LBP-09-26

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Lawrence G. McDade, Chairman
Dr. Paul B. Abramson
Dr. Gary Arnold

In the Matter of Tennessee Valley Authority. (Watts Bar Unit 2)	Docket Nos. 50-391-OL ASLBP No. 09-893-01-OL-BD01 November 19, 2009

MEMORANDUM AND ORDER
(Granting Petition to Intervene)

I. INTRODUCTION

This proceeding arises from an updated application pursuant to 10 C.F.R. Part 50 by the Tennessee Valley Authority (TVA) for an operating license (OL) for a second nuclear reactor at the Watts Bar Nuclear Plant (WBN) in Rhea County, Tennessee.[1] Pending before the Board is a Petition to Intervene and Request for Hearing[2] jointly filed by five organizations in response to a Notice of Opportunity for Hearing issued on May 1, 2009.[3] The Petitioners in this proceeding are Southern Alliance for Clean Energy (SACE), Tennessee Environmental Council (TEC), We

[1] TVA originally filed an OL application for WBN Unit 2 on June 30, 1976; however, construction of the unit was never completed. TVA filed an update to the OL application on March 4, 2009. See Tennessee Valley Authority; Notice of Receipt of Update to Application for Facility Operating License and Notice of Opportunity for Hearing for the Watts Bar Nuclear Plant, Unit 2 and Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation, 74 Fed. Reg. 20,350, 20,350 (May 1, 2009).

[2] Petition to Intervene and Request for Hearing (July 13, 2009) [hereinafter Petition].

[3] 74 Fed. Reg. at 20,350.

the People (WTP), the Sierra Club, and Blue Ridge Environmental Defense League (BREDL).[4] TVA and the NRC Staff filed Answers addressing the Petition.[5] The Petitioners filed a Reply to TVA's and the Staff's Answers.[6] On September 3, 2009, SACE filed a Motion for Leave to Amend Contention 7, along with an Amended Contention 7.[7] TVA and the NRC Staff filed Responses in Opposition to the Motion on September 8, and September 10, 2009, respectively.[8] In addition, on September 28, 2009, TVA and the NRC Staff filed Answers to the Amended Contention.[9] SACE filed a Reply to TVA's and the NRC Staff's Answers to the Amended Contention on October 5, 2009.[10]

In order to intervene as a party in a NRC adjudicatory proceeding, a petitioner must (1) establish standing, and (2) proffer at least one admissible contention.[11] For the reasons discussed below, we grant the Request for Hearing submitted on behalf of SACE, which has

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[4] Petition at 1.

[5] [TVA]'s Answer Opposing the [SACE] et al., Petition to Intervene and Request for Hearing (Aug. 7, 2009) [hereinafter TVA Answer]; NRC Staff's Answer to Petition to Intervene and Request for Hearing (Aug. 7, 2009) [hereinafter Staff Answer].

[6] Petitioners' Reply to NRC Staff's and [TVA]'s Answers to Petition to Intervene and Request for Hearing (Aug. 14, 2009) [hereinafter Reply].

[7] Petitioners' Motion for Leave to Amend [Co]ntention 7 Regarding TVA Aquatic Study (Sept. 3, 2009) [hereinafter Motion to Amend]; Petitioners' Amended Contention 7 Regarding TVA Aquatic Study (Sept. 3, 2009) [hereinafter Amended Contention 7].

[8] [TVA]'s Response in Opposition to Petitioners' Motion for Leave to Amend Contention 7 Regarding TVA Aquatic Study (Sept. 8, 2009) [hereinafter TVA Response to Motion to Amend]; NRC Staff's Response in Opposition to Motion for Leave to Amend Contention 7 Regarding TVA Aquatic Study (Sept. 10, 2009) [hereinafter Staff Response to Motion to Amend].

[9] [TVA]'s Response in Opposition to Petitioners' Amended Contention 7 Regarding TVA Aquatic Study (Sept. 28, 2009) [hereinafter TVA Answer to Amended Contention 7]; NRC Staff's Answer to Petitioners' Amended Contention 7 Regarding TVA Aquatic Study (Sept. 28, 2009) [hereinafter Staff Answer to Amended Contention 7].

[10] Petitioners' Reply to Responses of NRC Staff and [TVA] to Petitioners' Amended Contention 7 (Oct. 5, 2009) [hereinafter Reply to Amended Contention 7].

[11] 10 C.F.R. § 2.309(a).

demonstrated standing and submitted two admissible contentions (SACE Contentions 1 and 7) in a Petition that was timely filed. We deny the Request for Hearing submitted on behalf of TEC, WTP, the Sierra Club, and BREDL because the Petition to Intervene that was submitted on their behalf was not filed within the applicable deadline and they have not submitted adequate justification to allow consideration of a non-timely Petition to Intervene.

II. STANDING ANALYSIS

A. Standards Governing Standing

Pursuant to 10 C.F.R. § 2.309(d)(ii)-(iv), a petitioner seeking to establish standing to intervene in an NRC proceeding must provide information in the petition including (1) the nature of the petitioner's right to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any decision or order that might be issued in the proceeding on the petitioner's interest. Additionally, the NRC generally follows judicial concepts of standing, which require a petitioner to "(1) allege a concrete and particularized injury that is (2) fairly traceable to the challenged action and (3) likely to be redressed by a favorable decision," commonly referred to as "'injury in fact,' causality and redressability."[12]

To demonstrate standing, an organization seeking to intervene in a proceeding must allege that the challenged action will cause a cognizable injury to the organization's interests or to the interests of its members.[13] If the organization seeks to intervene as a representative of its members, it must identify at least one member by name and address, show that member would

[12] Yankee Atomic Elec., Co. (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 195 (1998) (citing Steel Co. v. Citizens for a Better Env't., 523 U.S. 83, 102-04 (1998); Kelley v. Selin, 42 F.3d 1501, 1508 (6th Cir. 1995)).

[13] Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant, Unit 1), LBP-07-11, 65 NRC 41, 52 (2007).

have standing in his or her own right, and demonstrate that the member has authorized the organization to intervene on his or her behalf.[14]

In addition, in the context of an operating license proceeding the NRC applies a proximity presumption, under which a petitioner who lives within fifty miles of a nuclear power reactor is presumed to have standing without the need specifically to plead injury, causation, and redressability.[15]

B. Board Rulings on Standing

With its Petition to Intervene, SACE submitted declarations from two of its members who live within fifty miles of the proposed facility which authorized SACE to represent their interests in this proceeding,[16] and neither TVA nor the NRC Staff contest SACE's standing.[17] Given the declarations submitted, and the proximity presumption applicable in proceedings relating to nuclear power plant operating licenses, we find that SACE has established standing to intervene in this proceeding. We do not address the standing of the other petitioners, TEC, WTP, the Sierra Club, and BREDL, because a timely Petition to Intervene was not submitted on their behalf.

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[14] Id.

[15] See, e.g., Calvert Cliffs 3 Nuclear Project, LLC, & Unistar Nuclear Operating Servs. (Combined License Application for Calvert Cliffs Unit 3), LBP-09-4, 69 NRC 170, 181-86 (2009); Tennessee Valley Auth. (Bellefonte Nuclear Power Plant Units 3 and 4), LBP-08-16, 68 NRC 361, 378 (2008); see also Florida Power & Light Co. (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989) (observing that the proximity presumption applies in proceedings for nuclear power plant "construction permits, operating licenses, or significant amendments thereto").

[16] Petition, Attach. 1 at unnumbered pp. 1-2, Declaration of Standing of Sandra Kurtz (June 16, 2009) & Declaration of Standing of Louise Gorenflo (June 26, 2009).

[17] TVA Answer at 8; Staff Answer at 9.

III. LATE FILING ANALYSIS

A. Standards Governing Late Filing

Pursuant to the 10 C.F.R. Part 2 regulations, we may consider contentions submitted after the initial 60-day filing deadline under two sets of circumstances. Section 2.309(f)(2) allows contentions to be filed after the initial 60-day deadline if the petitioner shows that:

(i) The information upon which the amended or new contention is based was not previously available;
(ii) The information upon which the amended or new contention is based is materially different than information previously available; and
(iii) The amended or new contention has been submitted in a timely fashion based on the availability of the subsequent information.[18]

Otherwise, pursuant to 10 C.F.R. § 2.309(c), petitions and contentions filed after the initial 60-day deadline are admissible only upon a balancing of the following factors:

(i) Good cause, if any, for the failure to file on time;
(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;
(iv) The possible effect of any order that may be entered in the proceeding on the requestor's/petitioner's interest;
(v) The availability of other means whereby the requestor's/petitioner's interest will be protected;
(vi) The extent to which the requestor's/petitioner's interests will be represented by existing parties;
(vii) The extent to which the requestor's/petitioner's participation will broaden the issues or delay the proceeding; and
(viii) The extent to which the requestor's/petitioner's participation may reasonably be expected to assist in developing a sound record.[19]

The Commission has indicated that, of the 10 C.F.R. § 2.309(c)(1) factors, good cause for the

[18] 10 C.F.R. § 2.309(f)(2)(i)-(iii).

[19] Id. § 2.309(c)(1)(i)-(viii).

failure to file on time is the most important.[20] Absent good cause, a petitioner's "demonstration on the other factors must be 'compelling.'"[21]

B. Board Ruling on Motion to Permit Late Filing[22]

SACE requested and was granted an extension to file a petition by July 14, 2009.[23] However, the request for an extension did not state, or otherwise indicate, that any party in addition to SACE was seeking an extension.[24] Likewise, the Commission Order granting the extension was not general in nature but was directed only to SACE.[25]

Both TVA and the NRC Staff argue that, because the extension applied only to SACE, the other Petitioners, to whom the Commission Order granting the extension did not expressly apply and who did not address the factors set forth in NRC's regulations governing late-filed contentions in the Petition to Intervene,[26] are impermissibly late and should not be admitted as parties to this proceeding.[27] Additionally, TVA argues that TEC, WTP, Sierra Club, and BREDL

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[20] Amergen Energy Co. (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 261 (2009); Dominion Nuclear Conn., Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-05-24, 62 NRC 551, 564 (2005); see also Commonwealth Edison Co. (Braidwood Nuclear Power Station, Units 1 and 2), CLI-86-8, 23 NRC 241, 244 (1986).

[21] Millstone, CLI-05-24, 62 NRC at 565; see also Texas Utils. Elec. Co. (Comanche Peak Steam Electric Station, Units 1 and 2), CLI-92-12, 36 NRC 62, 73-74 (1992).

[22] In the Motion to Permit Late Addition of Co-Petitioners only the Section 2.309(c) factors are addressed. Accordingly, the Board has not analyzed the Section 2.309(f)(2) factors in ruling on the Co-Petitioners' Motion.

[23] [SACE]'s Request for Extension of Time to Submit Hearing Request/Petition to Intervene (June 16, 2009) [hereinafter SACE Extension Request]; Order of the Secretary (Granting [SACE]'s Request for Extension of Time) (June 24, 2009) (unpublished) [hereinafter Extension Order].

[24] SACE Extension Request.

[25] Extension Order.

[26] 10 C.F.R. § 2.309(c).

[27] Staff Answer at 13; TVA Answer at 17.

should not be admitted as parties because no individual, including counsel for SACE, has filed a Notice of Appearance on their behalf and has thus been authorized to appear on their behalf in this proceeding.[28]

In their Reply, the Petitioners concede that the hearing request is not timely with respect to TEC, WTP, Sierra Club, and BREDL.[29] However, the Petitioners' Reply references a Motion that asks the Board to permit the late addition of those groups to SACE's timely petition and admit them as parties to the proceeding.[30] In the Motion, the Petitioners assert that they satisfy the factors set forth in 10 C.F.R. § 2.309(c) relating to the acceptance of non-timely petitions to intervene.[31] They claim to satisfy the good cause requirement because TEC, WTP, Sierra Club, and BREDL had the same reasons for needing additional time that SACE had, and because counsel for the Petitioners overlooked the need to request an expansion of the scope of the extension granted to SACE under the pressure of preparing the Petition to Intervene.[32] They assert that the factors concerning the nature and extent of their right to be made parties to the proceeding, the nature and extent of their interest in the proceeding, and the possible effect on them of any order in the proceeding favor their admission to the proceeding for the reasons asserted in the Petition.[33] They also assert that they will have no other means of protecting their interests because methods do not exist under NRC regulations that would allow them to participate in licensing proceedings, that SACE will not adequately represent their interests if it

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[28] TVA Answer at 17-18.

[29] Reply at 2.

[30] Id.

[31] Motion to Permit Late Addition of Co-Petitioners to [SACE]'s Petition to Intervene and Admit Them as Intervenors (Aug. 14, 2009) at 2 [hereinafter Motion for Late Admission of Co-Petitioners].

[32] Motion for Late Admission of Co-Petitioners at 2.

[33] Id. at 3 (citing 10 C.F.R. § 2.309(c)(1)(ii)-(iv)).

is later forced to withdraw from the proceeding, that their participation merely as co-Petitioners on a Petition that has already been submitted will not affect the breadth or length of the proceeding, and that they have assisted and will assist in developing a sound record by co-sponsoring the contentions that have already been filed and coordinating with SACE in the future development of testimony and/or legal briefs on any admitted contentions, for example, by contributing local environmental and economic knowledge to help develop proffered Contentions 4 and 7.[34]

While SACE presented a credible case for an extension of time, its co-petitioners did not demonstrate good cause for failing to file their Request for Hearing or a Motion for an Extension of Time within the established deadline. Petitioners candidly state that they did not join SACE in seeking an extension because at the time the extension was requested they had not yet decided whether to join SACE in the Petition to Intervene.[35] Such indecision does not constitute good cause for failure to file a timely petition. Further, having failed to demonstrate good cause for the late filing, the Board does not find that the other Section 2.309(c)(1) factors are so compelling that we should entertain their non-timely Petition.

