

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of)
)
U.S. DEPARTMENT OF ENERGY) Docket No. 63-001
)
(High Level Waste Repository)) February 9, 2009

**ANSWER OF THE STATE OF NEVADA TO
NUCLEAR ENERGY INSTITUTE'S PETITION TO INTERVENE**

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**ANSWER OF THE STATE OF NEVADA TO
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For the reasons set forth below, the State of Nevada (Nevada) believes the Nuclear Energy Institute's (NEI's) Petition to Intervene in this proceeding (Petition) should be denied for lack of standing, and that NEI's request for discretionary standing and intervention must be rejected. Furthermore, NEI's proposed safety contentions fail to comply with 10 C.F.R. § 2.309(f) and should all be rejected. Nevada takes no position on the admissibility of NEI's NEPA contentions.

I. INTRODUCTION AND RIGHT TO ANSWER

NEI timely filed its Petition on December 19, 2008, and Nevada's Answer is timely filed in accordance with the Commission's Notice of Hearing and Opportunity to Petition for Leave to Intervene (CLI-08-25, 73 Fed. Reg. 63029 (October 22, 2008)). However, in anticipation of a possible NEI objection that Nevada cannot oppose NEI's Petition because it is not a "party" within the meaning of 10 C.F.R. § 2.309(h)(1), the following is provided.

If NEI challenges Nevada's Answer arguing that Nevada is not a "party," Nevada and others opposing Yucca Mountain may be forced to litigate against an additional party (NEI) advocating the licensing of Yucca Mountain without being afforded any opportunity to object to that party's standing or contentions, which is patently unfair.

Such an unfair result is easily avoided by a fair and reasonable reading of the regulations. NEI's opposition to Nevada's right to file must depend on the proposition that, when answers to timely petitions are due, only DOE and NRC Staff will qualify as "parties" who are entitled to file answers under 10 C.F.R. § 2.309(h)(1) . *See* NEI's November 24, 2008 Petition to Certify Issue to the Commission. However, under the definition of "party" in 10 C.F.R. § 2.1001, Nevada, affected units of local government, and affected Indian Tribes are already designated as

"parties." NEI would wrongly assume that to be a "party," Nevada, affected units of local government, and affected Indian Tribes must be admitted as a party by some adjudicatory action, separate from and in addition to their designation as "parties" in 10 C.F.R. § 2.1001. However, 10 C.F.R. § 2.1001 defines "party" to include DOE, NRC Staff, Nevada, affected units of local government, and affected Indian Tribes, and *then* provides that "a person *admitted* under § 2.309 to the proceeding" would also be a "party" [emphasis added]. The Commission must have considered whether adjudicatory "admission" should be a precondition to party status and decided in the affirmative for "persons," but in the negative for DOE, NRC Staff, Nevada, affected units of local government, and affected Indian Tribes.

To be sure, there is a proviso at the end of the definition of party in § 2.1001 that Nevada, an affected unit of local government, or an affected Indian Tribes "files a list of contentions in accordance with the provisions of § 2.309." However, to be consistent with the preceding text, the proviso must be construed as a condition subsequent whereby party status, granted by regulation, is revoked by adjudicatory decision if no admissible contention is filed. Moreover, the proviso language uses the word "files," looking to the future. If NEI were correct that the proviso is a condition precedent, the language here would have been "filed." The Commission knows the difference between tenses, and the corresponding difference between conditions subsequent and conditions precedent, because it used the past tense "admitted" when it established when "persons" would qualify as parties in the definition.

NEI cannot offer any reason why the Commission would have wanted to preclude Nevada and the others from answering timely petitions and contentions, but then allow them to answer untimely ones filed after they are admitted as parties.¹

¹ The definition of "potential party" in 10 C.F.R. § 2.1001 is needed because "persons" who are not "parties" until they are admitted still need to participate as "potential parties" in the pre-application phase.

The text is clear: Nevada, affected units of local government, and affected Indian Tribes, are already designated as "parties" for the purpose of applying 10 C.F.R. § 2.309(h)(1), will remain so at least until after answers are due, and are entitled to file answers.

Finally, 10 C.F.R. § 2.309(h) provides that § 2.309(h)(1) applies "[u]nless otherwise specified by the Commission, the presiding officer, or the Atomic Safety and Licensing Board designated to rule on requests for hearings or petitions for leave to intervene." Therefore, even if Nevada is not now a party, it may request permission to file an answer, and Nevada so requests, based on its unique status as the host State, and the patent unfairness of being forced to litigate against an additional party (NEI) advocating the licensing of Yucca Mountain without being afforded any opportunity to object to that party's standing or contentions.

II. **NEI LACKS STANDING**

A. **Introduction**

NEI's argument for standing as of right is based solely on its members' interests; NEI does not assert standing based on its own interests (Petition at 1: "NEI has a clear and direct interest in this proceeding, based on its representation of the interests of its members...."). NEI's Petition includes arguments in support of standing as of right (at 1-7), but the facts supporting NEI's injury claims are found in attached affidavits of Rodney J. McCullum (of NEI), J.A. Stall (of the FPL Group Nuclear Companies), Dhiaa M. Jamil (of Duke Energy Carolinas, LLC), David H. Jones (of Southern Nuclear Operating Company, Inc.), Charles G. Pardee (of Exelon Nuclear and Exelon Generation Company, LLC), and Charles V. Sans Crainte (of Dairyland Power Cooperative). NEI's standing will fail unless these affidavits establish that one or more of NEI's members have standing.

