UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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| In the Matter of | ) | |
| | ) | |
| TENNESSEE VALLEY AUTHORITY | ) | Docket Nos. 52-014 and 52-015 |
| | ) | |
| Bellefonte Nuclear Power Plant | ) | |
| (Units 3 and 4) | ) | |

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# NRC STAFF ANSWER TO "PETITION FOR INTERVENTION AND REQUEST FOR HEARING BY THE BELLEFONTE EFFICIENCY AND SUSTAINABILITY TEAM, THE BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE AND THE SOUTHERN ALLIANCE FOR CLEAN ENERGY"

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July 1, 2008

**TABLE OF CONTENTS**

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| | | |
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## INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(h)(1), the staff of the Nuclear Regulatory Commission (NRC staff) hereby answers the "Petition for Intervention and Request for Hearing" (Petition) filed on June 6, 2008 by the Blue Ridge Environmental Defense League (BREDL) and its chapter Bellefonte Efficiency and Sustainability Team (BEST) and the Southern Alliance for Clean Energy (SACE) (collectively, Petitioners). For the reasons set forth below, the NRC staff does not oppose BREDL or SACE's standing, but opposes BEST's standing and opposes admission of Petitioners as parties to this proceeding, since the NRC staff opposes admission of all of Petitioners' proposed contentions.

## BACKGROUND

On October 30, 2007, the Tennessee Valley Authority (TVA, the Applicant) filed an application for a combined operating license (COL) for Bellefonte Units 3 and 4 with the NRC.[1]

[1] *See* Tennessee Valley Authority; Notice of Receipt and Availability of Application for a Combined License, 72 Fed. Reg. 66,200 (Nov. 27, 2007). The NRC docketed the application on January (continued. . .)

The application for a COL for Bellefonte Units 3 and 4 (Application) references the design certification amendment to the previously certified Westinghouse AP1000 (AP1000) design (*see* 10 C.F.R. Part 52, Appendix D); the application for the design certification amendment was submitted on May 27, 2007, and is now under NRC staff review. *See* Westinghouse Electric Company; Acceptance for Docketing of a Design Certification Amendment Request for the AP1000 Design, 73 Fed. Reg. 4926 (Jan. 28, 2008).

On February 8, 2008, the NRC published a notice of hearing on the Application, which provided members of the public sixty days from the date of publication to file a petition for leave to intervene in this proceeding. *See* Tennessee Valley Authority; Notice of Hearing and Opportunity to Petition for Leave to Intervene on a Combined License for Bellefonte Units 3 and 4, 73 Fed. Reg. 7611 (Feb. 8, 2008). On April 7, 2008, the Commission issued an Order granting a 60-day extension for interested persons to file a petition to intervene. *See Tennessee Valley Authority* (Bellefonte Nuclear Power Plant, Units 3 and 4), unpublished order (April 7, 2008) (Agencywide Documents Access and Management System [ADAMS] Accession No. ML080980595). In response to the Notice of Hearing, Petitioners submitted their Petition through which they seek to intervene in this proceeding.

DISCUSSION

In their Petition, Petitioners assert that they have standing based on their representation of several of their members and propose nineteen contentions. The nineteen proposed contentions are: (1) that granting the requested COL will not improve the general welfare,

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(. . .continued)

18, 2008. *See* Tennessee Valley Authority; Acceptance for Docketing of an Application for Combined License for Bellefonte Units 3 and 4, 73 Fed. Reg. 4923 (Jan. 28, 2008).