All of the Co-Petitioners have the same rights under the Act to be made a party to this proceeding, and the same interests in this proceeding, as does SACE. Further, admitting the Co-Petitioners as parties will not broaden or delay the proceeding. Nevertheless, these factors are insufficient, absent a demonstration of good cause for their late filing, to justify our admitting them as parties to this proceeding.

Co-Petitioners state that SACE could withdraw from this proceeding and, if it did so, there would be no existing party to protect co-petitioners interests (Section 2.309(c)(1)(vi)).[36]

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[34] Id. at 3-4 (citing 10 C.F.R. § 2.309(c)(1)(v)-(vii)).

[35] Id. at 2.

[36] Id. at 3.

While the withdrawal of SACE from this proceeding is a possibility, the abandonment of its status in this proceeding, after taking the effort to request an extension of time and then filing a professional, and well-supported Petition to Intervene, is far too speculative to carry much weight in the Board's decision.

Co-Petitioners also argue that they would be able to assist in developing a sound record (Section 2.309(c)(viii)) by coordinating with SACE on the development of testimony and legal briefs by contributing their knowledge of local environmental and economic conditions to the development of Petitioners' case.[37] They do not, however, explain how their knowledge of these facts is superior to, or even different from, that of SACE or why, if they are not admitted as parties, they could not, nevertheless, provide such services to SACE.

Therefore, after balancing all of the Section 2.309(c)(1) factors, we deny the Motion to Permit Late Addition of Co-Petitioners to SACE's Petition to Intervene and do not extend to them party status in this proceeding.

IV. CONTENTION ANALYSIS

A. Standards Governing Contention Admissibility

For a contention to be admissible, under 10 C.F.R. § 2.309(f)(1), it must (i) provide a specific statement of the legal or factual issue sought to be raised; (ii) provide a brief explanation of the basis for the contention; (iii) demonstrate that the issue raised is within the scope of the proceeding; (iv) demonstrate that the issue raised 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, including references to specific sources and documents that support the petitioner's position and upon which the petitioner intends to rely at hearing; and (vi) provide sufficient information to show that a genuine dispute exists with regard to a material issue of law or fact, including references to specific portions of the application that

[37] Id. at 4.

the petitioner disputes or, where the application is alleged to be deficient, the identification of such deficiencies and supporting reasons for this belief.[38]

The purpose of the contention admissibility rules is to "focus litigation on concrete issues and result in a clearer and more focused record for decision."[39] 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."[40] The Commission has emphasized that the contention admissibility rules are "strict by design."[41] Failure to comply with any of the requirements is grounds for dismissal of a contention.[42]

These requirements have been further explained through the Commission's case law, as summarized below.

i. Brief Explanation of the Basis for the Contention

Section 2.309(f)(1)(ii) requires a "brief explanation of the basis for the contention" as a prerequisite to contention admissibility. The Commission has explained that "a petitioner must

[38] 10 C.F.R. § 2.309(f)(1)(i)-(vi).

[39] Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2202 (Jan. 14, 2004); see also Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3), LBP-08-13, 68 NRC 43, 61 (2008); Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council, 435 U.S. 519, 553-54 (1978); BPI v. AEC, 502 F.2d 424, 428 (D.C. Cir. 1974); Philadelphia Elec. Co. (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974).

[40] 69 Fed. Reg. at 2202.

[41] Amergen Energy Co., LLC (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 118 (2006) (citing Dominion Nuclear Conn., Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001), pet. for reconsideration denied, CLI-02-1, 55 NRC 1 (2002)).

[42] 69 Fed. Reg. at 2221; see also Dominion Nuclear Conn., Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 NRC 631, 636 (2004); Private Fuel Storage, LLC (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999); Arizona Pub. Serv. Co. (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991).

provide some sort of minimal basis indicating the potential validity of the contention."[43] Because "the reach of a contention necessarily hinges upon its terms and its stated bases,"[44] the brief explanation helps define the scope of the contention.[45]

ii. Within the Scope of the Proceeding

A petitioner must also demonstrate that the "issue raised in the contention is within the scope of the proceeding."[46] The scope of a proceeding is defined in the Commission's initial hearing notice and order referring the proceeding to the Licensing Board.[47] Contentions that fall outside the scope of the proceeding must be rejected.[48]

iii. Materiality

In order to be admissible, a 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."[49] In other words, the petitioner must show that "the subject matter of the contention could impact the grant or denial of the license application at issue in the proceeding."[50] "Materiality" requires a showing that the alleged error or omission is of possible

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[43] Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989).

[44] Louisiana Energy Servs., LP (National Enrichment Facility), LBP-04-14, 60 NRC 40, 57 (2004).

[45] Crow Butte Res., Inc. (North Trend Expansion Area), CLI-09-12, 69 NRC __, __ (slip op. at 24) (June 25, 2009) (citing Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 379 (2002)).

[46] 10 C.F.R. § 2.309(f)(1)(iii).

[47] Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Unit 3), LBP-08-9, 67 NRC 421, 431 (2008); Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790-91 (1985).

[48] Indian Point, LBP-08-13, 68 NRC at 62; Portland Gen. Elec. Co. (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-90 n.6 (1979).

[49] 10 C.F.R. § 2.309(f)(1)(iv).

[50] Indian Point, LBP-08-13, 68 NRC at 62.

significance to the result of the proceeding,[51] i.e., that some significant link exists between the claimed deficiency and either the health and safety of the public, or the environment.[52]

iv. Concise Allegation of Supporting Facts or Expert Opinion

Contentions must be accompanied 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."[53] It is the petitioner's obligation to present the factual and expert support for its contention.[54] Failure to do so requires that the contention be rejected.[55]

Thus, "[m]ere 'notice pleading' is insufficient. A petitioner's issue will be ruled inadmissible if the petitioner 'has offered no tangible information, no experts, no substantive affidavits,' but instead only 'bare assertions and speculation.'"[56] Likewise, providing any material or document as the foundation for a contention, without setting forth an explanation of its significance, is inadequate to support the admission of a contention.[57] Further, if a petitioner

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[51] Id. (citing Portland Cement Ass'n. v. Ruckelshaus, 486 F.2d 375, 394 (D.C. Cir. 1973), cert. denied sub nom. Portland Cement Corp. v. Adm'r, E.P.A., 417 U.S. 921 (1974)).

[52] Virginia Elec. & Power Co. (North Anna Power Station, Unit 3), LBP-08-15, 68 NRC 294, 315 (2008); Yankee Atomic Elec. Co. (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 75-76 (1996), rev'd in part on other grounds, CLI-96-7, 43 NRC 235 (1996).

[53] 10 C.F.R. § 2.309(f)(1)(v).

[54] Southern Nuclear Operating Co. (Early Site Permit for Vogtle ESP Site), LBP-07-3, 65 NRC 237, 253 (2007); Georgia Inst. of Tech. (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305, vacated in part and remanded on other grounds and aff'd in part, CLI-95-10, 42 NRC 1, and CLI-95-12, 42 NRC 111 (1995).

[55] Vogtle, LBP-07-3, 65 NRC at 253; Palo Verde, CLI-91-12, 34 NRC at 155.

[56] 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)); see also Consumers Energy Co. (Palisades Nuclear Power Plant), CLI-07-18, 65 NRC 399, 414 (2007).

[57] Indian Point, LBP-08-13, 68 NRC at 63; Fansteel, CLI-03-13, 58 NRC at 204.

neglects to provide the requisite support for its contentions, the Board should not make assumptions of fact that favor the petitioner or supply information that is lacking.[58] Additionally, any supporting material provided by a petitioner, including those portions of the material that are not relied upon, is subject to Board scrutiny.[59]

However, determining whether the contention is adequately supported by a concise allegation of the facts or expert opinion is not a hearing on the merits.[60] The petitioner does not have to prove its contention at the admissibility stage.[61] The contention admissibility threshold is also less than is required at the summary disposition stage.[62] Nevertheless, while a "Board may appropriately view [p]etitioners' support for its contention in a light that is favorable to the [p]etitioner,"[63] a petitioner must provide some support for his or her contention, either in the form of facts or expert testimony.

In short, the information, facts, and expert opinions provided by the petitioner will be examined by the Board to confirm that the petitioner does indeed supply adequate support for

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[58] Georgia Tech, LBP-95-6, 41 NRC at 305. See also Crow Butte, CLI-09-12, 69 NRC at __ (slip op. at 22); Duke Cogema Stone & Webster (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 422 (2001).

[59] Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2), LBP-08-26, 68 NRC 905, 917 (2008); Yankee Nuclear, LBP-96-2, 43 NRC at 90.

[60] Indian Point, LBP-08-13, 68 NRC at 63; Pub. Serv. Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-82-106, 16 NRC 1649, 1654 (1982).

[61] Private Fuel Storage, LLC (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 139 (2004); North Anna, LBP-08-15, 68 NRC at 335.

[62] 10 C.F.R. § 2.710(d)(2). "[A]t the contention filing stage the factual support necessary to show that a genuine dispute exists need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand a summary disposition motion." 54 Fed. Reg. at 33,171.

[63] Palo Verde, CLI-91-12, 34 NRC at 155; see also Oyster Creek, CLI-09-7, 69 NRC at 275.

the contention.[64] But at the contention admissibility stage, all that is required is that the petitioner provide an expert opinion or "some alleged fact, or facts, in support of its position."[65]

v. Genuine Dispute Regarding Specific Portions of Application

A contention must "show that a genuine dispute exists . . . on a material issue of law or fact" with regard to the license application in question, challenge and identify either specific portions of, or alleged omissions from, the application, and provide the supporting reasons for each dispute.[66] Any contention that fails to directly controvert the application, or that mistakenly asserts that the application does not address a relevant issue, may be dismissed.[67]

vi. Challenges to NRC Regulations

In addition to the 10 C.F.R. § 2.309(f)(1) contention admissibility rules, with limited exceptions "no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding."[68] Thus, a contention that attacks applicable statutory requirements or represents a challenge to the basic structure of the Commission's regulatory process must be

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[64] Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 48 (1989), vacated in part on other grounds and remanded, CLI-90-4, 31 NRC 333 (1990); see also USEC, Inc. (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 457 (2006).

[65] 54 Fed. Reg. at 33,170; see also Nuclear Mgmt. Co., LLC (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 750 (2005). "This requirement does not call upon the intervenor to make its case at this stage of the proceeding, but rather to indicate what facts or expert opinions, be it one fact or opinion or many, of which it is aware at that point in time which provide the basis for its contention." 54 Fed. Reg. at 33,170.

[66] 10 C.F.R. § 2.309(f)(1)(vi).

[67] Vogtle, LBP-07-3, 65 NRC at 254; Sacramento Mun. Util. Dist. (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), review declined, CLI-94-2, 39 NRC 91 (1994).

[68] 10 C.F.R. § 2.335(a); see also Louisiana Energy Servs., LP (National Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005) ("The NRC has long prohibited the use of adjudicatory proceedings to challenge the terms of regulations."); Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 218 (2003).

rejected.[69] Similarly, the NRC's adjudicatory process is not the proper venue for the evaluation of a petitioner's own view regarding the direction that regulatory policy should take.[70]

B. Board Rulings on Contention Admissibility

Contention 1: Failure to List and to Discuss Compliance with Required Federal Permits, Approvals and Regulations

SACE asserts that TVA failed to report in its Final Supplemental Environmental Impact Statement (FSEIS)[71] related to the updated OL application for WBN Unit 2 "all Federal permits, licenses, approvals, and other entitlements which must be obtained in connection with the proposed action" and failed to include a "discussion of the status of compliance with applicable environmental quality standards and requirements including . . . thermal and other water pollution limitations or requirements which have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection."[72] In support of this contention, SACE provides two examples of permits that it alleges TVA should have discussed, but failed to discuss, in the FSEIS: (1) an interagency agreement among TVA, the U.S. Army Corps of Engineers (USACE), the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Tennessee Department of Health and Environment (TDHE) concerning contaminated sediment in the Watts Bar Reservoir;[73] and (2) TVA's National Pollution Discharge Elimination System (NPDES) permit from the Tennessee Department of

[69] Indian Point, LBP-08-13, 68 NRC at 64; Pub. Serv. Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-82-76, 16 NRC 1029, 1035 (1982) (citing Peach Bottom, ALAB-216, 8 AEC at 20-21).

[70] LES, LBP-04-14, 60 NRC at 55 (citing Peach Bottom, ALAB-216, 8 AEC at 21 n.33).

[71] [TVA], Final Supplemental Environmental Impact Statement, Completion and Operation of Watts Bar Nuclear Plant Unit 2 (June 2007) (ADAMS Accession No. ML080510469) [hereinafter FSEIS]. See also WBN Unit 2 Severe Accident Management Alternatives Analysis (Jan. 21, 2009) (ADAMS Accession No. ML090360589) [hereinafter FSEIS SAMA Analysis].

[72] Petition at 6-7 (citing 10 C.F.R. §§ 51.53(b), 51.45(d)).

[73] Petition, Attach. 2, Interagency Agreement, Watts Bar Reservoir Permit Coordination (Feb. 28, 1991) [hereinafter Interagency Agreement].