Nevada does not question NEI's authorization to represent the members (and NRC licensees) represented in the affidavits. However, as explained below, Nevada believes that these NEI members have not demonstrated that they will suffer an injury in fact even arguably within the zone of interests protected by a statute in question. Establishing an injury in fact arguably within the zone of interests protected by a statute in question is an essential element of judicial standing in administrative cases. *Association of Data Processing Service Organizations v. Camp*, 397 U.S. 150 (1970). Because the Commission applies contemporaneous judicial standing concepts in making its own standing determinations, *Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit 1)*, CLI-83-25, 18 NRC 327, 332 (1983), NEI's standing fails.

B. NEI's Stated Interests

Mr. McCullum explains in his affidavit that "delay in licensing of the proposed high level waste repository, or denial of the DOE license application, will impose on nuclear licensees the ongoing risks, burdens and costs associated with interim onsite storage of used reactor fuel, as well as delays in releasing the sites of decommissioned power reactors." Close reading of the affidavit indicates that the "ongoing risks, burdens and costs" supposedly arising from delay are all purely economic in nature (McCullum affidavit at ¶¶ 13, 14, and 15). It is alleged that "[o]verly conservative design elements of the repository will also create occupational risks and exposures for workers at operating reactors and fuel storage installations, as well as workers at the Yucca Mountain site, and will unduly consume the Nuclear Waste Fund" (McCullum affidavit at ¶ 22). The "delays in releasing the sites of decommissioned power reactors" are said to result in added economic costs, "small occupational radiological exposures," and delay in reuse of the site for other, unspecified beneficial purposes (McCullum affidavit at ¶ 16).

Mr. Stall's affidavit explains that failure to license Yucca Mountain, or any delay in licensing, "will negatively impact the FPL Group Nuclear Companies" because these will "increase the duration of onsite storage, with its related operational and financial impacts, occupational radiation exposures, and security requirements" (Stall affidavit at ¶ 9). The "operational impacts" and "security requirements" apparently refer to "ongoing surveillance and maintenance activities" (Stall affidavit at ¶ 7) which cost significant amounts of money (Stall affidavit at ¶ 8). Mr. Stall also notes that "lack of an offsite disposal facility will delay full decommissioning of the power reactor sites and delay release of the site for unrestricted use, for as long as the fuel must remain at ISFSIs" (Stall affidavit at ¶ 9). Moreover, allegedly overly conservative aspects of the repository design are said to "increase the licensing uncertainty of the project, as well as the ultimate costs of construction" with "implications for expenditures by DOE from the Nuclear Waste Fund" (Stall affidavit at ¶ 10). Mr. Jamil's affidavit explains that failure to license Yucca Mountain, or a delay in licensing, will "increase the duration of onsite storage, with its related operational, environmental, and financial impacts, occupational radiation exposures, and security requirements" (Jamil affidavit at ¶ 7). Also, "lack of an offsite disposal facility will delay full decommissioning of the power reactor sites, and delay release of the sites for unrestricted use" (*id.*). Mr. Jamil adds nothing to what Mr. Stall says, except for an unexplained and unspecified reference to "environmental impacts" arising from onsite storage.

Mr. Jones' affidavit adds nothing to what Mr. Stall says (compare Jones affidavit ¶¶ 7 and 8 with Stall affidavit at ¶¶ 9 and 10). Mr. Pardee's and Mr. Sans Crainte's affidavits are similar to Mr. Jamil's affidavit (compare Pardee affidavit at ¶¶ 7 and 8 with Jamil affidavit at ¶¶ 6 and 7 and Sans Crainte affidavit at ¶¶ 6 and 7).

In sum, taking into account all of the affidavits, NEI (through its members) claims that denial of the Yucca Mountain application, or a delay in licensing of Yucca Mountain, will cause (1) increased economic costs associated with extended on-site storage of used reactor fuel, including costs associated with ongoing surveillance, maintenance and security, (2) increased occupational exposures on reactor sites associated with extended on-site storage of used reactor fuel, (3) unspecified and unexplained environmental impacts associated with extended storage of used reactor fuel, and (4) delays in decommissioning reactor sites, which will lead to increased economic costs, increased occupational exposures, and delay in reuse of the sites. Overly conservative design elements on the repository will allegedly (1) increase occupational exposures on reactor sites and at Yucca Mountain, (2) unduly consume the Nuclear Waste Fund, and (3) increase licensing uncertainty.

It is easy to understand NEI's proposition that denial of the application or delay in licensing will cause economic injury to NEI members arising from the need to pay for extended storage of used reactor fuel on reactor sites. But, as explained below, economic injury cannot establish standing in an NRC adjudicatory proceeding. *See* Section C, *infra*. Moreover, a brief reference to unspecified "environmental impacts" from extended storage of used reactor fuel does not establish any specific injury in fact to any on-site reactor licensee. *First Energy Nuclear Operating Company (Beaver Valley Power Station, Units I and 2, et al)*, CLI-06-02, 63 NRC 9 (2002) (statement that unenforceability of license conditions would adversely affect "important rights relating to generation, transmission, and distribution services" was too vague and general to support standing). *See also, Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station)*, LBP-93-23, 38 NRC 200, 246 (1993).

It may be that denial of the application or a delay in licensing will increase the costs of reactor decommissioning, although it would seem equally likely that decommissioning delays will save money because of the time value of money. However, *First Energy* teaches that a possible delay in reuse of the reactor site does not, in itself, without explanation, constitute an injury to the on-site licensee. Moreover, there is no way to know whether, when the time comes, any of these licensees will want to release their sites for non-nuclear uses. For example, Mr. Sans Crainte's affidavit includes no information about Dairyland Cooperative's future plans for the LaCrosse Boiling Water Reactor site, a notable omission because the reactor was decommissioned years ago. Thus, any injuries associated with delays in reuse of the sites covered by the affidavits would be purely abstract and hypothetical and insufficient to support standing. *International Brotherhood of Teamsters v. Transportation Security Administration*, 429 F.3d 1130 (D.C. Cir. 2005) (no standing to challenge regulation making those convicted of certain crimes ineligible for jobs when petitioner failed to present evidence that any member was actually disqualified by the rule); *Ohio Edison Company (Perry Nuclear Power Plant, Unit 1) and Cleveland Electric Illuminating Company and Toledo Edison Company (Perry Nuclear Plant, Unit 1, Davis-Besse Nuclear Power Station, Unit 1)*, LBP-91-38, 34 NRC 47 (1991).