increase the standard of living, or strengthen free competition in private enterprise (Petition at 11); (2) that the NRC fails to execute constitutional due process and equal protection (*id.* at 19); (3) that plant site geology is not suitable for nuclear reactors and that geologic issues are not adequately addressed (*id.* at 22); (4) that the impact of terrorist attacks is not addressed (*id.* at 29); (5) that the assumption and assertion that uranium fuel is a reliable source of energy is not supported in the Application (*id.* at 32); (6) that Bellefonte will not adequately limit atmospheric emissions of radionuclides (*id.* at 34); (7) that excessive water use is contrary to TVA's purpose (*id.* at 37); (8) that certain impacts on aquatic resources are not adequately addressed (*id.* at 39); (9) that alternatives to the proposed action are lacking (*id.* at 45); (10) that TVA's power and energy requirements forecast fails to evaluate alternatives (*id.* at 47); (11) that TVA's power demand forecast fails to justify the need for new nuclear reactors (*id.* at 49); (12) that NRC failed to justify the need for new units (*id.* at 63); (13) that TVA lacks realistic low-level radioactive waste plans (*id.* at 65); (14) that the Application fails to evaluate whether and in what time frame spent fuel generated by Units 3 and 4 can be safely disposed of (*id.* at 69) and that even if the waste confidence decision applies to this proceeding, it should be reconsidered (*id.* at 75); (15) that global warming impacts are omitted from the Application with respect to severe weather and the "carbon footprint" (*id.* at 78); (16) that the Application's cost estimates and cost comparison are inadequate (*id.* at 84); (17) that the Environmental Report's analysis of human health impacts of irradiated fuel disposal is inadequate (*id.* at 92); (18) that the Environmental Report's reliance on Table S-3 of 10 C.F.R. § 51.51 regarding radioactive effluents from the uranium fuel cycle is inadequate (*id.* at 95); and (19) that the Environmental Report improperly characterizes health effects from the uranium fuel cycle as small and fails to adequately compare them to health effects of alternative energy sources (*id.* at 103). The NRC staff, as explained below, does not oppose BREDL or SACE's standing, but opposes BEST's standing and opposes admission of all of Petitioners' proposed contentions.

## I. LEGAL STANDARDS

### A. Standing to Intervene

In accordance with the Commission's Rules of Practice:[2]

> [a]ny person whose interest may be affected by a proceeding and who desires to participate as a party must file a written request for hearing or petition for leave to intervene and a specification of the contentions that the person seeks to have litigated in the hearing.

10 C.F.R. § 2.309(a). The regulations further provide that the Licensing Board:

> will grant the [petition] if it determines that the [petitioner] has standing under the provisions of [10 C.F.R. § 2.309(d)] and has proposed at least one admissible contention that meets the requirements of [10 C.F.R. § 2.309(f)]. *Id.*

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

> (i) The name, address and telephone number of the requestor or petitioner;
>
> (ii) The nature of the requestor's/petitioner's right under the [Atomic Energy Act of 1954, as amended (Act)] to be made a party to the proceeding;
>
> (iii) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding; and
>
> (iv) The possible effect of any decision or order that may be issued in the proceeding on the requestor's/petitioner's interest.

10 C.F.R. § 2.309(d)(1).

As the Commission has observed:

> [a]t the heart of the standing inquiry is whether the petitioner has 'alleged such a personal stake in the outcome of the controversy' as to demonstrate that a concrete adverseness exists which will sharpen the presentation of issues.

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[2] *See* "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," 10 C.F.R. Part 2.

*Sequoyah Fuels Corp. and Gen. Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 71 (1994), *citing Duke Power Co. v. Carolina Envtl. Study Group, Inc*., 438 U.S. 59, 72 (1978) *and quoting Baker v. Carr*, 369 U.S. 186, 204 (1962).

> To demonstrate such a 'personal stake,' the Commission applies contemporaneous judicial concepts of standing. Accordingly, petitioner must (1) allege an 'injury in fact' that is (2) 'fairly traceable to the challenged action' and (3) is 'likely' to be 'redressed by a favorable decision.

*Sequoyah Fuels,* CLI-94-12, 40 NRC at 71-72, *citing Lujan v. Defenders of Wildlife*, 112 S.Ct. 2130, 2136 (1992), and *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993). *See also Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999).

In reactor license proceedings, licensing boards have typically applied a "proximity" presumption to persons "who reside in or frequent the area within a 50-mile radius" of the plant in question. *See, e.g.*, *Fla. Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 148 (2001).[3] The Commission noted this practice with approval, stating that:

> We have held that living within a specific distance from the plant is enough to confer standing on an individual or group in proceedings for construction permits, operating licenses, or significant amendments thereto[.] *See, e.g. Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-522, 9 NRC 54 (1979). . . .[T]hose cases involved the construction or operation of the reactor itself, with clear implications for the offsite environment[.] *See, e.g., Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-183, 8 [sic, 7] AEC 222, 226 (1974).