Environment and Conservation (TDEC), which expired two years ago and has not been re-issued.[74]

SACE states that TVA was required to discuss the Interagency Agreement in its EIS because WBN Unit 2 is within the geographical area covered by the agreement and would involve a fixed water intake for an industrial or commercial purpose, an activity which SACE represents is within the review process established by the agreement.[75] SACE also states that TVA is bound by the terms of an expired NPDES permit and that the Applicant must, therefore, describe the terms of the permit, the status of the reissuance application, and whether it is in compliance with the terms of the expired permit.[76] SACE also notes that "[t]here may be other federal permits, approvals, and environmental quality standards applicable to WBN Unit 2 of which Petitioners are unaware" that are not, but should be, discussed in the FSEIS.[77]

Both TVA and the NRC Staff oppose the admission of this contention. Both argue that 10 C.F.R. § 51.45(d) does not require TVA to discuss the Interagency Agreement.[78] According to TVA, the agreement by its own terms only applies to TVA where activities requiring permit authorization from USACE (i.e., construction activities within 500 feet of the reservoir) are involved.[79] TVA also represents that WBN Unit 2 would not affect the amount of water withdrawn from the portions of the Tennessee River covered by the agreement and that the Petitioner ignores the discussion in Section 2.1 of the FSEIS indicating that no work would need to be done on the supplemental condenser cooling water system (SCCW) intake structure, the

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[74] Petition at 7-8.

[75] Petition at 8.

[76] Id.

[77] Id.

[78] See TVA Answer at 21; Staff Answer at 15.

[79] TVA Answer at 21.

only intake structure located within the area covered by the agreement.[80] Thus, TVA asserts, proposed Contention 1 is not supported by facts or expert opinion, fails to show a genuine dispute on a material issue of law or fact, and is outside the scope of the proceeding, contrary to 10 C.F.R. §§ 2.309(f)(1)(v), (vi), and (iii).[81]

The NRC Staff emphasizes that the Interagency Agreement applies "only to the issues associated with the contaminated or potentially contaminated sediments resulting from the DOE Operations at Oak Ridge, Tennessee" and asserts that the Petitioner, in failing to show how the agreement is required to be discussed in the FSEIS, fails to demonstrate a genuine dispute on a material issue of law.[82]

With regard to TVA's expired NPDES permit, both TVA and the NRC Staff point to sections of the FSEIS that discuss the permit and assert that the Petitioner has failed to raise a genuine dispute on a material issue of fact.[83] TVA also argues that the Petitioner has failed to provide supporting facts for this portion of the contention.[84]

Additionally, both TVA and the NRC Staff state that the Petitioner's reference to other permits that might have been omitted from the FSEIS either fails to demonstrate a genuine dispute with the FSEIS or does not constitute a specific statement of the issue of law or fact as required by 10 C.F.R. § 2.309(f)(1)(i).[85]

In its Reply, SACE argues that the Interagency Agreement is triggered by the presence of the SCCW intake structure within the area governed by the agreement, even if operation of

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[80] Id. at 21-22.

[81] Id. at 23.

[82] Staff Answer at 15 (quoting Interagency Agreement at 2).

[83] See TVA Answer at 23-26; Staff Answer at 15-16.

[84] TVA Answer at 25-26.

[85] Staff Answer at 16; TVA Answer at 19 n.104.

WBN Unit 2 will not increase the fixed water intake.[86] Furthermore, it asserts that TVA has not shown that any review of the SCCW has ever taken place as required under the agreement, and that TVA's own statements in the FSEIS contradict its argument that operation of WBN Unit 2 will not actually affect the fixed water intake.[87] SACE also asserts that the FSEIS references to the NPDES permit consist of (1) the permit's effective and expiration dates, listed in the "References" section, and (2) "vague passing references to the permit, with no actual discussion or analysis of the permit's terms or limitations, nor any real explanation of how TVA is in compliance with those limits."[88] Finally, in response to TVA's and the NRC Staff's assertions that the reference to other possible permits is too non-specific or speculative, SACE argues that it is not its burden to identify the specific permits, licenses, or approvals TVA must obtain.[89]

Board Ruling on the Admissibility of Contention 1 (Listing and Discussion of Permits)

The Board concludes that Contention 1 is admissible.

In order for the Board to find Contention 1 admissible, we must conclude that the Petitioners have raised a genuine issue concerning TVA's compliance with the mandate of Section 51.45(d). That regulation requires that TVA list in the license application all federal permits, licenses, approvals, and other entitlements that must be obtained in connection with the issuance of an operating license for a second nuclear reactor at the Watts Bar Nuclear Plant and adequately discuss the status of its compliance with applicable environmental quality standards and all applicable zoning and land-use regulations and thermal and other water pollution limitations or requirements that have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection. In support of this contention,

[86] Reply at 4.

[87] Id. at 4-5.

[88] Id. at 5-6.

[89] Id. at 6.

SACE discusses two items which it urges should have been, but were not, listed and discussed in TVA's FSEIS, an Interagency Agreement and an NPDES permit. SACE also alleged that there were additional unspecified permits that should have been listed and discussed by TVA in its EIS.[90] As explained below, we find that only the allegation regarding the additional, unspecified and unlisted permits supports the admission of this contention.

The purpose of the Interagency Agreement cited by SACE is to coordinate "permitting and other use authorization activities"[91] among the participating agencies. Under this agreement, the parties thereto were obligated to establish a working group to develop a screening list of permitted actions that characterized the level of sediment disturbance each such activity would have within the covered geographical area. Thereafter, those actions characterized as causing either marginal or potentially major sediment disturbance would be subject to a case-by-case review prior to a final decision on the action by USACE or TVA.[92]

This Interagency Agreement is not, in our judgment, a federal permit, license, approval, or other entitlement as those terms are used in Section 51.45(d). The Agreement does not limit action by TVA; it only provides that, in certain specific circumstances which are not applicable here, TVA will contact the other participating agencies in order to obtain their views.[93] Nothing on the face of this agreement suggests that it obligates TVA to seek approval from USACE or any other agency for any action associated with Watts Bar Unit 2.

In addition, even if this Interagency Agreement were viewed as a required approval pursuant to Section 51.45(d), SACE has not alleged facts or proffered expert opinion that would tend to show that the proposed action, the granting of the OL, is within the scope of the

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[90] Petition at 8.

[91] Interagency Agreement at 2.

[92] Id. at 4.

[93] Id. at 4-5.

Interagency Agreement. TVA represents that it is not undertaking any action that would affect fixed water intakes from those areas of the Watts Bar Reservoir governed by the Interagency Agreement. It further represents that it is not undertaking any activity that would require approval from USACE.[94] More specifically, TVA represents that any modification to the SCCW system would be limited to installed plant systems and would not change the volume of water delivered and removed by the SCCW system.[95]

SACE has not presented any factual contradiction or rebuttal to these representations. Instead, SACE argues that TVA's operation of a second reactor at Watts Bar "could result in the disturbance, resuspension, removal and/or disposal of contaminated sediments or potentially contaminated sediments in the Watts Bar Reservoir."[96] What SACE does not do is allege facts that would tend to show that TVA's representations are not accurate or that TVA's operation of a second reactor at the Watts Bar site could, in fact, result in the disturbance, resuspension, removal and/or disposal of contaminated sediments or potentially contaminated sediments in the Watts Bar Reservoir covered by the Agreement.[97] Accordingly, SACE has not established that the proposed action is within the purview of the Interagency Agreement, and thus has not raised a genuine dispute with the application on this point.

With regard to the NPDES permit, Section 3.1.2 of TVA's FSEIS contains a discussion of TVA's compliance with the NPDES permit, and SACE has not demonstrated why the discussion in TVA's FSEIS does not satisfy the Applicant's obligation to discuss this permit pursuant to Section 51.45(d).

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[94] TVA Answer at 21.

[95] Id. at 22.

[96] Reply at 4 (quoting Interagency Agreement at 2, 11).

[97] We also note that the Interagency Agreement is only applicable to those portions of Watts Bar Reservoir which may potentially be subject to sediment contamination by the DOE operation at Oak Ridge. Interagency Agreement at 3.

With regard to other permits, however, while SACE's speculation that there may be other unlisted permits of which it is unaware would generally be too ephemeral to raise a genuine dispute on a material issue of fact, in this case, SACE's claim is buttressed by TVA's FSEIS which concedes that there are other applicable permits and approvals[98] but does not identify them or discuss the current compliance status.[99]

Accordingly, we view Contention 1 as an adequately supported contention of omission and hold that it is admissible.

Contention 2: Inadequate SAMA Uncertainty Analysis

The Petitioner asserts that the calculation of risk-weighted consequences of severe accidents that forms a part of TVA's Severe Accident Mitigation Alternatives Analysis (SAMA) is flawed because, despite TVA's statement in its FSEIS that it used "the 95th percentile PRA [probabilistic risk assessment] results in place of the mean PRA results," it did not use 95th percentile values for Level 3 PRAs.[100] Specifically, the Petitioner mentions meteorological conditions and radionuclide release fractions as two parameters that TVA did not adequately assess for uncertainty in its SAMA analysis.[101] As a result, claims SACE, TVA's calculated consequence values are at least three or four times lower than they would have been had TVA

[98] FSEIS at 10-11.

[99] TVA's FSEIS references a final supplemental environmental review (FSER) completed in June 1995. [TVA], Supplemental Environmental Review, Final, Operation of Watts Bar Nuclear Plant (June 1995), available at http://www.tva.gov/environment/reports/wattsbar2/related.htm. That document lists more than a dozen permits, all of which expired more than a decade ago. Id. at 6. We are offered no information or discussion regarding their current status. Likewise, we are not told whether additional environmental requirements have been imposed in the past fifteen years.

[100] Petition at 9-10.

[101] Id. at 9.

consistently used 95th percentile PRAs, leading TVA to reject SAMAs that would be cost-effective if its costs were compared to the higher consequences.[102]

TVA and the NRC Staff assert that Contention 2 is inadmissible for failure to provide factual or expert support as required under 10 C.F.R. § 2.309(f)(1)(v) and failure to show a genuine dispute as required under 10 C.F.R. § 2.309(f)(1)(vi).[103] Both TVA and the NRC Staff emphasize that SACE has not pointed to a regulatory requirement to use 95th percentile values of radionuclide release fractions or meteorological conditions in PRA calculations.[104] TVA argues that NEPA does not require consideration of worst-case or highly speculative scenarios.[105] TVA and the NRC Staff also both state that the report by Dr. Edwin S. Lyman, on which the Petitioner relies to support Contention 2, was not attached to the petition, and both argue that, even if it were attached, SACE has not explained how the report, which is a study of the Indian Point facility, is relevant to Watts Bar.[106]

TVA maintains that Dr. Lyman's declaration in support of the Petition merely endorses the assertions set out in the petition instead of providing additional information and is therefore deficient. TVA also argues that because it followed approved NRC methodology in performing its PRA calculations, Contention 2 is an improper challenge to agency regulations. Additionally TVA asserts that the Petitioner has provided no contrary analysis to the one in TVA's FSEIS with regard to meteorological uncertainty and argues that radionuclide release fractions, which

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[102] Id. at 11-12.

[103] TVA Answer at 29; Staff Answer at 18, 20.

[104] TVA Answer at 41-42; Staff Answer at 18.

[105] TVA Answer at 33-34.

[106] Id. at 35-37; Staff Answer at 19-20.

are part of the Level 2 and not Level 3 PRA analysis, cannot form an appropriate basis for Contention 2, which challenges the Level 3 analysis.[107]

In its Reply, SACE emphasizes that TVA itself stated that use of 95th percentile values in its SAMA analysis would be a "reasonably accurate means of evaluating the impact of uncertainty in the PRA model used to assess the SAMA alternatives" and asserts that TVA stated in the FSEIS that it in fact had used 95th percentile values throughout its PRA uncertainty analysis.[108] Thus, SACE argues, TVA contradicts itself in the FSEIS discussion of SAMA analyses and fails to explain why it did not use 95th percentile values in considering Level 3 uncertainties.[109] The Petitioner also argues that 95th percentile values are reasonable and not worst-case results because 5 percent of consequence outcomes would be more severe; that because the MACCS2 code considers worst-case results, it uses considerably larger values; and that 95th percentile values for Level 3 PRAs are no more speculative than 95th percentile values for Level 1 and 2 PRAs, which TVA used.[110] Additionally, the Petitioner argues that TVA's and the NRC Staff's claims that Dr. Lyman's declaration concerning Indian Point is irrelevant to WBN Unit 2 are contradicted by TVA's own use of meteorological data from the Vogtle and Wolf Creek license renewal applications in its SAMA analysis, and that data from another Vogtle SAMA analysis (for the Vogtle ESP) actually supports SACE's position that use of 95th percentile meteorological data "would result in greater consequences by a factor of three or four."[111] Finally, SACE addresses the arguments concerning the expert support for Contention 2. First, it argues that this Board should follow the Yucca Mountain boards' decision

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[107] TVA Answer at 34-35, 41-42, 39.

[108] Reply at 7-8.

[109] Id. at 8-10.

[110] Id. at 10.

[111] Id. at 11-12.

to admit contentions supported by declarations, like the one from Dr. Lyman, that endorse the contentions without providing separate facts or opinions. Second, SACE argues that it was not required to attach Dr. Lyman's Indian Point report because Dr. Lyman's opinion offered in this proceeding is sufficient to support the contention without including the facts or opinions (including the Indian Point report) underlying that opinion and that, in any case, TVA and the NRC Staff are already familiar with the report.[112]

Board Ruling on the Admissibility of Contention 2 (SAMA -- Uncertainty Analysis)

The Board concludes that Contention 2 is not admissible.

SACE cites to "NEPA and 10 C.F.R. § 51.53(b) with respect to consideration of alternatives to mitigate the consequences of severe accidents" as the bases for its contention.[113] 10 C.F.R. § 51.53(b) requires that "the applicant shall discuss the same matters described in Sections 51.45, 51.51, and 51.52, but only to the extent that they differ from those discussed or reflect new information in addition to that discussed in the final environmental impact statement prepared by the Commission in connection with the construction permit." 10 C.F.R. § 51.45(c) states: "[t]he environmental report must include an analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects."[114] The requirements of NEPA and, by extension, the NRC's regulations implementing

[112] Id. at 12-14.