NEI claims that overly conservative design elements could increase construction costs and unduly consume the Nuclear Waste Fund, but there is no explanation how this claim would cause any economic impact on nuclear licensees. In particular, there is no allegation that increased construction costs or undue consumption of the Nuclear Waste Fund would lead to an increased in Nuclear Waste fees paid into the Nuclear Waste Fund. *First Energy* teaches that increasing licensing uncertainty does not, in itself, without further explanation, constitute any injury to any member of NEI.

NEI (through its members) also claims that a denial of the application or a delay in licensing, and inclusion of allegedly over conservative design elements, will increase occupational exposures at reactor sites and at Yucca Mountain. Apart from whether NEI's claims may be correct, NEI does not explain how occupational exposures to workers will injure NEI's members who are not human beings but legal entities who cannot receive any radiation dose. Moreover, the Petition does not include any affidavit from any worker authorizing NEI to represent his or her interests, if that were even possible, especially with respect to workers at the Yucca Mountain site. NRC law is clear that an entity may not derive standing from the interests of another without express authorization. *Florida Power and Light Company (St. Lucie Nuclear Power Plant, Units 1 and 2)*, CLI-89-21, 30 NRC 325, 229-30 (1989).

NEI (and its members) typically conflate effects of denial or delay in licensing or excessive design conservatism with injuries to NEI or its members. Not all effects will result in injuries. Neither increased uncertainty whether Yucca Mountain will be licensed, nor a delay in licensing, nor an additional expenditure from the Nuclear Waste Fund, constitutes an injury. Each of these is, at best, an intermediate cause of some other possible injury that must be described. With the one exception involving economics noted below, NEI has not tied these effects to actual, specific injuries to NEI members. Considered in the most generous light, the Petition and affidavits show only one specific injury to NEI (through its members) – an economic injury (i.e., increased economic costs) associated with denial of the application or delay in licensing, arising from the need for extended on-site storage of used reactor fuel and (possibly) delays in decommissioning. No other specific injury is established or even alleged. Thus NEI's standing depends entirely on this purely economic injury, which is unlinked to any radiological or environmental harm.

C. **NEI's Purely Economic Injury Does Not Fall in the Zone of Interests Protected by the Statutes in Question**

NEI mentions three statutes as relevant in applying the "zone of interests" test – the Atomic Energy Act of 1954, as amended (AEA), the National Environmental Policy Act of 1969, as amended (NEPA), and the Nuclear Waste Policy Act of 1982, as amended (NWP) (Petition at 5). Unfortunately for NEI, the Commission has uniformly held that a bare economic injury is outside of the zone of interests arguably protected by the AEA. *International Uranium (USA) Corp. (Receipt of Material from Tonawanda, NY)*, CLI-98-23, 48 NRC 259, 265 (1998); *Quivira Mining Co. (Ambrosia Lake Facility, Grants, NM)*, CLI-98-11, 48 NRC 1, 9, 11 (1998), *aff'd sub nom. Envirocare of Utah v. NRC*, 194 F.3d 72 (D.C. Cir. 1999); *Virginia Electric and Power Co. (North Anna Power Station, Units 1 and 2)*, ALAB-342, 4 NRC 98, 105-6 (1976). Likewise, the Commission has uniformly held that a bare economic injury, which is unlinked to any environmental harm, is outside of the zone of interests arguably protected by NEPA. *E.g., Quivira Mining Co. (Ambrosia Lake Facility, Grants, NM)*, CLI-98-11, *supra* at 8.

This leaves NWP. Nevada does not question NEI's argument that its economic injury is within the zone of interests arguably protected by NWP. However, NEI ignores another critical aspect of the "zone of interests" test. The zone of interests must pertain to "the statute...in question." *Association of Data Processing Service Organizations v. Camp*, *supra* at 153. In *Air Courier Conference v. American Postal Workers Union*, 498 U.S. 517 (1991), the Supreme Court held that the only statute relevant to the zone of interests test (the "statute...in question") is the statute that is the basis (or one of the bases) for petitioner's challenge on the merits. *Id* at 524, 529. In NRC practice a petitioner's challenge on the merits is defined by its contentions, and none of NEI's nine contentions alleges any violation of the NWP. Therefore, NEI cannot use NWP to satisfy the zone of interests test.

In sum, NEI has not established or alleged any concrete injury in fact to any interest arguably protected by the statutes in question. NEI's purely economic injury is outside of the zone of interests arguably protected by the AEA and NEPA, and while NEI's economic injury is within the zone of interests arguably protected by NWPA, NEI fails to offer any contention that would serve to make NWPA a "statute...in question" and, as a result, NWPA is irrelevant in applying the zone of interests test.

III. **NONE OF NEI'S SAFETY CONTENTIONS ARE ADMISSIBLE**

A. **Introduction**

NEI submitted six safety contentions. As explained below, none of them satisfies all of the requirements of 10 CFR § 2.309(f) and all must of them must be rejected.