*Fla. Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989). The proximity presumption establishes standing without the need to establish the

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[3] The *Turkey Point* decision summarizes the development of this doctrine. *See Turkey Point*, LBP-01-6, 53 NRC at 147-48.

elements of injury, causation, or redressability. *Turkey Point*, LBP-01-6, 53 NRC at 150. The NRC staff submits that because a COL application is an application for a construction permit combined with an operating license (*see* 10 C.F.R. § 52.1(a)), the proximity presumption would appear, in general, to apply to such applications.

An organization may establish its standing to intervene based on organizational standing (showing that its own organizational interests could be adversely affected by the proceeding), or representational standing (based on the standing of its members). Where an organization seeks to establish "representational standing," it must show that at least one of its members may be affected by the proceeding, it must identify that member by name and address and it must show that the member "has authorized the organization to represent him or her and to request a hearing on his or her behalf." *See, e.g.*, *Consumers Energy Co.* (Palisades Nuclear Power Plant), CLI-07-18, 65 NRC 399, 409 (2007); *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-06-07, 63 NRC 188, 195 (2006), *citing GPU Nuclear Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 202 (2000). Further, for the organization to establish representational standing, the member seeking representation must qualify for standing in his or her own right, the interests that the organization seeks to protect must be germane to its own purpose, and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action. *Palisades,* CLI-07-18, 65 NRC at 409; *Private Fuel Storage,* CLI-99-10, 49 NRC at 323, *citing Hunt v. Wash. State Apple Advertising Comm'n,* 432 U.S. 333, 343 (1977).

B. Legal Requirements for Contentions

1. General Requirements

The legal requirements governing the admissibility of contentions are well established and currently are set forth in 10 C.F.R. § 2.309(f) of the Commission's Rules of Practice (formerly § 2.714(b)).[4]

The standards in 10 C.F.R. § 2.309(f)(1) may be summarized as follows: An admissible contention must: (1) provide a specific statement of the legal or factual issue sought to be raised; (2) provide a brief explanation of the basis for the contention; (3) demonstrate that the issue raised is within the scope of the proceeding; (4) demonstrate that the issue raised is material to the findings the NRC must make to support the action that is involved in the proceeding; (5) 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 the hearing; and (6) 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 the petitioner disputes, or in the case when the application is alleged to be deficient, the identification of such deficiencies and supporting reasons for this belief.[5] *See* 10 C.F.R. § 2.309(f) (2008).

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[4] The Commission recodified the requirements of former § 2.714, together with rules regarding contentions set forth in Commission cases, in § 2.309 in 2004. *See* "Changes to Adjudicatory Process" (Final Rule), 69 Fed. Reg. 2182 (Jan. 14, 2004), *as corrected*, 69 Fed. Reg. 25,997 (May 11, 2004). In the Statements of Consideration for the final rule, the Commission cited several Commission and Atomic Safety and Licensing Appeal Board decisions applying former § 2.714 in support of the recodified provisions of § 2.309. *See* 69 Fed. Reg. at 2202. Accordingly, Commission and Appeal Board decisions on former § 2.714 retain their vitality, except to the extent the Commission changed the provisions of § 2.309 as compared to former § 2.714.

[5] Section 2.309(f) states the following requirements for contentions:

(f) Contentions.
(continued. . .)

Sound legal and policy considerations underlie the Commission's contention requirements. The purpose of the contention rule is to, "focus litigation on concrete issues and result in a clearer and more focused record for decision." 69 Fed. Reg. at 2202; *see also Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553-54 (1978); *BPI v. AEC*, 502 F.2d 424, 428 (D.C. Cir. 1974); *Phila. Elec. Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974). The Commission has stated that it "should not have to expend resources to support the hearing process unless there is an issue that is

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(. . .continued)

