, Virginia 22203 in accordance with regulations in 43 CFR§ 4.310 4.340. Your Notice of appeal to the Board must be signed by you or your attorney and must be mailed within 30 days of the date you receive this decision. It should clearly identify the decision being appealed. If possible, attach a copy of the decision. You must send copies of your Notice of Appeal to (1) The Assistant Secretary - Indian Affairs, 4160 MIB, U.S. Department of the Interior, 1849 C Street, N. W. Washington, D.C. 20240, (2) each interested party known to you, and (3) this office. Your Notice of Appeal sent to the Board of Indian Appeals must certify that you have sent copies to these parties. If you file a Notice of Appeal, the Board of Indian Appeals will notify you of further appeal procedures. If no appeal is timely filed, this decision will become final for the Department of the Interior at the expiration of the appeal period. No extension of time may be granted for filing a Notice of Appeal.

Sincerely,

Dale Morris

Regional Director

cc: Superintendent, Central California Agency

ATTACHMENT B

AFFIDAVIT OF EARL P. EASTON

February 5, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARDS

In the Matter of	)	
	)	Docket No. 63-001-HLW
U.S. DEPARTMENT OF ENERGY	)	
	)	ASLBP Nos. 09-876-HLW-CAB01
(High-Level Waste Repository)	)	09-877-HLW-CAB02
	)	09-878-HLW-CAB03
	)	

AFFIDAVIT OF EARL P. EASTON
CONCERNING NRC STAFF'S RESPONSE TO CAL-NEPA-8

I, Earl P. Easton, do hereby state as follows:

1. I am employed as a Senior Advisor for Transportation of Radioactive Materials in the Division of Spent Fuel Storage and Transportation, Office of Nuclear Materials Safety and Safeguards at the U.S. Nuclear Regulatory Commission.

2. I have over 30 years of professional experience in engineering, including over 25 years in the area of transportation safety. My experience includes all aspects of radioactive material transportation and storage including, transportation and storage package design, health and safety issues, domestic and international regulation, environmental and risk studies, and public outreach. I have a Bachelors of Science in Chemical Engineering from the University of Maryland and completed Graduate Studies in Chemical Engineering at the University of Maryland.

3. As part of my responsibilities I contributed to the "U.S. Nuclear Regulatory Commission Staff's Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain," Sept. 5, 2008). I also provided technical support for the Staff's response to petitions for

hearings filed in connection with the proposed geologic repository at Yucca Mountain.

4. I provided technical support for the Staff's response to CAL-NEPA-8. In this regard, I reviewed the contention, the documents cited in the contention, and relevant portions of DOE's FSEIS. With respect to CAL-NEPA-8, I note that the contention argues that DOE should include in its FSEIS either separate calculations for clean-up costs at specific locations in California or a bounding calculation for clean-up costs based on potential contamination of (1) critical transportation system components; (2) contamination of urban and suburban areas; (3) contamination of natural resources; and (4) rendering of public lands unavailable for use.

5. Based on my review of the documents in paragraph 4, and my knowledge and experience in the area of radioactive material transportation, I conclude that California's assertion that the FSEIS should include separate calculations for clean-up costs at specific locations in California should have accounted for the very low probability of an accident occurring at any specific location, but does not. In addition, California should have accounted for the very low probability of all the factors in California's suggested bounding analysis occurring at one time and location. Because California did not account for these probabilities, it is not clear that either calculation would provide a more reasonable estimate of the clean-up costs for a transportation analysis than that included in the FSEIS.

6. I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

/RA/

Earl P. Easton

Executed in Rockville, MD
this 5th day of February, 2009

ATTACHMENT C

AFFIDAVIT OF JAMES R. WINTERLE

February 5, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARDS

In the Matter of	)	
	)	Docket No. 63-001-HLW
U.S. DEPARTMENT OF ENERGY	)	
	)	ASLBP Nos. 09-876-HLW-CAB01
(High-Level Waste Repository)	)	09-877-HLW-CAB02
	)	09-878-HLW-CAB03
	)	

AFFIDAVIT OF JAMES R. WINTERLE, P.G.
CONCERNING NRC STAFF'S RESPONSE TO TIM-NEPA-04

I, James R. Winterle, do hereby state as follows:

1. I am employed as Manager of the Performance Assessment group at the Center for Nuclear Waste Regulatory Analyses (CNWRA). The CNWRA is a contractor to the NRC staff ("Staff").