The Commission is clear that "[w]ith the exception of NEPA issues, the sole focus of the hearing is on whether the application satisfies NRC regulatory requirements..." 54 Fed. Reg. 33168, 33171 (August 11, 1989). *See also Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2)*, LBP-82-106, 16 NRC 1649, 1656 (1982) (in the absence of a regulatory gap, the failure to cite a violation of the regulations will result in rejection of the contention). Thus statements in various NEI contentions to the effect that aspects of the LA are too conservative, or will increase licensing uncertainty and delay, do not in themselves raise material issues because no violation of any NRC requirement is asserted.

Moreover, with specific reference to ALARA contentions, the Commission is clear that "a licensee's actions do not violate the ALARA principle simply because some way can be identified to reduce radiation exposures further." *Yankee Atomic Electric Company (Yankee Nuclear Power Station)*, CLI-96-1, 43 NRC 1 at 6 (1996). The ALARA definition in 10 CFR § 20.1003 is clear that proposed dose reductions must be "consistent with the purpose for which

the licensed activity is undertaken," and consider (among other things) "the economics of improvements in relation to benefits to the public health and safety," and "other societal and socioeconomic considerations."

These legal principles will be applied below.

B. NEI-SAFETY-01

NEI-SAFETY-01 alleges that the license application (LA) is "inconsistent" with the ALARA principle because it fails to permit direct disposal of commercial spent fuel (SNF) in dual purpose canisters (DPCs) (Petition at 9). *See also* Petition at 11 ("NEI's contention that the LA's failure to permit direct disposal of SNF in DPCs is inconsistent with ALARA principles is based on the following....")

a. Statement of Issue (10 CFR § 2.309(f)(1)(i))

Without prejudice to other arguments, Nevada has no legal objection.

b. Brief Statement of Basis (10 CFR § 2.309(f)(1)(ii))

Without prejudice to other arguments, Nevada has no legal objection.

c. Scope of the Proceeding (10 CFR § 2.309(f)(1)(iii))

NEI is proposing to require that DOE be compelled to accept a category of waste form (SNF in DPCs) that is not included in the LA and DOE's Total Systems Performance Assessment (TSPA). This would be like a contention in a nuclear power reactor licensing proceeding that the reactor must be allowed to operate at a power level higher than in the application, or a contention in a licensing proceeding for a Class A low-level radioactive waste facility that the applicant must be compelled to accept Classes B and C as well. The flaw in all of these is that they do not address what is proposed in the application, but what might be proposed in the future. Contentions addressed to future plans or changes in the application are

not admissible and beyond the scope of the proceeding within the meaning of 10 CFR § 2.309(f)(1)(iii). *Duke Energy Corporation (McGuire Nuclear Station, Units 1 and 2)*, CLI-02-14, 55 NRC 278, 292-93 (2002).

d. Materiality (10 CFR § 2.309(f)(1)(iv))

To the extent NEI raises issues that, as explained in Section c., above, are outside the scope of this proceeding, it also raises issues that are not material to the findings that the NRC must make.

e. Adequate Basis (10 CFR § 2.309(f)(1)(v))

NEI-SAFETY-01 lacks an adequate basis, in violation of 10 CFR § 2.309(f)(1)(v).

There are several reasons for this.

(1) NEI-SAFETY-01 is supported by the affidavit of Drs. Kozak, Gutherman, and Loftin (Petition, Attachment 7). It is clear from both the Petition and Attachment 7 (and simple logic) that there is no technical basis for the contention unless NEI establishes that DPCs can, in fact, be disposed of at Yucca Mountain in compliance with NRC's post closure dose requirements in 10 CFR Part 63 (and EPA's underlying requirements) (Petition at 9 and Attachment 7 at ¶¶ 60-70). The LA states that "[c]urrently licensed DPCs have not been shown to be suitable for disposal purposes" (Attachment 7 at ¶ 62), and NEI concedes that "DOE has neither developed nor published such an evaluation" (*Id.*). Attachment 7 makes no effort to remedy this serious safety gap, e.g., by taking DOE's TSPA and modifying it to include DPCs, likely because the complexity of the DOE TSPA made this impossible. Instead, Attachment 7 proposes to jettison DOE's TSPA entirely and replace it with an entirely different EPRI performance assessment, and then use this entirely new performance assessment to calculate post-closure doses with DPCs (Attachment 7 at ¶¶ 63-70). *See also* EPRI Report No. 1018051,

referenced in Attachment 7, at 6-1 ("The latest version, IMARC 9 [EPRI's total systems performance code], is used here for the evaluation of DPC disposal"). This makes NEI-SAFETY-01 breathtaking in technical scope and complexity, and its proponents and opponents would be required to defend or oppose a total systems performance assessment different from the one in the LA, engaging scores of experts and involving hundreds of scientific disciplines, and requiring vast litigation resources and time. However, more fundamentally, Attachment 7 has no discussion of uncertainty, or quality assurance, and the most that Attachment 7 concludes is that only very minor differences exist between DPC disposal and TAD disposal "for a variety of scenarios, assumptions, and sensitivity analyses" (Attachment 7 at ¶ 70). Notably absent from Attachment 7 is any statement or demonstration that EPRI's evaluation of disposal of DPCs complies fully with the performance assessment and quality assurance requirements in Part 63. Moreover, the EPRI evaluation only included "some currently licensed DPCs" (Attachment 7 at ¶ 63). Consequently, there is not adequate support for the statement in the Petition (at 12) that "[t]he proposed repository would meet all performance requirements if DPCs were directly disposed of in the repository" and, without such support, NEI-SAFETY-01 lacks an adequate basis.