[113] Petition at 9.

[114] Although the SAMA methodology is available to provide the required analysis, neither NEPA nor NRC regulations require that the 10 C.F.R. § 51.45(c) analysis be performed using the SAMA methodology.

NEPA (10 C.F.R. Part 51) are subject to a "rule of reason," and only reasonably foreseeable environmental impacts must be addressed.[115]

Because SAMA had apparently not been addressed in the environmental documents associated with the construction permit for WBN Unit 2, the NRC Staff requested that TVA

> provide an analysis of alternatives available for preventing or mitigating adverse environmental effects of severe accidents for WBN Unit 2. The analysis should be consistent in scope and content with severe accident mitigation alternative analyses provided in support of recent license renewal applications, and should consider risks from both internal and external events.[116]

The NRC Staff did not further direct TVA as to how it should conduct this analysis, and thus did not establish a legal requirement regarding how the analysis of alternatives must be performed. We conclude that, consistent with 10 C.F.R. § 51.45(c), the Applicant is only required to provide an analysis that "considers and balances . . . alternatives available for reducing or avoiding adverse environmental effects."[117]

Regarding SACE's claim that the uncertainty evaluation should consider "the spread in both the meteorological variations and the radionuclide release fractions" at the 95th percentile,[118] as noted by TVA, "the Petitioners cite to no regulation or NRC guidance document that requires or even advises that meteorological uncertainty should be evaluated in the specific manner advocated by Dr. Lyman,"[119] nor does Petitioner cite to any "regulation or NRC guidance document that requires or even advises that uncertainty in radiological release

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[115] See Louisiana Energy Servs., LP (National Enrichment Facility), LBP-06-8, 63 NRC 241, 258-59 (2006); Long Island Lighting Co. (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 836 (1973).

[116] Letter from Joseph F. Williams, NRC Office of Nuclear Reactor Regulation, to Ashok Batnagar, Sr. Vice President of Nuclear Generation Development and Construction, TVA (June 3, 2008) at 2-3 (ADAMS Accession No. ML081210270) [hereinafter Staff Letter].

[117] 10 C.F.R. § 51.45(c).

[118] Petition at 12.

[119] TVA Answer at 28.

fractions should be evaluated using the 95th percentile of the uncertainty distributions for these values."[120]

On the contrary, as also noted by TVA, "the Nuclear Energy Institute ('NEI') has developed an industry template (NEI 05-01, Revision A), for completing SAMA analyses that 'relies upon NUREG/BR-0184 regulatory analysis techniques,'"[121] and "[t]he Staff has endorsed NEI 05-01, Revision A. TVA prepared its WBN Unit 2 SAMA analysis in accordance with NEI 05-01, Revision A."[122]

As explained by the Applicant:

> NEI 05-01 does not recommend the evaluation of uncertainties in meteorological conditions or radionuclide release fractions in this manner, as advocated by Petitioners, nor are these parameters included among the recommended sensitivity analyses in NEI 05-01. Instead, with respect to meteorological conditions, NEI 05-01 provides that applicants should "[e]xplain why the data set and data period are representative and typical," and suggests that it would be appropriate for applicants to choose, from a series of annual meteorological data sets, to use the single year with the highest does [sic] consequences. TVA's SAMA Analysis uses this conservative approach.[123]

The Petitioners have not indicated how, in following the guidance provided in NEI-05-01, TVA failed to perform a reasonable SAMA uncertainty analysis with regard to meteorological or radionuclide release fraction values.

SACE's second major claim regarding the sufficiency of TVA's SAMA analysis made by SACE is that "if the full uncertainty distribution for the Level 3 consequence calculation were evaluated, considering the spread in both the meteorological variations and the radionuclide release fractions, it is clear that the 95th percentile values would be at least an additional order of magnitude greater than the values computed with the mean CDF, LERF, meteorological

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[120] Id. at 29.

[121] Id. at 31.

[122] Id.

[123] Id. at 32.

conditions and release fractions."[124] This claim indicates a misunderstanding on the part of the Petitioner as to the use of the uncertainty analysis. As the NRC Staff notes, "[i]t is the Commission's policy that PRA evaluations done in support of regulatory decisions should be as realistic as practicable."[125] SAMA results are therefore based on the best-estimate PRA results. Sensitivity analyses, including uncertainty evaluations, are only used to "[e]valuate how changes in SAMA analysis assumptions would affect the cost-benefit analysis."[126] Thus, SACE has failed to support its claim that using 95th percentile values in a SAMA uncertainty analysis would affect the accident consequences analysis used to select cost-beneficial SAMA alternatives.

The final major claim made by SACE is that "[t]he increase in the value of mitigation measures would not only change the outcome for all Phase 2 SAMAs rejected by TVA but would also likely render many of the rejected Phase 1 SAMAs suitable for more detailed evaluation."[127] However, this also is an incorrect interpretation of the SAMA analysis process. Guidance on use of uncertainty evaluations states, "[I]f [rejected] SAMAs appear cost-beneficial in the sensitivity results, discussion of conservatisms in the analysis . . . and their impact on the results may be appropriate."[128] That is, contrary to Petitioner's assertions, previously rejected SAMAs do not become cost-beneficial on the basis of uncertainty analysis. Rather, a rejected

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[124] Petition at 12.

[125] Staff Response at 18 n.9 (citing Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities; Final Policy Statement, 60 Fed. Reg. 42,622, 42,629 (Aug. 16, 1995)). Notably, this same reference states the reason for using "PRA and associated analyses" is "to reduce unnecessary conservatism associated with current regulatory requirements, regulatory guides, license commitments, and staff practices" such as Petitioners seem to want added to the SAMA analysis. Id. at 42,628.

[126] Severe Accident Mitigation Alternatives (SAMA) Analysis, Guidance Document, NEI 05-01, at 30 (rev. A Nov. 2005) (ADAMS Accession No. ML060530203) [hereinafter NEI 05-01].

[127] Petition at 12.

[128] NEI 05-01 at 30.

SAMA that "appear[s]" cost-beneficial due to uncertainty evaluation may justify adding a discussion of conservatisms in the SAMA report. Thus, even if all of Petitioner's other claims were correct, consideration of the full range of uncertainties would not affect the selection of cost-effective SAMA alternatives. This contention therefore does not establish that it is "material to the findings the NRC must make."[129]

Because SACE Contention 2 does not satisfy the requirements of 10 C.F.R. § 2.309 (f)(1)(iv), (v), and (vi), it is not admissible.

Contention 3: Inadequate Consideration of Severe Accident Mitigation Alternatives With Respect to AC Backup for Diesel Generators

This contention has evolved from Commission reports concerning the potential for early containment failure due to hydrogen explosions during a severe accident in an ice condenser containment pressurized water reactor (such as WBN Unit 2). More specifically, it addresses the potential failure of hydrogen igniters, which are intended to prevent such hydrogen explosions, during a station blackout (SBO).[130] According to SACE, despite Commission findings that voluntary actions taken at TVA's other ice condenser plants would be sufficient to ensure operability of the hydrogen igniters, subsequent reports "raise doubts about the effectiveness of the voluntary measures that TVA has implemented at these reactors."[131] Thus, SACE argues, TVA's SAMA analysis for WBN Unit 2, which relies on similar voluntary commitments to conclude that no SAMAs are warranted, fails to comply with NEPA and 10 C.F.R. § 51.53(b).[132]

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[129] 10 C.F.R. § 2.309(f)(1)(iv).

[130] See Petition at 13-14.

[131] Id. at 14-15.

[132] Id. at 12, 15-16.

TVA and the NRC Staff both assert that this contention is inadequately supported and thus fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(v).[133] TVA argues that Dr. Lyman's declaration that he is responsible for the facts and opinion in the petition provides insufficient support, that the Petitioner mischaracterizes the contents of the WBN Unit 1 and Sequoyah reports on which it relies to support the contention, and that the Petitioner cannot show that any implementation errors at those other facilities would be repeated at WBN Unit 2.[134] TVA also asserts that the Petitioner's references to the reports fail to raise a genuine dispute and thus fail to meet 10 C.F.R. § 2.309(f)(1)(vi).[135]

The NRC Staff also argues that the inspection reports do not support the Petitioner's position for the same reasons given by TVA.[136] In addition, the NRC Staff asserts that the inspection reports demonstrate that the performance of the hydrogen igniters is an issue to be addressed through NRC's inspection program and is therefore not a material issue for an OL proceeding, contrary to 10 C.F.R. § 2.309(f)(1)(iv), and that Contention 3 seeks to impose new requirements on applicants and licensees and is therefore an impermissible challenge to the agency's regulations, in violation of 10 C.F.R. § 2.335(a).[137]

In its Reply, SACE first responds to the NRC Staff's materiality and regulatory challenge arguments by clarifying that Contention 3 is a NEPA contention alleging an inadequate alternatives evaluation.[138] SACE then reiterates its allegation that TVA's SAMA analysis fails to discuss the relative risks associated with the use of the backup diesel generator selected by

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[133] TVA Answer at 44-47; Staff Answer at 22.

[134] TVA Answer at 44-47.

[135] Id. at 47.

[136] Staff Answer at 22.

[137] Id. at 22-23.

[138] Reply at 14.

TVA and alternative methods of providing backup power to the hydrogen igniters, including "mandatory dedication of the power supply, independence of the backup power supply to the igniters from backup power to other systems, and seismic qualification."[139]

Board Ruling on the Admissibility of Contention 3 (SAMA – Backup Diesel Generators)

The Board concludes that Contention 3 is not admissible.

Petitioner represents that both WBN Unit 1 and TVA's Sequoyah nuclear facility have had reliability issues associated with the backup supply of AC power for their hydrogen igniters and speculate similar problems at WBN Unit 2. In support of this claim, we are referred by SACE to NRC inspection reports.[140] These reports, however, do not support the admissibility of this contention.

Specifically, in the WBN Unit 1 report it was noted that "all necessary cables and fittings were pre-staged . . . [t]raining on the actions necessary to provide backup power to the igniters was included in the licensee's B.5.b training . . . the 2MW Diesel Generator was tested by a regularly scheduled preventive maintenance."[141] Furthermore, the inspection concluded that an appropriate timeline for providing power to the hydrogen igniters could be met.[142]

The Sequoyah report did document a "Green finding" but concluded that enforcement action was not warranted because the "finding does not involve a violation of regulatory

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[139] Id. at 14-15.

[140] Letter from Eugene F. Guthrie, Chief, Reactor Projects Branch 6, to William Campbell, Chief Nuclear Officer and Executive Vice President, TVA (Aug. 7, 2008) (ADAMS Accession No. ML082210342) [hereinafter Watts Bar Unit 1 Inspection Report]; Letter from Eugene F. Guthrie, Chief, Reactor Projects Branch 6, to Preston D. Swafford, Chief Nuclear Officer and Executive Vice President, TVA (May 1, 2009) (ADAMS Accession No. ML091210186) [hereinafter Sequoyah Inspection Report].

[141] Watts Bar Unit 1 Inspection Report at 24-25.

[142] Id. at 24.

requirements and has very low safety significance."[143] Moreover, according to the NRC report, "[u]pon identification of the performance deficiency, the licensee took immediate corrective action and issued a procedure change form to correct the omission in the procedure."[144]

There is no information in either of these two inspection reports that demonstrates the backup diesel generator system used at WBN Unit 1 or the Sequoyah Nuclear Plant is not reliable or that the estimate of reliability of the proposed system at WBN Unit 2 is inaccurate.

Finally, although SACE asserts that TVA "should be required to conduct a Phase 2 analysis of a range of measures for ensuring the reliability of its alternate power supply, including mandatory dedication of backup diesel generators, independence of the backup power supply to the igniters from backup power to other systems, and seismic qualification,"[145] such assertions are bare, lacking entirely in support. While the Petitioner suggests a need for "mandatory dedication" and/or "independence of the backup power supply," it explains neither why it believes the proposed backup-to-backup diesel generators are not dedicated to the purpose of supplying power to the hydrogen igniters, nor why they are not an independent supply of the requisite power. Nor does the Petitioner explain why, other than a misapprehension of the cited incident reports (which, as we have noted, fail to support Petitioner's proposition), these particular backup diesel generators are insufficient to satisfy the very purpose for which the NRC has approved them. Additionally, neither of these propositions is supported by the affidavit of the Petitioner's expert. These assertions therefore fail to satisfy the requirements of Section 2.309(f)(1)(iv),(v) and (vi).

Petitioner alleges that TVA's SAMA analysis is insufficient to determine whether the alternative power supply for the hydrogen igniter will be effective and reliable, and whether the

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[143] Sequoyah Inspection Report at 25.

[144] Id. at 24.

[145] Petition at 13.

benefits of a more robust backup power supply would be cost-beneficial. SACE then goes on to argue that TVA should have considered such issues as the mandatory dedication of the power supply and the independence of the backup power supply to the igniters from backup power from other systems.[146] As pled, this constitutes a contention of omission. However, a properly pled contention of omission must challenge a specific portion of the application and provide a basis for demonstrating the alleged deficiency.[147] In this case, the Petitioner has failed to carry this burden. For example, in TVA's SAMA analysis the reduction of hydrogen detonation potential is addressed by TVA in SAMA numbers 108 and 109.[148] But SACE does not even cite, let alone analyze, deficiencies with these SAMAs. Likewise, TVA's SAMAs 1 through 26 address alternatives to increase the availability of backup power that are not addressed by Petitioner.[149] In short, Petitioner has not raised a genuine dispute with TVA's application which renders this contention inadmissible.