2. I hold B.S. (1995) and M.S. (1996) degrees in Hydrology from the University of Arizona College of Engineering and Mines. I have a broad range of experience in hydrologic sciences with specialization in groundwater flow and transport modeling and aquifer parameter estimation. I have worked at the Center for Nuclear Waste Regulatory Analyses since 1996, where my focus has been on saturated and unsaturated groundwater flow modeling and total-system performance assessments for the proposed Yucca Mountain repository. My experience with groundwater modeling includes development and calibration of a large-scale groundwater flow model for the Northern Amargosa Desert region in Central Nevada. This model was used to assess groundwater issues related to the Yucca Mountain project, including groundwater flow path analyses, effects of assumed recharge and boundary conditions, and aquifer and spring-flow response to potential future climate change. Results from this model have been published

in three CNWRA technical reports and have been presented to both the Advisory Committee on Nuclear Waste and the Nuclear Waste Technical Review Board. In my current role at the CNWRA, I was responsible for overseeing the development of the Total-System Performance Assessment Version 5.1 Code and User Guide. I have experience developing complex systems analysis models and in documenting validation and verification procedures for models and software. I am currently working on a project to update and conduct sensitivity studies with the Groundwater Availability Model for the Barton Springs Segment of the Edwards Aquifer in Central Texas. I am a licensed Professional Geoscientist in the State of Texas (License No. 2240).

3. I provided technical support for the Staff's response to petitions for hearings filed in connection with the proposed geologic repository at Yucca Mountain.

4. I provided technical support for the Staff's response to TIM-NEPA-04. In this regard, I reviewed the contention, the documents cited in the contention, and the relevant portions of DOE's EIS, FSEIS, and SAR, in particular FEIS Chapter 5, sections 5.3 and 5.4; FSEIS Chapter 5, sections 5.5.1 and 5.5.2; and SAR Chapter 2, Section 2.3.9. Based on my review of this information and my knowledge and experience modeling groundwater flow in the region of interest to this contention, I reached the conclusions regarding TIM-NEPA-04 discussed below in paragraph 5.

5. While TIM-NEPA-04 contends that the Saturated Zone Flow Model analysis provided in the contention is simple and relatively transparent, vital information that would be needed to judge the reasonableness of the underlying analysis is not provided. For example, no information is provided as to how the model for current conditions was calibrated to match observed water levels. The match, however, would likely be quite poor as key structural features in the model domain, such as the Solitario Fault and the area of low permeability to the north of the repository appear absent from the model. It is also not explained how these calculations demonstrate the significance of the issue raised in the contention.

6. I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

/RA/

James R. Winterle, P.G.

Executed in San Antonio, TX
this 5th day of February, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 63-001-HLW
U.S. DEPARTMENT OF ENERGY	)	
	)	ASLBP Nos. 09-876-HLW-CAB01
(High-Level Waste Repository)	)	09-877-HLW-CAB02
	)	09-878-HLW-CAB03
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC STAFF ANSWER TO INTERVENTION PETITIONS" in the above-captioned proceeding have been served on the following persons this 9th day of February, 2009, by Electronic Information Exchange.

CAB 01
William J. Froehlich, Chairman
Thomas S. Moore
Richard E. Wardwell
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
E-mail: wjf1@nrc.gov
tsm2@nrc.gov
rew@nrc.gov

CAB 02
Michael M. Gibson, Chairman
Lawrence G. McDade
Nicholas G. Trikouros
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
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E-mail: mmg3@nrc.gov
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ngt@NRC.GOV

CAB 03
Paul S. Ryerson, Chairman
Michael C. Farrar
Mark O. Barnett
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Donald J. Silverman, Esq.
Thomas A. Schmutz, Esq.
Thomas C. Poindexter, Esq.
Paul J. Zaffuts, Esq.
Alex S. Polonsky, Esq.
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