(2) In *Yankee Atomic Electric Company, supra*, petitioner contended that the SAFSTOR decommissioning option should be used as opposed to the modified DECON option selected by the licensee. The contention was based on application of the ALARA principle and a 900 person-rem estimated collective dose saving if SAFSTOR were used, based on dose evaluations in a generic environmental impact statement on decommissioning. Because of the uncertainties (including uncertainties in projecting doses decades into the future), and the general acceptability of both the SAFSTOR and DECON options under the Commission's rules, the

Commission held that "a challenge to the Licensee's choice of the modified DECON option instead of SAFSTOR cannot be based solely on differences in estimated collective occupational dose on the order of magnitude of the estimates in the [decommissioning] GEIS." *Yankee Atomic Electric Company, supra* at 6.

NEI-SAFETY-01 very closely resembles the contention at issue in *Yankee Atomic Electric Company*. NEI does not contend that DOE's rejection (for now) of direct disposal of DPCs is unlawful, apart from application of ALARA. Therefore, under NEI-SAFETY-01, we have two generally acceptable disposal proposals, DOE's and NEI's, and estimated occupational exposures from either alternative will necessarily be uncertain because exposures will occur decades in the future. The estimated difference in collective dose between the two acceptable disposal alternatives is 822 person-rem (Attachment 7 at ¶ 53). (Paragraph 54 mentions possible dose savings from low-level waste processing and disposal, but no dose estimate is offered, and Attachment 7 offers no further information). Thus NEI's projected dose savings are less than the savings dismissed as inconsequential in *Yankee Atomic Electric Company*. If, in *Yankee Atomic Electric Company*, a challenge to the Licensee's choice of the modified DECON option instead of SAFSTOR could not be based solely on estimated differences in estimated collective occupational dose on the order of magnitude of 900 rem, then it follows that a challenge to DOE's choice of its TAD canister instead of DPCs cannot be based solely on estimated differences in estimated collective dose estimates on the order of magnitude of 822 rem.

(3) As stated above, a licensee's actions do not violate the ALARA principle simply because some way can be identified to reduce radiation exposures further, and the definition ALARA provides that any proposed dose reductions must be "consistent with the purpose for which the licensed activity is undertaken," and consider (among other things) "the economics of

improvements in relation to benefits to the public health and safety," and "other societal and socioeconomic considerations." This requires a trade-off or cost-benefit analysis that compares the value of reductions in dose (and other possible benefits) with economic and other costs. NEI makes no effort to establish that its estimated dose savings would be justified taking into consideration economic and other costs. This omission makes the basis fatally deficient.

If, for ALARA evaluation purposes, each person-rem is valued at \$2,000 (as provided in "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," NUREG/BR-0058, Revision 4, at 31), NEI's estimated dose savings are worth less than \$2,000,000. This is less than the likely cost just to amend the LA to include DPCs and to litigate the acceptability of DPCs in the hearing. This simple calculation highlights the seriousness of the deficiency in NEI's basis, for it emphasizes that NEI's failure to establish that its estimated dose savings would be justified taking into consideration economic and other costs is not merely an academic point.

f. Genuine dispute (10 CFR § 2.309(f)(1)(vi))

Without prejudice to other arguments, Nevada has no legal objection.

C. NEI-SAFETY-02

NEI-SAFETY-02 alleges that DOE's surface facility design capability to receive not less than 90% of SNF in TADs is inconsistent with ALARA.

a. Statement of Issue (10 CFR § 2.309(f)(1)(i))

Without prejudice to other arguments, Nevada has no legal objection.

b. Brief Statement of Basis (10 CFR § 2.309(f)(1)(ii))

Without prejudice to other arguments, Nevada has no legal objection.

c. Scope of the Proceeding (10 CFR § 2.309(f)(1)(iii))

NEI-SAFETY-02 has the same problem here as NEI-SAFETY-01. DOE proposes to accept only a certain amount of SNF for repackaging at Yucca Mountain surface facilities, and NEI proposes a larger amount. This is like a contention in a nuclear power reactor licensing proceeding that the reactor must be allowed to operate at a power level higher than in the application, or a contention in a licensing proceeding for a Class A low-level radioactive waste facility that the applicant must be compelled to accept Classes B and C as well. The flaw in all of these is that they do not address what is proposed in the application, but what might be proposed in the future. Contentions addressed to future plans or changes in the application are not admissible and beyond the scope of the proceeding within the meaning of 10 CFR § 2.309(f)(1)(iii). *Duke Energy Corporation (McGuire Nuclear Station, Units 1 and 2)*, CLI-02-14, 55 NRC 278, 292-93 (2002).

d. Materiality (10 CFR § 2.309(f)(1)(iv))

To the extent NEI raises issues that, as explained in Section c., above, are outside the scope of this proceeding, it also raises issues that are not material to the findings that the NRC must make.

e. Adequate Basis (10 CFR 2.309(f)(1)(v))

NEI-SAFETY-02 also lacks the adequate basis required by 10 CFR 2.309(f)(1)(v). The Commission is clear that "a licensee's actions do not violate the ALARA principle simply because some way can be identified to reduce radiation exposures further." *Yankee Atomic Electric Company (Yankee Nuclear Power Station)*, CLI-96-1, 43 NRC 1 at 6 (1996). The ALARA definition in 10 CFR § 20.1003 is clear that proposed dose reductions must be "consistent with the purpose for which the licensed activity is undertaken," and consider (among

other things) "the economics of improvements in relation to benefits to the public health and safety," and "other societal and socioeconomic considerations." This requires a trade-off or cost-benefit analysis that compares the value of reductions in dose (and other possible benefits) with economic and other costs.