SACE was also obligated to provide support for its claim "that there is a genuine material dispute – that is, a dispute that could lead to a different conclusion on potential cost-beneficial

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[146] Id. at 16.

[147] 10 C.F.R. § 2.309(f)(1)(vi); see also Vogtle, LBP-07-3, 65 NRC at 254 ("Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed."); PFS, CLI-04-22, 60 NRC at 135-36 (upholding rejection of contention of omission where applicant's environmental report and safety analysis report contained the information petitioners asserted was not discussed and petitioners failed to address those portions of the application); Rancho Seco, LBP-93-23, 38 NRC at 247-48 (rejecting contention asserting no discussion of matters that were in fact addressed throughout environmental assessment).

[148] We note that on January 21, 2009, TVA submitted to the Commission Attachment 1, Final Watts Bar Unit 2 SAMA Report. This report, inter alia, described 283 SAMAs, including many that addressed options that could increase the availability of on-site emergency power, see e.g., FSEIS SAMA Analysis at 76-80 (SAMAs 1 through 26), and others that addressed alternatives to reduce the potential for hydrogen detonation, see id. at 97 (SAMAs 108 and 109). SACE offers no analysis of the SAMAs nor explains why any additional analysis is necessary or appropriate.

[149] Id.

SAMA's."[150] It failed to do so. SACE's Petition fails to provide even a ballpark figure for the cost of implementing any proposed alternatives.[151]

In Contention 3 SACE also asserts that "[TVA] should examine a reasonable range of measures for ensuring the reliability of the alternate power supply to the hydrogen igniters."[152] Thereafter, in its Reply, SACE clarified that through this contention it is alleging that, in order to satisfy NEPA, TVA's SAMA analysis must provide a comparison of alternatives to the use of a backup diesel generator to supply power for the hydrogen igniters.[153]

Accordingly, the Petitioner is attempting to put at issue in the NEPA context the scenario addressed in GSI-189, in which the Commission considered the susceptibility of ice condenser and Mark III containments to early failure from hydrogen combustion during a severe accident to be a very low-probability event.[154] Contention 3 thus has at its root the premise that alternatives

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[150] Entergy Nuclear Generating Co. (Pilgrim Nuclear Power Station), CLI-09-11, 69 NRC __, __ (slip op. at 6) (June 4, 2009).

[151] Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-17, 56 NRC 1, 12 (2002) ("Without any notion of cost, it is difficult to assess whether a SAMA may be cost-beneficial and thus warrant serious consideration. The Commission is unwilling to throw open its hearing doors to Petitioners who have done little in the way of research or analysis, provide no expert opinion, and rest merely on unsupported conclusions about the ease and viability of their proposed SAMA.").

[152] Petition at 16.

[153] Reply at 15.

[154] In GSI-189, the Commission considered this scenario on an industry-wide basis and, even though it was determined to be a low-probability event, ultimately urged licensees to consider (and implement) plant modifications to mitigate its potential. Resolution of Generic Safety Issues, NUREG-0933 (Aug. 2008), sec. 3, New Generic Issues, Issue 189: Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion During a Severe Accident (Rev. 1), available at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0933/sec3/189r1.htm.

to the implementation of an additional backup diesel generator to further protect against the consequences of severe accidents must be considered under NEPA.[155]

As explained above, SACE Contention 3 was not adequately supported by the Petitioner and, therefore, the following analysis is not essential to our conclusion that this contention is inadmissible. In addition, the issue discussed below was not analyzed by the parties in their pleadings. However, this contention touches on an issue (whether, and if so, to what extent, there is an obligation under NEPA to examine severe accidents such as the one postulated in GSI-189) on which Commission guidance appears conflicted. Specifically, the question raised is whether severe accidents are, by their nature and classification by the NRC, so remote and speculative that NEPA does not require their consideration.

In denying a petition for rulemaking submitted by the Nuclear Energy Institute the Commission stated that "the NRC must continue to consider SAMAs for issuance of a new or renewed operating license for a power reactor in order to meet its responsibilities under the National Environmental Policy Act (NEPA) . . . ."[156] However, the NEPA requirement to consider alternatives to the proposed action is governed by the "rule of reason" applicable to all NEPA-required alternatives analyses,[157] and does not extend to events that are remote and

[155] The construction permit for WBN Unit 2 predates GSI-189; however, as part of the SAMA analysis for the OL application, TVA noted that it intended to implement a backup power supply for the WBN Unit 2 hydrogen igniters. See FSEIS SAMA Analysis at 97 (SAMA 108). The implementation and performance in existing plants of this backup-to-backup power supply, approved by the NRC as a voluntary measure in response to GSI-189, is, according to the NRC Staff, examined and enforced by the NRC Staff as part of the current licensing basis of those plants. Staff Answer at 22.

[156] 66 Fed. Reg. 10,834, 10,834 (Feb. 20, 2001).

[157] Natural Res. Def. Council v. Morton, 458 F.2d 827, 834 (D.C. Cir. 1972).

speculative.[158] In contrast with its statement in NEI, the Commission's expressed view regarding its NEPA responsibilities is that "the agency's environmental review . . . need only account for those [impacts] that have some likelihood of occurring or are reasonably foreseeable;"[159] that "low probability is the key to applying NEPA's rule-of-reason test to contentions that allege that a specified accident scenario presents a significant environmental impact that must be evaluated;"[160] and that "[i]f the accident sought to be considered is sufficiently unlikely that it can be characterized fairly as remote and speculative, then consideration under NEPA is not required as a matter of law."[161]

The remote and speculative nature of an event should be distinguished from the risk of that event. Whether an event or a "scenario" is remote and speculative is simply a question of its probability of occurrence, while "risk," which the Commission discussed in NEI, is the product obtained by multiplying the probability of occurrence by the consequences of the event or scenario. Thus an event could be of exceedingly low probability but have enormous consequences and therefore the "risk," as the term is used in NRC consideration of severe accidents, could be significant.

The Court of Appeals for the Ninth Circuit interpreted the CEQ regulations to the effect that NEPA requires dealing with uncertainties by inclusion in an "EIS [of] 'a summary of existing

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[158] Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), CLI-90-4, 31 NRC 333 (1990); Yankee Atomic Elec. Co. (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 88-90 (1996), aff'd in part, rev'd in part on other grounds, CLI-96-7, 43 NRC 235 (1996); Calvert Cliffs 3 Nuclear Project, LLC and Unistar Nuclear Operating Services, LLP (COL for Calvert Cliffs Unit 3), LBP-09-04, 69 NRC 170, 208 (2009).

[159] Louisiana Energy Servs., LP (National Enrichment Facility), LBP-06-08, 63 NRC 241, 258-59 (2006) citing Louisiana Energy Servs., LP (National Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005); see also Long Island Lighting Co. (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 836 (1973).

[160] Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), CLI-90-7, 32 NRC 129 (1990).

[161] Vermont Yankee, CLI-90-4, 31 NRC 333.

credible scientific evidence . . . relevant to evaluating the reasonabl[y] foreseeable significant adverse impacts' . . . [regarding] those events with potential catastrophic consequences 'even if their probability is low.'" This statement, however, is qualified by the following language: "provided that the analysis of impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason."[162]

Furthermore, in Private Fuel Storage (PFS) the Commission, ruling on the agency's NEPA responsibilities regarding terrorist attacks, noted that under NEPA it looks to the "'reasonably foreseeable' impacts of simply licensing the facility," not the "'reasonably foreseeable' effects of a successful [terrorist] attack."[163] Accordingly, applying the reasoning articulated by the Commission in PFS, the question here is whether severe accidents which give rise to SAMAs are the reasonably foreseeable results "of simply licensing the facility."

Supporting the view that severe accidents by their very nature are remote and speculative is the fact that the NRC distinguishes them from those events that must be accommodated by the plant design ("design basis events"). This distinction is of longstanding import, being, for example, the sole subject of the Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants.[164] In this policy statement, the Commission described severe accidents as being "beyond the substantial coverage of design basis events."[165]

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[162] San Luis Obispo Mothers for Peace v. NRC, 449 F.3d 1016, 1033 (9th Cir. 2006).

[163] Private Fuel Storage, LLC, (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 353 (2002).

[164] 50 Fed. Reg. 32,138 (Aug. 8, 1985).

[165] Id. at 32,139. Design Basis Events are defined in 10 C.F.R. § 50.49(b)(1) to be those "conditions of normal operation, including anticipated operational occurrences, design basis accidents, external events, and natural phenomena for which the plant must be designed . . ." 10 C.F.R. § 50.49(b)(1)(ii).

Therefore, SAMA analysis goes beyond the design basis, seeking mechanisms and potential plant modifications not mandatorily incorporated in plant design, but which, if implemented, could reduce the consequences of severe accidents. Here the Commission has arguably used its discretion to advance the public health and safety beyond those required by statute, and beyond the examinations required under NEPA, to implement additional measures to "reduce the chances of occurrence of a severe accident."[166] The instant circumstance is analogous to that of the Commission's exercise of its discretion to implement additional protective measures against aircraft impingement that it deemed beyond the design basis threat,[167] a determination that the Court of Appeals for the Ninth Circuit agreed was an exercise of the NRC's discretionary authority and not within the explicit requirements of the AEA.[168]

The aggregate Large Early Release Frequency (LERF) for all severe accidents at WBN Unit 2 is estimated in the application to be 3.8×10^{-7} /yr.[169] This appears to be in line with the Commission's guidance in PFS to the effect that the agency uses a threshold probability for design basis events of one in ten million for nuclear power plants.[170] Furthermore, any single specific accident, such as the station blackout raised in this contention, will have a much smaller LERF. Severe accidents that are beyond design basis events have such low probability as to

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[166] 50 Fed. Reg. at 32,139.

[167] Consideration of Aircraft Impacts for New Nuclear Power Reactors, 74 Fed. Reg. 28,112, 28,112 (June 12, 2009).

[168] Public Citizen v. NRC, No. 07-71868, slip op. at 9615, 9633 (9th Cir. July 24, 2009) (noting that the NRC is not required to regulate to prevent "each and every" such event or require "absolute protection" but rather it "permits acceptance of some level of risk"). The NRC's regulations incorporate this precept, requiring nuclear plant designs to guard against reasonably foreseeable events and conditions but treating certain remote and speculative events as outside the scope of the design requirements.

[169] FSEIS SAMA Analysis at 31.

[170] PFS, CLI-01-22, 54 NRC at 259.

not be "credible" events.[171] This low level of likelihood is in the range at which it is appropriate to consider whether the remote and speculative exception for events which must be analyzed under NEPA is applicable.[172]

It is reasonable to question whether the "rule of reason," which limits the breadth of NEPA evaluations, should eliminate any requirement for alternatives analysis in respect of severe accidents by the Commission in fulfilling its NEPA obligations. We recognize that the Commission has made the determination that it should perform SAMA analysis, but it may well be doing so under its authority to protect the public health and safety and the environment, not because NEPA requires it to do so. This view of the Commission's policy regarding analysis of severe accidents would reconcile any apparent discrepancy with its policy respecting beyond design basis threats.

However, since this complicated issue was not addressed by the parties and its resolution is not necessary to our conclusion that SACE Contention 3 is not admissible, its resolution must await another day and a more appropriate vehicle for its analysis.

Contention 4: Inadequate Discussion of Need for Power and Energy Alternatives

The Petitioner argues that TVA has failed to demonstrate any need for the electric power that would be generated by WBN Unit 2.[173] Citing a report prepared by Dr. Arjun Makhijani, SACE asserts that (1) TVA's energy demand projections are based on outdated studies; (2) TVA relies inconsistently on its own 1995 Integrated Resource Plan and Environmental Impact Statement (1995 IRP), which excluded WBN Unit 2 from its "preferred portfolio" of 1995-2020 energy options; (3) TVA fails to justify its rejection of the planning process established in the

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[171] See id.

[172] This situation will become compounded as more advanced designs, which have used risk assessment insights, drive down their projected LERF's even further.

[173] Petition at 16.

1995 IRP; (4) TVA's FSEIS does not analyze the effects of the current economic downturn; (5) TVA's FSEIS does not adequately discuss alternative energy sources or energy efficiency; (6) TVA needs to provide a more detailed alternatives analysis because it cannot rely on the EIS from the 1995 IRP while rejecting its conclusions; (7) TVA's FSEIS mistakenly assumes that only coal or nuclear can supply baseload power; and (8) an IRP revision process that is currently ongoing must be completed before TVA can adequately analyze the need for power and power alternatives.[174]

TVA attacks each basis for this contention separately. In response to the Petitioner's claim that TVA relies on outdated studies and inappropriately relies on its 1995 IRP EIS, TVA argues that SACE mischaracterizes the need for power analysis in the 2007 FSEIS for WBN Unit 2, which, it represents, not only references but also updates the earlier environmental documents. Accordingly, TVA argues that the Petitioner has failed to raise a genuine dispute with TVA's need for power analysis.[175] TVA further argues that, in line with the Vogtle board's decision on a similar contention, the fact that an IRP revision process has been instituted does not support a claim that the FSEIS is inadequate because of its reliance on earlier studies.[176] Additionally, TVA asserts that SACE has not shown how the current economic recession is material to the long-term need for power in light of the inherent uncertainties in predicting future energy demand, contrary to 10 C.F.R. § 2.309(f)(1)(iv).[177] Likewise, TVA argues that SACE has not shown how a more pessimistic economic prediction than TVA's own low-growth and no-growth scenarios would impact the analysis, particularly in light of TVA's other goals of "'additional fuel diversity, operating flexibility, and a lower delivered cost of power,'" thus failing

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[174] Id. at 17-21.