> (1) A request for hearing or petition for leave to intervene must set forth with particularity the contentions sought to be raised. For each contention, the request or petition must:
>
> (i) Provide a specific statement of the issue of law or fact to be raised or controverted;
>
> (ii) Provide a brief explanation of the basis for the contention;
>
> (iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;
>
> (iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;
>
> (v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and
>
> (vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.
>
> (2) Contentions must be based on documents or other information available at the time the petition is to be filed, such as the application, supporting safety analysis report, environmental report or other supporting document filed by an applicant or licensee, or otherwise available to a petitioner. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report[.]
>
> 10 C.F.R. § 2.309(f)(1)-(2).

appropriate for and susceptible to, resolution in an NRC hearing." 69 Fed. Reg. at 2202. The Commission has emphasized that the rules on contention admissibility are "strict by design." *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsideration denied*, CLI-02-01, 55 NRC 1 (2002). Failure to comply with any of these requirements is grounds for the dismissal of a contention. 69 Fed. Reg. at 2221; *see also*, *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999); *Ariz. Pub. Serv. Co*. *et al.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991). "Mere 'notice pleading' does not suffice."[6] *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 119 (2006).

Finally, it is well established that the purpose for the basis requirements is: (1) to assure that the contention raises a matter appropriate for adjudication in a particular proceeding; (2) to establish a sufficient foundation for the contention to warrant further inquiry into the assertion; and (3) to put other parties sufficiently on notice of the issues so that they will know generally what they will have to defend against or oppose. *Phila. Elec. Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 (1974); *Ariz. Pub. Serv. Co., et al.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), LBP-91-19, 33 NRC 397, 400 (1991). The *Peach Bottom* decision requires that a contention be rejected if:

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[6] *See also Ariz. Public Service Co*. (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), CLI-91-12, 34 NRC 149, 155 (1991); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-91-35, 34 NRC 163, 167-68 (1991) These requirements are intended, *inter alia*, to ensure that a petitioner reviews the application and supporting documentation prior to filing contentions; that the contention is supported by at least some facts or expert opinion known to the petitioner at the time of filing; and that there exists a genuine dispute between the petitioner and the applicant before a contention is admitted for litigation -- so as to avoid the practice of filing contentions which lack any factual support and seeking to flesh them out later through discovery. *See, e.g., Shoreham*, 34 NRC at 167-68.

> (1) it constitutes an attack on applicable statutory requirements;
>
> (2) it challenges the basic structure of the Commission's regulatory process or is an attack on the regulations;
>
> (3) it is nothing more than a generalization regarding the petitioner's view of what applicable policies ought to be;
>
> (4) it seeks to raise an issue which is not proper for adjudication in the proceeding or does not apply to the facility in question; or
>
> (5) it seeks to raise an issue which is not concrete or litigable.

*Peach Bottom, supra,* 8 AEC at 20-21.

These rules focus the hearing process on real disputes susceptible of resolution in an adjudication. *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999). For example, a petitioner may not demand an adjudicatory hearing to attack generic NRC requirements or regulations or to express generalized grievances about NRC policies. *Id.* Specifically, NRC regulations do not allow a contention to attack a regulation unless the proponent requests a waiver from the Commission. 10 C.F.R. § 2.335; *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), *Entergy Nuclear Generation Co., and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-07-3, 65 NRC 13, 17-18 and n.15 (2007), *citing Millstone*, CLI-01-24, 54 NRC at 364.

## II. STANDING

BREDL, BEST, and SACE each assert representational standing to intervene in this proceeding by demonstrating an injury in fact to members who have authorized the organization to represent them in this proceeding.

### A. Standing of BREDL

BREDL asserts representational standing to intervene in this proceeding by demonstrating an injury in fact to 40 of its members who have authorized BREDL to represent them in this proceeding. Petition at 4-5. These individuals are: Finne Bille, Thomas E. Camp, Cheryl A. Carlson, Jill Carpenter, Reese Danley-Kilgo, Thomas A. DuBose, Arlyn Ende-