Attachment 8 to the Petition, an affidavit of Messrs. Gutherman and Loftin, offers the sole basis for compliance with 10 CFR 2.309(f)(1)(v). This affidavit concludes simply (at ¶ 46) that NEI's proposal would be a "lower dose operation." But the Commission is clear that the ALARA principle is not violated simply because some way can be identified to reduce radiation exposures further. *Yankee Atomic Electric Company, supra* at 6. Because Attachment 8 offers neither an estimate of dose savings, nor any discussion of economic and other costs, it does not provide an adequate basis for NEI-SAFETY-02, and the requirements of 10 CFR 2.309(f)(1)(v) are not satisfied.

f. Genuine dispute (10 CFR § 2.309(f)(1)(vi))

Without prejudice to other arguments, Nevada has no legal objection.

D. NEI-SAFETY-03

NEI-SAFETY-03 alleges that DOE's excessively conservative seismic design of the vertical aging overpack system violates ALARA.

a. Statement of Issue (10 CFR § 2.309(f)(1)(i))

Without prejudice to other arguments, Nevada has no legal objection.

b. Brief Statement of Basis (10 CFR § 2.309(f)(1)(ii))

Without prejudice to other arguments, Nevada has no legal objection.

c. Scope of the Proceeding (10 CFR § 2.309(f)(1)(iii))

Without prejudice to other arguments, Nevada has no legal objection.

d. Materiality (10 CFR 2.309(f)(1)(iv))

The contention may be interpreted to allege that the allegedly excessively conservative design must be rejected simply because it is just that, i.e., it "goes beyond the necessary safety margin," and "could increase licensing uncertainty and delay" (Petition at 17). However these statements do not raise any material issue because adding safety margin and increasing licensing uncertainty and delay do not violate any NRC requirement or raise any significant safety problem. 54 Fed. Reg. 33168, 33171 (August 11, 1989); *Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2)*, LBP-82-106, 16 NRC 1649, 1656 (1982).

e. Adequate Basis (10 CFR 2.309(f)(1)(v))

The safety basis offered to support the alleged ALARA violation is virtually non-existent. The most the Petition says is that DOE's approach "may lead to unnecessary occupational doses at the operational repository." But the mere statement that some untoward result "may" occur is an insufficient basis. *Dominion Nuclear Connecticut (Millstone Nuclear Power Station Unit no, 2)*, LBP-03-12, 58 NRC 75, 93 (2003) ("obvious potential for offsite consequences" may be sufficient for standing but is an insufficient basis for a contention).

The ALARA allegation in NEI-SAFETY-03 is supported by Attachment 10 to the Petition, an affidavit of Mr. Gutherman who offers the opinion that DOE's design would likely add an additional total estimated occupational dose of 200 person-rem (Attachment 10 at ¶ 10). Nothing is said about costs or other considerations. "[A] licensee's actions do not violate the ALARA principle simply because some way can be identified to reduce radiation exposures further." *Yankee Atomic Electric Company (Yankee Nuclear Power Station)*, CLI-96-1, 43 NRC 1 at 6 (1996). For example, DOE's seismic design, if excessively conservative as NEI claims, will add some risk reduction to the public in the event of a large earthquake beyond what NEI's

proposed redesign would offer, and this would have to be weighed (along with other costs) against the small reduction in occupational dose.

If, for ALARA evaluation purposes, each person-rem is valued at \$2,000 (as provided in "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," NUREG/BR-0058, Revision 4, at 31), NEI's estimated dose savings are worth less than \$500,000. This is less than the likely cost just to amend the LA to include NEI's proposed design and to litigate the new design in the hearing. This simple calculation highlights the seriousness of the deficiency in NEI's basis, for it emphasizes that NEI's failure to establish that its estimated dose savings would be justified taking into consideration economic and other costs is not merely an academic point.

In sum, NEI-SAFETY-03 suffers from the same defects in basis as NEI-SAFETY-01 and NEI-SAFETY-02. A licensee's actions do not violate the ALARA principle simply because some way can be identified to reduce radiation exposures further, and ALARA requires a trade-off or cost-benefit analysis that compares the value of reductions in dose (and other possible benefits) with economic and other costs. This trade-off or cost-benefit analysis is entirely missing here. Moreover, the estimated dose reduction is far less than the 900 person-rem dismissed as insufficient in *Yankee Atomic Electric Company, supra*.

f. Genuine dispute (10 CFR § 2.309(f)(1)(vi))

Without prejudice to other arguments, Nevada has no legal objection.

E. NEI-SAFETY-04

NEI-SAFETY-04 alleges that DOE's excessively conservative post-closure analysis of the consequences of an igneous (volcanic) intrusive event "could contribute to licensing uncertainty and could delay the development of the repository." (Petition at 23).

a. Statement of Issue (10 CFR § 2.309(f)(1)(i))

Without prejudice to other arguments, Nevada has no legal objection.

b. Brief Statement of Basis (10 CFR § 2.309(f)(1)(ii))

Without prejudice to other arguments, Nevada has no legal objection.

c. Scope of the Proceeding (10 CFR § 2.309(f)(1)(iii))

Without prejudice to other arguments, Nevada has no legal objection.

d. Materiality (10 CFR 2.309(f)(1)(iv))

NEI-SAFETY-04 is frivolous on its face and inadmissible because no violation of any NRC requirement is alleged (or supported) and, therefore, no material issue is raised. "With the exception of NEPA issues, the sole focus of the hearing is on whether the application satisfies NRC regulatory requirements...."54 Fed. Reg. 33168, 33171 (August 11, 1989). *See also Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2)*, LBP-82-106, 16 NRC 1649, 1656 (1982). Contributing to licensing uncertainty and delay does not violate any NRC requirement—if it did NEI's filing of its Petition would itself be prohibited. Likewise, offering more proof than a "reasonable expectation," leading to a "perception of reduced licensing margin," and adding to "operational complexity, occupational exposures, and economic and environmental costs associated with interim used fuel storage" (Petition at 25-26) violate nothing.

e. Adequate Basis (10 CFR 2.309(f)(1)(v))

Without prejudice to other arguments, Nevada has no legal objection.

f. Genuine dispute (10 CFR § 2.309(f)(1)(vi))

Without prejudice to other arguments, Nevada has no legal objection.