[175] TVA Answer at 58-59.

[176] Id. at 60 (citing Vogtle, LBP-07-3, 65 NRC at 272).

[177] Id. at 63-64.

to raise a genuine dispute.[178] In response to the Petitioner's arguments concerning alternatives to nuclear power, TVA lists a number of sections of the FSEIS discussing alternatives that it asserts the Petitioner has ignored and argues that the 1995 IRP did include an option to complete WBN Unit 2 if nuclear performance improved.[179] Accordingly, TVA asserts that its decision to operate WBN Unit 2 is consistent with the IRP and TVA could rely on the analysis in the IRP EIS.[180] Thus, TVA argues that the Petitioner has not raised a genuine dispute.[181] Finally, TVA asserts that SACE has not provided adequate factual support for its claim that wind energy should have been analyzed as an alternative to baseload nuclear energy because the documents it relies on do not show that wind can have a capacity factor high enough for a baseload generation source.[182]

The NRC Staff also opposes the admission of Contention 4 on the grounds that it is outside the scope of, and not material to, an OL proceeding, contrary to 10 C.F.R. § 2.309(f)(1)(iii) and (iv).[183] The NRC Staff notes that no discussion of need for power or alternative energy sources is required in a supplemental environmental report at the OL stage under 10 C.F.R. § 51.53(b) or in a final supplemental environmental impact statement under 10 C.F.R. § 51.95(b), and argues that a contention challenging a need for power or energy alternatives analysis at the OL stage is thus outside the scope of the proceeding and not

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[178] Id. (quoting FSEIS at 15).

[179] Id. at 65-67.

[180] Id. at 67.

[181] Id. at 66-67.

[182] Id. at 67-68. TVA also asserts that the Petitioners' alternatives argument is outside the scope of the proceeding but does not appear to explain why it would be outside the scope of the proceeding. See id. at 68.

[183] Staff Answer at 23-24.

material to the findings the Board must make in the proceeding.[184] The NRC Staff also asserts that the Petitioner's raising this contention without seeking a waiver under 10 C.F.R. § 2.335(b) constitutes an impermissible challenge to Commission regulations, specifically 10 C.F.R. § 51.53(b).[185] Additionally, the NRC Staff addresses the Petitioner's argument, based on a the licensing board's ruling in the Vogtle ESP proceeding, that TVA opened the door to the admissibility of Contention 4 by including need for power and energy alternatives analyses in its FSEIS. The NRC Staff argues that because of the difference in procedural posture between an ESP and an OL proceeding, where the ESP petitioner runs the risk of waiving a future COL-stage contention if it does not raise the contention at the ESP stage, the Vogtle ruling is not applicable to this proceeding.[186]

In its Reply, SACE first addresses the NRC Staff's argument that 10 C.F.R. § 51.53(b) excludes need for power and alternative energy source analyses from the scope of an OL proceeding. SACE argues that a portion of Section 51.53(b) provides for consideration of new information or matters that differ from those discussed at the construction permit stage, and asserts that it is therefore not precluded under NEPA or Section 51.53(b) from challenging TVA's analysis of any changed circumstances since the EIS for the WBN Unit 2 construction permit was prepared.[187] Next, SACE responds to TVA's assertion that the 2007 FSEIS updates the 1995 IRP by arguing that, while the FSEIS includes updated data points, it relies on the analyses from the IRP and that, in any event, SACE has also challenged the economic forecasts in the FSEIS for failing to consider the long-term effects of the current economic

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[184] Id. at 24-25.

[185] Id. at 25-26.

[186] Id. at 26-27.

[187] Reply at 15-16.

downturn and projecting only through 2015.[188] The Petitioner then argues that the Vogtle board's ruling (that a pending new demand study does not create an admissible contention) is inapplicable to this contention because the Petitioner here has specifically argued, with the support of expert opinion, that the FSEIS is inadequate.[189] In response to TVA's position that unpredictability in demand forecasts precludes the Petitioner from asserting the need for a longer-term forecast, SACE states that its claim is based on TVA's own financial statements in the current economic downturn, together with its past overestimation of future demand.[190] According to SACE, its claim is also supported by pending legislation that could further impact energy demand, and the contention is therefore specific and supported, unlike similar contentions that have been rejected in other proceedings.[191] In response to TVA's reference to its low- and no-growth scenarios, SACE emphasizes that it wants a negative-growth scenario to be included in the need analysis. It argues that this scenario would be material because the current economic downturn is likely to have long-term effects that would be different from those predicted under the low- and no-growth scenarios.[192] SACE then notes that it is challenging the other goals TVA claims will be achieved by WBN Unit 2. It argues that efficiency and alternative energy sources, which it claims TVA has not adequately analyzed, could also achieve fuel diversity and operating flexibility and that decreasing power costs would occur from WBN Unit 2 only if energy demand increases, which SACE considers a "very questionable assumption."[193] Along these same lines, the Petitioner argues that TVA overlooked the combination of wind

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[188] Id. at 16-17.

[189] Id. at 17.

[190] Id. at 18-19.

[191] Id.

[192] Id. at 19-20.

[193] Id. at 20.

power with compressed air storage and a small natural gas unit. SACE claims that the reports it cites in support of this contention in fact indicate that the combination of wind, compressed air, and natural gas could provide baseload capacity.[194] Finally, SACE argues that the deference that NRC has given to business choices of other applicants applies only to private businesses and not to a federal agency like TVA.[195]

Board Ruling on the Admissibility of Contention 4 (Need and Alternatives)

The Board concludes that Contention 4 is not admissible.

At this stage in this proceeding, the Petitioner has the opportunity to challenge the adequacy of TVA's application for an operating license for the proposed Unit 2 at the Watts Bar Nuclear Plant. The adequacy of that application must be determined by reference to the regulations promulgated by the Commission to ensure that it has adequate information on which to evaluate the safety and environmental impact of the proposed action. With regard to environmental impact, the Commission promulgated 10 C.F.R. Part 51, which contains the environmental protection regulations applicable to the Commission's licensing and related regulatory functions. In promulgating these regulations, the Commission expressly stated that it was its intention to implement Section 102(2) of NEPA.[196]

While the Commission has authority to regulate many different types of activity, it does not treat all proposed actions the same. The Commission does not, and need not, require the same environmental information in an application for an operating license that it does in an application for a construction permit (CP) or a combined license (COL).

Specifically, 10 C.F.R. § 51.53(b) establishes the requirements for an applicant's submission of environmental information at the operating license stage. Pursuant to that

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[194] Id. at 20-21.

[195] Id. at 21-22.

[196] 10 C.F.R. § 51.1(a).

regulation, the applicant must submit a document denominated as the "Supplement to Applicant's Environmental Report – Operating License Stage." In this document

> the applicant shall discuss the same matters described in §§ 51.45, 51.51, and 51.52 [which would have been initially discussed in the ER at the construction permit stage], but only to the extent that they differ from those discussed or reflect new information . . . .[197]

The clear intent of this provision is to avoid duplication and to highlight new information. However, this regulation then specifies limitations on this general requirement. It goes on to state that:

> No discussion of need for power, or of alternative energy sources . . . is required in this report [the Supplement to Applicant's Environmental Report – Operating License Stage].[198]

Since TVA was thus not obligated to include any discussion of the need for power or of alternative energy sources in its application for an operating license, a challenge to the adequacy of TVA's discussion of these issues is not within the scope of this proceeding at this point. Accordingly, we cannot admit this contention.[199]

Admittedly, the fact pattern presented here, where construction of the facility is suspended for more than a quarter century, is unusual and not anticipated or discussed by the regulations. Therefore, the Commission might well decide that a full discussion of the need for power and of alternative energy sources should be incorporated into the final environmental impact statement.[200] But at this stage of this proceeding, absent an adequately supported request to waive the application of this rule pursuant to 10 C.F.R. § 2.335, the Board is bound by Section 51.53(b) and, even in light of the unusual circumstances of this case, this contention cannot be admitted.

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[197] Id. § 51.53(b).

[198] Id.

[199] Id. § 2.309(f)(1)(iii).

[200] See id. § 51.95(b).

Contention 5: Inadequate Basis for Confidence in Availability of Spent Fuel Repository and Safe Means of Interim Spent Fuel Storage

This contention alleges deficiencies in the Commission's Proposed Waste Confidence Decision and Proposed Spent Fuel Storage Rule.[201] SACE argues that the Commission has "no technical basis for a finding of reasonable confidence that spent fuel can and will be safely disposed of at some time in the future," thus undermining both the Commission's stated policy and 10 C.F.R. Part 51, Table S-3's assumption of no radioactive release from a spent fuel repository.[202] The Petitioner therefore "seeks to enforce, in this specific proceeding, the NRC's commitment that 'it would not continue to license reactors if it did not have reasonable confidence that the wastes can and will in due course be disposed of safely.'"[203] Conceding that this contention challenges a generic rule, SACE nonetheless asks this Board to admit the contention and hold it in abeyance "in order to avoid the necessity of a premature judicial appeal if this case should conclude before the NRC has completed the rulemaking proceeding."[204]

Both TVA and the NRC Staff oppose this contention as an inadmissible challenge to the Commission's waste policy rule and ongoing waste policy rulemaking.[205] The NRC Staff also asserts that, as a challenge on a generic issue, the contention is outside the scope of this proceeding and that, because SACE failed to attach expert declarations that it claimed to rely on

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[201] Petition at 21; Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation, 73 Fed. Reg. 59,547 (Oct. 9, 2008); Waste Confidence Decision Update, 73 Fed. Reg. 59,551 (Oct. 9, 2008).

[202] Petition at 24-25.

[203] Id. at 22 (quoting 73 Fed. Reg. at 59,552).

[204] Id. at 23-24.

[205] TVA Answer at 70-71; Staff Answer at 28-30.

to support the contention, it failed to allege adequate facts or expert support for the contention to be admissible.[206]

Additionally, both TVA and the NRC Staff oppose the Petitioner's request to have the contention admitted and held in abeyance, asserting that there is no legal basis for admitting and holding in abeyance an otherwise inadmissible contention.[207] TVA also asserts that the contention should not be referred to the Commission because the Petitioner does not show how the contention "'raises significant and novel legal or policy issues, and resolution of the issues would materially advance the orderly disposition of the proceeding.'"[208]

In its Reply, SACE does not dispute TVA's and the NRC Staff's arguments against the admissibility of Contention 5. Instead, it states that it is raising the issue in order to preserve it for appeal.[209]

Board Ruling on Contention 5 (Spent Fuel Storage)

The Board concludes that Contention 5 is not admissible.

As the Petitioner concedes,[210] this contention challenges an ongoing rulemaking (the Proposed Waste Confidence Decision and the Proposed Spent Fuel Storage Rule). Commission precedent holds that a contention challenging the subject matter of a pending rulemaking is inadmissible.[211] Additionally, we note that a number of licensing boards have recently found contentions similar to Contention 5 inadmissible as challenges to a Commission

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[206] Staff Answer at 30-31.

[207] TVA Answer at 71-72; Staff Answer at 31.

[208] TVA Answer at 72-73 (quoting 10 C.F.R. § 2.341(f)(1)).

[209] Reply at 22.

[210] Id.

[211] Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 345 (1999) (citing Potomac Elec. Power Co. (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974)).

rule or rulemaking.[212] Contention 5 also challenges Table S-3 of 10 C.F.R. § 51.51.[213] A contention that directly challenges a Commission rule is inadmissible pursuant to 10 C.F.R. § 2.335(a).

The Petitioner asks in the alternative that the Board either admit the contention and hold it in abeyance or refer it to the Commission.[214] We know of no authority that authorizes a licensing board to admit and hold in abeyance an otherwise inadmissible contention. Nor do we find, pursuant to 10 C.F.R. § 2.341(f)(1), that our ruling on Contention 5 "raises significant and novel legal or policy issues" or that referring the contention to the Commission "would materially advance the orderly disposition of the proceeding." Thus, the Board denies SACE's request to either hold Contention 5 in abeyance or refer it to the Commission.

Contention 6: TVA's EIS Fails To Satisfy The Requirements Of NEPA Because It Does Not Contain An Adequate Analysis Of The Environmental Effects Of The Impact Of A Large, Commercial Aircraft Into The Watts Bar Nuclear Plant.

Citing the Commission's recent Power Reactor Security Rule[215] and Aircraft Impacts Rule,[216] SACE asserts that aircraft attacks are reasonably foreseeable and that NEPA therefore requires an analysis of the environmental impacts of such attacks.[217] Though SACE acknowledges that aircraft attacks are discussed in TVA's FSEIS, it claims that "TVA . . .

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[212] See, e.g., Detroit Edison Co. (Fermi Nuclear Power Plant, Unit 3), LBP-09-16, 70 NRC__, __ (slip op. at 16-19)(July 31, 2009); Tennessee Valley Auth. (Bellefonte Nuclear Power Plant, Units 3 and 4) (Ruling on Request to Admit New Contention) at 11-12 (Apr. 29, 2009) (unpublished); Virginia Elec. & Power Co. (Combined License Application for North Anna Unit 3) (Order Denying Motion to Admit Proposed Contention Nine) at 2-3, 6-7 (June 2, 2009) (unpublished).

[213] Petition at 21.

[214] Id. at 23-24.

[215] Power Reactor Security Requirements, 74 Fed. Reg. 13,926 (Mar. 27, 2009).

[216] Consideration of Aircraft Impacts for New Nuclear Power Reactors, 74 Fed. Reg. at 28,112.