F. **NEI-SAFETY-05**

NEI-SAFETY-05 alleges that DOE's excessively conservative post-closure criticality analysis 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." (Petition at 31).

a. Statement of Issue (10 CFR § 2.309(f)(1)(i))

Without prejudice to other arguments, Nevada has no legal objection.

b. Brief Statement of Basis (10 CFR § 2.309(f)(1)(ii))

Without prejudice to other arguments, Nevada has no legal objection.

c. Scope of the Proceeding (10 CFR § 2.309(f)(1)(iii))

Without prejudice to other arguments, Nevada has no legal objection.

d. Materiality (10 CFR 2.309(f)(1)(iv))

NEI-SAFETY-05 is almost as frivolous as NEI-SAFETY-04, for it primarily harps on how DOE's analysis is "overly conservative," "increases licensing uncertainty," "would also result in unnecessary design and operational costs," and "could create additional impacts on the nuclear industry as a result of delays in licensing new... 'TAD' canister designs," none of which constitute a violation of any NRC requirement. In these respects, NEI-SAFETY-05 raises no material issue because no violation of any NRC requirement is involved.

e. Adequate Basis (10 CFR 2.309(f)(1)(v))

Almost as a kind of "throw-away" argument, NEI-SAFETY-05 alleges that DOE's "overly conservative analysis... creates a de facto expectation that disposal control rod assemblies... be inserted into some fuel assemblies at the nuclear power plants," resulting in "increased occupational dose to workers who must install these devices and is not consistent with

the principles of ALARA" (Petition at 32). Attachment 12, an affidavit by Dr. Redmond II offered as the sole support for NEI-SAFETY-05, says only that inserting disposal control rod assemblies into fuel assemblies "exposes workers to increased radiation exposure" (Attachment 12 at ¶ 4). This is an insufficient basis for the contention because, as noted above, "a licensee's actions do not violate the ALARA principle simply because some way can be identified to reduce radiation exposures further." *Yankee Atomic Electric Company (Yankee Nuclear Power Station)*, CLI-96-1, 43 NRC 1 at 6 (1996).

f. Genuine dispute (10 CFR § 2.309(f)(1)(vi))

Without prejudice to other arguments, Nevada has no legal objection.

G. **NEI-SAFETY-06**

NEI-SAFETY-06 alleges that DOE's proposal to install titanium drip shields as a post-closure engineering barrier is not necessary to meet regulatory requirements and that installation of them will violate ALARA.

a. Statement of Issue (10 CFR § 2.309(f)(1)(i))

Without prejudice to other arguments, Nevada has no legal objection.

b. Brief Statement of Basis (10 CFR § 2.309(f)(1)(ii))

Without prejudice to other arguments, Nevada has no legal objection.

c. Scope of the Proceeding (10 CFR § 2.309(f)(1)(iii))

Without prejudice to other arguments, Nevada has no legal objection.

d. Adequate Basis (10 CFR 2.309(f)(1)(iv))

Without prejudice to other arguments, Nevada has no legal objection.

e. Adequate Basis (10 CFR 2.309(f)(1)(v))

NEI-SAFETY-06 lacks an inadequate basis, in violation of 10 CFR § 2.309(f)(1)(v).

There are several reasons for this.

(1) NEI-SAFETY-06 is supported by the affidavit of Drs. Kozak, Apted, and King (Petition, Attachment 13). It is clear from both the Petition and Attachment 13 (and simple logic) that there is no technical basis for the contention unless NEI establishes that Yucca Mountain without drip shields will, in fact, fully comply with NRC's post closure dose requirements in 10 CFR Part 63 (and EPA's underlying requirements) (Petition at 35 and Attachment 13 at ¶¶ 25-71). Attachment 13 makes no effort to establish this by taking DOE's TSPA and modifying it to eliminate drip shields, likely because the complexity of the DOE TSPA made this impossible. Instead, Attachment 13 proposes to jettison DOE's TSPA entirely and replace it with an entirely different EPRI performance assessment, and then use this entirely new performance assessment to calculate post-closure doses without drip shields (Attachment 13 at ¶¶ 70-71). This makes NEI-SAFETY-06 breathtaking in technical scope and complexity, and its proponents and opponents would be required to defend or oppose a total systems performance assessment different from the one in the LA, engaging scores of experts and involving hundreds of scientific disciplines, and requiring vast litigation resources and time.

However, more fundamentally, Attachment 13 has no discussion of uncertainty, or quality assurance, and notably absent from Attachment 13 is any statement or demonstration that EPRI's performance assessment with the no drip shield option complies fully with the performance assessment and quality assurance requirements in Part 63. Consequently, there is not adequate support for the statement in the Petition (at 38) that "[w]ithout drip shields, the

repository will comply with regulatory requirements with significant performance margin." Yet, without adequate support for such a statement, NEI-SAFETY-06 lacks an adequate basis.

(2) Attachment 13 (at ¶ 72) relies on DOE's estimate that installing drip shields will result in an occupational exposure of 975 person-rem. Thus, NEI projects a dose saving of 975 person-rem if drip shields are eliminated from the design.

In *Yankee Atomic Electric Company, Yankee Atomic Electric Company (Yankee Nuclear Power Station)*, CLI-96-1, 43 NRC 1 (1996), petitioner contended that the SAFSTOR decommissioning option should be used as opposed to the modified DECON option selected by the licensee. The contention was based on application of the ALARA principle and a 900 person-rem estimated collective dose saving if SAFSTOR were used, based on dose evaluations in a generic environmental impact statement on decommissioning. Because of the uncertainties (including uncertainties in projecting doses decades into the future), and the general acceptability of both the SAFSTOR and DECON options under the Commission's rules, the Commission held that "a challenge to the Licensee's choice of the modified DECON option instead of SAFSTOR cannot be based solely on differences in estimated collective occupational dose on the order of magnitude of the estimates in the [decommissioning] GEIS." *Yankee Atomic Electric Company, supra* at 6.

Like NEI-SAFETY-01, NEI-SAFETY-06 very closely resembles the contention at issue in *Yankee Atomic Electric Company*. NEI does not contend that DOE's inclusion of drip shields is unlawful, apart from application of ALARA. Therefore, under NEI-SAFETY-06, we have two generally acceptable repository design proposals, DOE's and NEI's, and estimated occupational exposures will necessarily be uncertain because exposures will occur decades in the future. NEI's projected dose savings are on the same order as the savings dismissed as

inconsequential in *Yankee Atomic Electric Company*. If, in *Yankee Atomic Electric Company*, a challenge to the Licensee's choice of the modified DECON option instead of SAFSTOR could not be based solely on estimated differences in estimated collective occupational dose on the order of magnitude of 900 rem, then it follows that a challenge to DOE's choice to include drip shields cannot be based solely on estimated differences in estimated collective dose estimates on the order of magnitude of 975 person-rem.

(3) The definition ALARA in 10 CFR § 20.1003 provides that any proposed dose reductions must be "consistent with the purpose for which the licensed activity is undertaken," and consider (among other things) "the economics of improvements in relation to benefits to the public health and safety," and "other societal and socioeconomic considerations." At the very least, any reduction in occupational exposures must be weighed along with other increases in public exposures. Attachment 13 (at ¶ 71, Figures 4(a) and 4(b)) shows that, according to EPRI's performance assessment, there are highly significant differences in calculated annual probability-weighted doses (in at least the nominal case) between DOE's proposed design and NEI's proposed design without drip shields. A comparison of Figures 4(a) and 4(b) indicates that eliminating drip shields will increase the probability-weighted dose at 10,000 years by about two orders of magnitude. Applying the ALARA principle, using only the information in Attachment 13, would require a proverbial weighing of apples and oranges-estimated occupational doses versus probability-weighted public doses, over dramatically different time frames. When Part 63 was developed, the Commission expressly considered and rejected any requirement to conduct this kind of a difficult ALARA weighing process. 66 Fed. Reg. 55732, 55751 (November 2, 2001). Because NEI-SAFETY-06 necessarily requires consideration of factors rejected as immaterial by the Commission, NEI-SAFETY-06 must be rejected as immaterial as well.

f. Genuine dispute (10 CFR § 2.309(f)(1)(vi))

Without prejudice to other arguments, Nevada has no legal objection.

IV. **NRC MUST REJECT NEI'S REQUEST FOR DISCRETIONARY STANDING AND INTERVENTION**

The petition asks for discretionary standing and intervention (Petition at 7-8). For the reasons given below, this must be rejected.

Discretionary intervention is an "extraordinary procedure, and will not be allowed unless there are compelling factors." 69 Fed. Reg. 2182, 2201 (January 14, 2004) (quoting from the preamble associated with the 2004 notice of final rulemaking amending the Rules of Practice). In fact, discretionary intervention is so "extraordinary" that it has not been allowed in the last fifteen years, and was allowed only eight times before then. NEI offers no compelling reasons here.

First, while NEI may be able to call upon significant expertise, this expertise will be applied primarily to make the repository less safe. NEI-SAFETY-03, 04, 05, and 06 and NEI-NEPA-03 all complain about excessive conservatism. Surely it would be contrary to the underlying purpose and spirit of the Atomic Energy Act to allow discretionary intervention to make a facility less safe. NEI-SAFETY-01 and 02 both address the license application NEI wished DOE had filed but did not, and are not worth pursuing. NEI-NEPA-01 and 02 are the NEPA counterparts of NEI-SAFETY-01 and 02, and are not worth pursuing without their safety counterparts.

Second, as indicated above, NEI's impacts and interests are outside of the zone of interests protected by the relevant statutes (the Atomic Energy Act and NEPA), and cannot be a factor favoring intervention. *See Detroit Edison Company (Enrico Fermi Atomic Power Plant, Unit 2)*, LBP-78-11, 7 NRC 381, 388 (1978), *affirmed*, ALAB-740, 7 NRC 743 (1978).

Third, it is evident that NEI's disputes are really with DOE and, because NEI may pursue its contentions with that agency, it has other means to protect its interests.

Fourth, there is the significant potential that NEI's participation will broaden the issues and delay the proceeding, an especially important consideration given NRC's apparent determination to meet the three-year decision deadline in the Nuclear Waste Policy Act. NEI proposed to introduce an entirely new EPRI performance assessment into the proceeding, and its defense and opposition would require engaging scores of experts in hundreds of scientific disciplines, and require vast litigation resources and time, all to facilitate the licensing of a facility with less safety margins.

In sum, considering the factors listed in 10 CFR § 2.309(e), NEI has nothing in its favor and much against allowing discretionary intervention. Clearly, no compelling case is made.

Respectfully submitted,

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Dated: February 9, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
U.S. DEPARTMENT OF ENERGY) Docket No. 63-001
)
(High Level Waste Repository)) February 9, 2009

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Answer of the State of Nevada to Nuclear Energy Institute's Petition to Intervene has been served upon the following persons either by Electronic Information Exchange or electronic mail (denoted by an asterisk (*)).

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