[217] Petition at 27-29.

attempts to downplay its NEPA obligations because '[t]he likelihood of [an attack] occurring is . . . remote in light of today's heightened security awareness.'"[218] The Petitioner also argues that TVA improperly relied on a generic conclusion by the Electric Power Research Institute (EPRI) that aircraft crashes would not result in radionuclide releases from existing reactors[219] and that TVA's description of potential mitigation measures in case of a terrorist attack consists of no more than "vague, generic claims about the steps it has taken since September 11th to prepare for a terrorist attack."[220] Thus, SACE asserts, TVA's analysis of the environmental impacts from an aircraft attack is inadequate to satisfy NEPA.

Both TVA and the NRC Staff assert that this contention is foreclosed by Commission case law. The NRC Staff represents that "[b]oards are required to follow Commission decisions that NEPA-terrorism contentions are inadmissible unless the proposed licensing action occurs within the Ninth Circuit's jurisdiction."[221] TVA states that, as a matter that has already been considered by the Commission, the issue of whether the Ninth Circuit's ruling in San Luis Obispo Mothers for Peace requiring consideration of terrorist attacks under NEPA applies to NRC proceedings in other jurisdictions cannot be reconsidered by a licensing board.[222] Both TVA and the NRC Staff also note that the United States Court of Appeals for the Third Circuit has recently upheld the Commission's position that terrorist attacks are not reasonably foreseeable so as to require analysis under NEPA.[223] The NRC Staff adds that the recent Power Reactor Security Rule and Aircraft Impact Rule also do not support the Petitioner's

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[218] Id. at 29 (quoting FSEIS at 75).

[219] Id. at 29-30.

[220] Id. at 30.

[221] Staff Answer at 33.

[222] TVA Answer at 76-77.

[223] Id. at 77; Staff Answer at 33.

position because those are security rules, which do not speak to foreseeability from a NEPA standpoint, and because the Aircraft Impact Rule defines aircraft impacts as beyond design basis events, which, by definition, excludes them from the category of reasonably foreseeable events.[224]

In its Reply, SACE concedes that the Commission does not require consideration of terrorist attacks as part of an environmental review.[225] As with Contention 5, SACE states that it is raising the issue in this contention in order to preserve it for appeal.[226]

Board Ruling on Contention 6 (Possible Aircraft Impacts)

The Board concludes that Contention 6 is not admissible.

The Commission has ruled that NEPA does not require applicants or licensees to consider terrorist attacks as part of their environmental reviews.[227] Notwithstanding the Ninth Circuit's ruling in Mothers for Peace, the Commission held in Oyster Creek and Grand Gulf that, outside the Ninth Circuit,[228] it will continue to follow prior agency precedent by excluding terrorist attacks from the scope of NEPA reviews.[229] Other licensing boards faced with similar

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[224] Staff Answer at 34-36.

[225] Reply at 23.

[226] Id.

[227] See PFS, CLI-02-25, 56 NRC at 357; accord AmerGen Energy Co., LLC (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 128-31 (2007); Sys. Energy Res., Inc. (Early Site Permit for Grand Gulf ESP Site), CLI-07-10, 65 NRC 144, 146-47 (2007).

[228] The Watts Bar facility, which is located in Tennessee, is in the Sixth Circuit. See U.S. Courts, the Federal Judiciary, http://www.uscourts.gov/courtlinks/.

[229] Oyster Creek, CLI-07-8, 65 NRC at 128-29; Grand Gulf, CLI-07-10, 65 NRC at 146. As the NRC Staff points out, Staff Answer at 33, the United States Court of Appeals for the Third Circuit has upheld the Commission's interpretation. See N.J. Dep't of Envtl. Prot. v. NRC, 561 F.3d 132 (3d Cir. 2009).

contentions have rejected them as outside the scope of a licensing proceeding.[230] SACE does not dispute that this contention would be inadmissible under Commission precedent. Instead, it states that it disagrees with the Commission's interpretation of NEPA.[231] But "the adjudicatory process [before this Board] is not the proper venue for a petitioner to set forth any contention that merely addresses his or her own view regarding the direction regulatory policy should take."[232]

The Petitioner also cites the Commission's recent Power Reactor Security Rule[233] and Aircraft Impacts Rule[234] as support for Contention 6.[235] But neither of these rules is NEPA-based, nor do they address Commission precedent excluding terrorist attacks from the scope of the agency's NEPA reviews. Thus, these rules do not support SACE's contention.

The Board therefore finds Contention 6 not admissible because it raises issues that are outside the scope of this proceeding.

Contention 7: Inadequate Consideration of Aquatic Impacts

This contention challenges the reasonableness of, and the adequacy of support for, TVA's conclusion that the cumulative impacts on aquatic ecology from WBN Unit 2 will be

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[230] See Vogtle, LBP-07-3, 65 NRC at 269 & n.16; Bellefonte, LBP-08-16, 68 NRC at 394; Progress Energy Carolinas, Inc. (Shearon Harris Nuclear Power Plant, Units 2 and 3), LBP-08-21, 68 NRC 554, 566-69 (2008); South Carolina Elec. & Gas Co. (Virgil C. Summer Nuclear Station, Units 2 and 3), LBP-09-2, 69 NRC 87, 100-05 (2009).

[231] Reply at 23.

[232] LES, LBP-04-14, 60 NRC at 55 (citing Peach Bottom, ALAB-216, 8 AEC at 21 n.33).

[233] 74 Fed. Reg. 13,926 (revising 10 C.F.R. Part 73 and creating 10 C.F.R. § 50.54(hh)). This new rule does not address the analysis of aircraft impact.

[234] Id. at 28,112. Although this rule requires analysis of aircraft impact it excludes reactors whose construction permits were issued prior to July 13, 2009. See 10 C.F.R. § 50.150(a)(3).

[235] Petition at 27.

insignificant.[236] Specifically, the Petitioner asserts that: (1) TVA's assessment that the Tennessee River ecosystem is currently in good health is erroneous; (2) TVA "relies on outdated and inadequate data to predict the effects of WBN Unit 2's cooling system on fish, mussels, and other aquatic organisms," specifically with respect to entrainment, impingement, and thermal impacts from the intake and discharge structures; and (3) TVA fails to address adequately the impacts of other power facilities on the Tennessee River ecosystem.[237] The Petitioner claims that, contrary to TVA's conclusions, the health of the Tennessee River ecosystem is in decline, and, in particular, TVA's characterization of the mussel population health as "excellent" is incorrect.[238] SACE claims that the data TVA relied on for its entrainment analysis fails to take into account uneven icthyoplankton distribution across time and space and that TVA did not conduct a follow-up survey to investigate the cause of an increased impingement level in an earlier survey. SACE further claims that TVA's conclusions regarding thermal impacts fail to consider (1) the acknowledged need to relocate mussels from the vicinity of the Supplemental Condenser Cooling Water System (SCCW) discharge, (2) spatial and temporal distribution of icthyoplankton, (3) characteristics of the thermal plume and mixing zone, (4) temperatures at the core of the thermal plume, (5) the effects of high temperatures on fish eggs and larvae, and (6) the impacts of a potential overflow of hot water from the holding ponds.[239] Finally, SACE claims that TVA has not adequately addressed the cumulative impacts of WBN Unit 2 in combination with impoundments and other industrial facilities, including both fossil fuel and nuclear power plants, in the region.[240]

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[236] Id. at 31.

[237] Id. at 32-36.

[238] Id. at 32-33.

[239] Id. at 33-36.

[240] Id. at 36.

Both TVA and the NRC Staff address each of the Petitioner's bases for this contention separately. TVA characterizes the first basis, regarding the current health of the Tennessee River ecosystem, as a demand for additional studies that does not explain why such additional studies would be required. TVA argues that Contention 7 is thus similar to contentions that were rejected in the Vogtle and Bellefonte proceedings.[241] According to TVA, the contention fails to raise a genuine dispute.[242] The NRC Staff asserts that the Petitioner fails to allege how TVA's analysis, as described in the FSEIS, was incorrectly done or how any required steps were omitted, thus failing to raise a genuine dispute with TVA's application.[243]

On the second basis, alleging that the applicant relied on "outdated and inadequate data" to analyze cooling system impacts on aquatic organisms, TVA notes the Tennessee Department of Environment and Conservation (TDEC) approved its 1996-97 impingement and entrainment monitoring program and that TDEC determined that the WBN Condenser Cooling Water System (CCW) is the best technology available to minimize certain adverse environmental impacts, including entrainment.[244] TVA argues that SACE has not explained "why the Board should question" these findings by TDEC and that a draft EPA guidance document suggesting the need for more detailed studies does not raise a genuine dispute on this point.[245] TVA also points to various sections of the FSEIS addressing entrainment, impingement, and thermal impact data and argues that the Petitioner ignores or mischaracterizes the information in the FSEIS and other application-related documents,

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[241] TVA Answer at 81-82 (citing Vogtle, LBP-07-3, 65 NRC at 255-57; Bellefonte, LBP-08-16, 68 NRC at 398-402).

[242] Id.

[243] Staff Answer at 39-40. On the topic of mussels, the NRC Staff notes that populations in different locations were given different scores so that some were actually identified to be in "poor" health, in addition to the ones in "good" or "excellent" health. Id. at 39.

[244] TVA Answer at 84.

[245] Id. at 84-85.

particularly TVA's 1996-97 impingement and entrainment study.[246] In the context of thermal impacts, TVA argues that SACE has not explained how the additional data it seeks would significantly impact TVA's analysis.[247] TVA also argues that the Petitioner's holding pond overflow scenario is speculative and would, in any case, be limited by TVA's NPDES permit.[248] The NRC Staff asserts that the second basis does not support admission of Contention 7 because it merely seeks additional site-specific data without explaining how TVA's analysis was erroneous or how the new data would affect TVA's conclusions.[249]

TVA asserts that the third basis for Contention 7, alleging an inadequate analysis of impacts from other facilities on the Tennessee River, also fails to raise a genuine dispute. TVA states that this claim by SACE misses the mark because the FSEIS does discuss the impact of other facilities in the context of the current conditions of the river and because the Petitioner cites neither a requirement for an individual analysis of each facility nor any potential synergistic effects between WBN Unit 2 and any other facility that would suggest that such an analysis would be required.[250] The NRC Staff also emphasizes the lack of any allegedly "unconsidered cumulative effect" and argues that Contention 7 is inadmissible under this basis because it lacks specific support.[251] The NRC Staff also points to the fact that SACE has not discussed the FSEIS sections addressing cumulative impacts and, as a result, it argues that SACE has not

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[246] Id. at 82-83, 85-90.

[247] Id. at 90.

[248] Id.

[249] Staff Answer at 40-42.

[250] TVA Answer at 91-93 (citing Calvert Cliffs, LBP-09-4, 69 NRC at 201-05).

[251] Staff Answer at 43. The NRC Staff also cites Calvert Cliffs as addressing a similar claim to that raised by SACE in Contention 7. Id.

raised a genuine dispute.[252] In addition, the NRC Staff states that the actions requested by the Petitioner are outside the scope of NEPA, "which is limited to inquiry, not action."[253]

In its Reply, SACE begins by noting that the Vogtle and Bellefonte boards admitted portions of contentions that were similar to SACE Contention 7 and held that the description of the aquatic baseline could be relevant to portions of the contentions that were admitted.[254] Additionally, SACE argues that, unlike the Bellefonte petitioners, it has challenged specific portions of TVA's FSEIS.[255] The Petitioner next asserts that Dr. Young's declaration supports its position that more site-specific studies are needed concerning the health of the ecosystem and that TVA and the staff "flyspeck" Dr. Young's evidence concerning current ecosystem health in their answers, supporting the existence of a genuine dispute.[256] SACE also argues that it has shown, through the declaration of Dr. Young, that TVA's alleged misuse of data is material by alleging that misuse led TVA to underestimate environmental impacts of the operation of WBN Unit 2.[257] In response to the NRC Staff's argument that TVA may rely on older data, the Petitioner asserts that changed circumstances since those studies were performed, especially the operation of WBN Unit 1, indicate that the studies do not reflect current conditions, and TVA has not shown that it "carefully considered the appropriateness of using such outdated data" or that new data would be difficult to collect.[258] On the topic of mussels, SACE points out that, although different classifications are assigned to mussels at

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[252] Id. at 44.

[253] Id.

[254] Reply at 23-24.

[255] Id. at 24.

[256] Id. at 24-25.

[257] Id. at 26.

[258] Id. at 26-28.

different points along the river, the health of the population closest to the WBN Unit 2 intake and discharge structures is described in the FSEIS as excellent.[259] In response to TVA's citation of the 1996-97 entrainment and impingement study, the Petitioner asserts that this study is not discussed or even identified as entrainment or impingement-related in the FSEIS and that information that TVA has submitted does not discuss fish density for purposes of entrainment analyses or adequately explain an observed peak in impingement during a 2005-2007 survey.[260] Additionally, SACE argues that TVA's expired NPDES permit, which included an impingement and entrainment monitoring program, does not preclude the Petitioner's current challenge[261] and that draft EPA guidance calling for direct monitoring of entrainment impacts at intakes can be used to support the reasonableness of the Petitioner's position that site-specific entrainment data should have been collected.[262] Finally, regarding thermal impacts, SACE asserts that TVA's discussion of temperature measurements does not show that TVA has studied the environmental impacts of the thermal discharges and that the NPDES permit, which limits only the "end-of-pipe" outfall temperature, does not prevent higher temperature discharges to the river from holding pond overflow.[263]

As noted above,[264] on September 3, 2009, SACE filed a Motion for Leave to Amend Contention 7, along with an Amended Contention 7.[265] TVA and the NRC Staff filed Responses

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[259] Id. at 28.

[260] Id. at 28-32.

[261] Id. at 28.

[262] Id. at 29-30.

[263] Id. at 32-33.

[264] Supra p. 2.

[265] Motion to Amend; Amended Contention 7.

in Opposition to the Motion on September 8, and September 10, 2009, respectively.[266] In addition, on September 28, 2009, TVA and the NRC Staff filed an Answer to the Amended Contention.[267] SACE filed a Reply to TVA's and the NRC Staff's Answers on October 5, 2009.[268]

In the document submitted as Amended Contention 7 the Petitioner did not make any changes to Contention 7 itself.[269] Rather, SACE sought to amend the basis for Contention 7 in response to TVA's 1998 Aquatic Study.[270] In the amended contention/basis SACE argues that, even though the Aquatic Study shows that TVA did take direct measurements of entrainment, the Aquatic Study is inadequate to support TVA's conclusion of no significant entrainment impacts because 1) the study shows a 1997 entrainment rate of 17.65%, which is significant; 2) TVA did not monitor entrainment for an adequate amount of time, in terms of both number of years and amount of time in each year; and 3) the study is outdated in light of a decline in aquatic health since the study was concluded.[271] With regard to impingement, SACE again argues that the Aquatic Study is obsolete.[272] In addition, SACE asserts that the Aquatic Study supports its original argument that the aquatic health of the Tennessee River is in decline because the study contains information indicating a decline in mussel health.[273] SACE asserts that it should be permitted to amend Contention 7 because it meets the contention amendment

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[266] TVA Response to Motion to Amend; Staff Response to Motion to Amend.

[267] TVA Answer to Amended Contention 7; Staff Answer to Amended Contention 7.

[268] Reply to Amended Contention 7.

[269] Amended Contention 7 at 3.

[270] Id. at 3.

[271] Id.

[272] Id. at 3-4.

[273] Id. at 4.

standards of 10 C.F.R. § 2.309(f)(2). SACE argues that 1) TVA's references to the Aquatic Study in its answer to SACE's original petition constitute information that was not previously available; 2) that information is materially different from information that was previously available; and 3) SACE filed the amended contention within thirty days of TVA's filing its answer.[274]

TVA and the NRC Staff both oppose the motion on the ground that SACE does not meet the requirements of 10 C.F.R. § 2.309(f)(2) because the 1998 Aquatic Study was previously available.[275] Both TVA and the NRC Staff assert that the FSEIS identifies the Aquatic Study by its full title, "Aquatic Environmental Conditions in the Vicinity of Watts Bar Nuclear Plant During Two Years of Operation," and that SACE should, therefore, have realized during its preparation of Contention 7 that the document contained relevant information.[276] Additionally, TVA and the NRC Staff note that TVA provided SACE with other documents at SACE's request but that SACE never requested a copy of the Aquatic Study.[277]

In their September 28, 2009 answers, TVA and the NRC Staff both assert that Amended Contention 7 also does not meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1).[278] Initially, TVA asserts that the amended contention "retracts substantial portions of Petitioners' original claims [i.e., the alleged lack of any direct entrainment monitoring], rendering those claims moot."[279] TVA then argues that SACE's new bases either are inadequately supported or fail to raise a genuine dispute. With regard to entrainment, TVA asserts three

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[274] Motion to Amend at 2-3.

[275] TVA Response to Motion to Amend at 5; Staff Response to Motion to Amend at 1, 4.

[276] TVA Response to Motion to Amend at 4; Staff Response to Motion to Amend at 4.

[277] TVA Response to Motion to Amend at 4; Staff Response to Motion to Amend at 4-5.

[278] TVA Answer to Amended Contention 7 at 2; Staff Response to Amended Contention 7 at 1-2.

[279] TVA Answer to Amended Contention 7 at 4-5.

deficiencies in Amended Contention 7. First, TVA asserts that SACE's expert, Dr. Young, incorrectly calculated the entrainment percentage from the Aquatic Study and therefore does not create a genuine dispute on the significance of the entrainment levels.[280] Second, TVA notes that Dr. Young does not claim that any peak egg or larval densities were actually missed, but only that they might have been missed, by the April-to-June monitoring periods and that Dr. Young's assumption that monitoring in the first year did not begin until late May is incorrect.[281] Third, TVA claims that SACE fails to support the proposition that the aquatic health of the Tennessee River is in decline and that SACE therefore fails to support the proposition that the Aquatic Study is outdated in light of that decline.[282] With respect to impingement, TVA again asserts that SACE fails to support the proposition that the Aquatic Study is outdated and additionally asserts that SACE has not identified where TVA extrapolates from impingement data to determine entrainment impacts as alleged by Dr. Young.[283] Finally, TVA asserts that SACE has not supported its claim that the Aquatic Study shows a decline in aquatic health because it does not allege that the decrease in mussel populations between 1996 and 1997 observed in the study is outside the typical range of year-to-year variation or indicate how operation of WBN Unit 1 could have affected mussel health in the area.[284]

The NRC Staff opposes the admission of Amended Contention 7 as failing to raise a genuine dispute because NEPA only requires updating old data when the data's validity is thrown into question and SACE. By failing to support its claim that the aquatic health of the Tennessee River has declined, the Staff argues, the amended contention has not thrown into

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[280] Id. at 6-7.

[281] Id. at 8-9.

[282] Id. at 9-10.

[283] Id. at 11.

[284] Id. at 12-13.

question the validity of the data submitted by TVA and, accordingly, has not raised a genuine question regarding the validity of the Aquatic Study.[285]

In its Reply, SACE first argues that its Motion to Amend Contention 7 is timely because despite the FSEIS's listing of the Aquatic Study as a reference, "nothing in the FSEIS establishes that the study in fact formed the basis for TVA's conclusions concerning aquatic impacts," and TVA in fact "erroneously cited a completely different study in the 'Aquatic Ecology' section of the FSEIS."[286] SACE then presents a rebuttal to TVA's and the NRC Staff's admissibility arguments concerning Amended Contention 7. With respect to the entrainment rates from the Aquatic Study, SACE asserts that neither the study nor TVA's Answer provides "original source data" or shows how that data was used to reach the conclusions in the study, and thus, the "discrepancy" Dr. Young identified is not resolved.[287] Next, SACE asserts that Amended Contention 7 raises a genuine dispute with TVA with regard to duration of entrainment and impingement sampling because 1) it is Dr. Young's expert opinion that TVA should have had longer sampling periods in order to identify potential peak egg and larvae populations; 2) TVA's own environmental documents indicate that water temperature, which varies at the WBN site, affects the timing of spawning; 3) TVA does not explain "how it conclusively established that the dates of peak density of fish eggs and larvae in 1996 and 1997 were in June" when sampling only took place from April through June; and 4) TVA's records show that WBN Unit 1 did not operate at full capacity in April and most of May 1996.[288]

SACE also argues that the NRC Staff is incorrect in asserting that the data in the FSEIS does not show a significant decline in the health of the river and that its questioning of the

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[285] Staff Answer to Amended Contention 7 at 3-6.

[286] Reply to Amended Contention 7 at 2.

[287] Id. at 2-3.

[288] Id. at 3-4.

current validity of the Aquatic Study raises a genuine dispute because Dr. Young's expert opinion offers several reasons for doubting the reliability of the data.[289] Finally, SACE asserts that it has raised a genuine dispute concerning thermal impacts on mussels because 1) it has pointed out that TVA's own statements in the Aquatic Study indicate a significant decline in mussel population downstream but not upstream of WBN between 1996 and 1997 and 2) TVA merely shows that sampling factors might have resulted in the apparent thirty-five percent decline in mussel population between 1996 and 1997 and thus does not rebut the possibility of an actual decline caused by operation of WBN Unit 1.[290]

Board Ruling on the Admissibility of Contention 7 (Aquatic Impacts)

The Board denies SACE's Motion to Amend Contention 7 but concludes that Contention 7 is admissible as originally presented.

In order for the Board to allow SACE to amend Contention 7, the Petitioner must demonstrate that the information upon which the amended contention is based was not previously available, is materially different from information previously available, and that the amended contention has been submitted in a timely fashion.[291] As the NRC Staff points out, the standard is whether the information was available to the public, not whether the Petitioner has recently found it.[292] We conclude that this information was available when the original Petition to Intervene was submitted, and we also conclude that it is not materially different from other information that was available.

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[289] Id. at 5-6.

[290] Id. at 6-7.

[291] 10 C.F.R. § 2.309(f)(2).

[292] Dominion Nuclear Conn., Inc. (Millstone Power Station, Unit 3), CLI-09-5, 69 NRC 115, 126 (2009).

We note that, at this stage of the proceedings, we admit "contentions," not "bases."[293] Furthermore, we conclude that the information contained in TVA's 1998 Aquatic Study is within the scope of the contention as originally drafted, which challenged the adequacy and accuracy of TVA's analysis of the impacts that the operation of Watts Bar Unit 2 could have on the surrounding aquatic ecology. Accordingly, while finding this previously available study allowed SACE to correct a factual error contained in its argument, the contention remains essentially unchanged.

Accordingly, Petitioner's Motion to Amend Contention 7 is denied. However, even without the amendment we find that Contention 7 is admissible.

We find that SACE has raised a genuine issue with regard to the accuracy of TVA's characterization of the current aquatic environment in the vicinity of the Watts Bar facility and the adequacy of TVA's analysis of the impact that the operation of Unit 2 could have on the surrounding aquatic environment.

In support of this contention SACE presents a detailed declaration from Dr. Shawn Young, an expert in fisheries biology. In that declaration he offers his expert opinion that "the health of the Tennessee River ecosystem . . . is damaged, fragile, and quite vulnerable."[294] He notes that many fish and mussel populations "are greatly reduced from their historical numbers" and further notes that "in the upper-basin, 15 fish species are federally listed as endangered or threatened."[295] Based on the data he has reviewed, Dr. Young opines that TVA inaccurately

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[293] Entergy Nuclear Vermont Yankee, LLC (Vermont Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131, 147 (2006).

[294] Petition, Attach. 6, Declaration of Shawn Paul Young, Ph.D. at 4 (July 11, 2009) [hereinafter Young Declaration].

[295] Id. at 5-6.

characterizes the current aquatic health of the Tennessee River as good and "fails to identify and discuss an alarming trend of declining fish species in the Chickamauga Reservoir."[296]

Likewise, Dr. Young offers his expert opinion that TVA's conclusion regarding potential impacts of entrainment and impingement is misleading because it relied primarily on data generated more than thirty years ago, before Watts Bar Unit 1 became operational.[297] While TVA notes that it has provided some post-operational data (1998 SCCW EA[298]) we believe that Dr. Young's expert evaluation of TVA's 2007 FSEIS is sufficient to raise a genuine issue of material fact regarding the adequacy of the support for and the accuracy of TVA's conclusion regarding the impact of entrainment and impingement on the aquatic organisms in the Tennessee River.

Finally, Dr. Young challenges TVA's conclusion that the thermal impacts from the operation of Watts Bar Unit 2 would have an "insignificant" impact on the aquatic environment.[299] He notes that, in his opinion as an expert fisheries biologist, TVA lacks adequate data on which to reach such a conclusion. He notes, inter alia, that TVA: 1) does not provide data on spatial and temporal distribution of ichthyoplankton in relation to thermal mixing zones; 2) fails to account for the fact that the size and temperature profile of the mixing zone varies with dam discharge; 3) fails to evaluate the effects of discharge temperature on fish eggs and larvae; 4) relies on the temperature at the edges of the thermal discharge plume to evaluate impact on aquatic organisms.[300]

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[296] Id. at 6-7.

[297] Id. at 12-16.

[298] [TVA], Watts Bar Nuclear Plant Supplemental Condenser Cooling Water Project, Environmental Assessment (Aug. 1998), available at http://www.tva.gov/environment/reports/wattsbar2/related/aug_1998.pdf.

[299] Young Declaration at 16.

[300] Id. at 16-18.

While Dr. Young may be misinterpreting the data submitted by TVA, at this stage of the proceeding we are deciding only contention admissibility. The purpose of the hearing will be to take testimony from experts presented by both sides, weigh the evidence, and thereby ensure that an informed decision is made.

Petitioner has met its burden of demonstrating the existence of genuine material issues of fact and has, accordingly, presented an admissible contention.

CONCLUSION

The Southern Alliance for Clean Energy has established standing and has submitted admissible contentions. Accordingly, SACE's Request for Hearing is **Granted**. The Tennessee Environmental Council, We the People, the Sierra Club, and Blue Ridge Environmental Defense League did not submit a timely Petition to Intervene and, accordingly their Request for Hearing is **Denied**.

In accordance with the provisions of 10 C.F.R. § 2.311, any appeal to the Commission from this Memorandum and Order must be filed within ten (10) days after it is served.

It is so ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD[301]

/RA/

Lawrence G. McDade, Chairman
ADMINISTRATIVE JUDGE

/RA/ L. McDade for

Dr. Paul B. Abramson
ADMINISTRATIVE JUDGE

/RA/

Dr. Gary Arnold
ADMINISTRATIVE JUDGE

Rockville, MD
November 19, 2009

[301] A copy of this order was sent this date by the agency's E-filing system to: (1) Counsel for the NRC staff; (2) Counsel for TVA; and (3) Diane Curran and Matthew Fraser as Counsel for the Petitioners.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
TENNESSEE VALLEY AUTHORITY	)	Docket Nos. 50-391-OL
	)	
(Watts Bar Nuclear Power Plant - Unit 2)	)	
	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing MEMORANDUM AND ORDER (GRANTING PETITION TO INTERVENE) (LBP-09-26) have been served upon the following persons by the Electronic Information Exchange.

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[Original signed by Nancy Greathead]

Office of the Secretary of the Commission

Dated at Rockville, Maryland
this 19th day of November 2009