Hastings, Sara S. Fitzgerald, Jessica Katherine Frazier, Peter W. Frogner, John M. Gessell, Robert Gottfried, Yolande McCurdy Gottfried, Gagmar Gundersen, Jeannie M. Hacker, Kathleen A. Hamman, David Haskell, Jack B. Hastings, Constance G. Kelley, James Patrick Kelley, Jacqueline Kidd, Sandra Kurtz, Sue A. Lytle, Joshua Mauzy, Jack L. Moore, Rosa Lee Moore, Garry L. Morgan, Thomas Allen Moss, David Nazar, Kathleen O'Donahue, Ann McCulloch Oliver, Jennifer J. Raulston, William F. Reynolds, Jean Scott, Sandra Shattuck, Rebecca A. Smith, Michele Sneed, Julia Stubblebine, Gordon Woodcock, and Linda Woodcock (collectively, BREDL Declarants). *Id*. at 4-5. BREDL states that these members reside within 50 miles of the proposed site (*id*. at 4) and have standing due to their proximity to the site (*id*. at 6).

In order to establish representational standing, an organization must demonstrate, *inter alia*, that its members would otherwise have standing to participate in their own right and that at least one of its members has authorized it to represent the member's interests. *See Palisades*, CLI-07-18, 65 NRC at 409. As set forth below, BREDL satisfies the representational standing requirement. Each of the 40 individuals named in the Petition have provided virtually identical declarations, which are attached to the Petition, in support of BREDL's standing. *See* "Declaration of Finne Bille" (March 31, 2008); "Declaration of Thomas E. Camp" (March 26, 2008); "Declaration of Cheryl A. Carlson" (April 8, 2008); "Declaration of Jill Carpenter" (April 9, 2008); "Declaration of Reese Danley Kilgo" (March 21, 2008); "Declaration of Thomas A. DuBose" (March 14, 2008); "Declaration of Arlyn Ende-Hastings" (March 28, 2008); "Declaration of Sara S. Fitzgerald" (March 29, 2008); "Declaration of Jessica Katherine Frazier" (March 29, 2008); "Declaration of Peter W. Frogner" (March 29, 2008); "Declaration of John M. Gessell" (March 11, 2008); "Declaration of Robert Gottfried" (April 2, 2008); "Declaration of Yolande McCurdy Gottfried" (April 2, 2008); "Declaration of Dagmar Gundersen" (March 26, 2008); "Declaration of Jeannie M. Hacker" (March 26, 2008); "Declaration of Kathleen A. Hamman" (March 26, 2008); "Declaration of David Haskell" (March 26, 2008);

"Declaration of Jack B. Hastings" (March 28, 2008); "Declaration of Constance G. Kelley" (April 1, 2008); "Declaration of James Patrick Kelley" (April 1, 2008); "Declaration of Jacqueline Kidd" (March 25, 2008); "Declaration of Sandra L. Kurtz" (March 26, 2008); "Declaration of Sue A. Lytle" (March 26, 2008); "Declaration of Joshua Mauzy" (March 28, 2008); "Declaration of Jack L. Moore" (March 4, 2008); "Declaration of Rosa Lee Moore" (March 4, 2008); "Declaration of Garry L. Morgan" (April 2, 2008); "Declaration of Thomas Allen Moss" (April 2, 2008); "Declaration of David Nazar" (March 25, 2008); "Declaration of Kathleen O'Donahue" (March 21, 2008); "Declaration of Ann M. Oliver" (March 26, 2008); "Declaration of Jennifer J. Raulston" (March 26, 2008); "Declaration of William F. Reynolds" (March 29, 2008); "Declaration of Jean Scott" (March 20, 2008); "Declaration of Sandra D. Shattuck" (April 1, 2008); "Declaration of Rebecca A. Smith" (April 2, 2008); "Declaration of Michele Sneed" (April 1, 2008); "Declaration of Julia Stubblebine" (March 1, 2008); "Declaration of Gordon Woodcock" (April 2, 2008); "Declaration of Linda Woodcock" (April 2, 2008) (collectively, BREDL Declarations). Each of the BREDL Declarants states that he or she is a member of BREDL and has authorized BREDL to represent him or her in this proceeding. *See* BREDL Declarations at 1. Further, the claims contained in all of the declarations are identical in substance – each individual asserts that he or she lives within fifty miles[7] of the site and that nuclear facilities in close proximity to his or her home "could pose a grave risk to my health and safety." *Id*.

In view of the foregoing, each of BREDL's 40 members has established standing to intervene in his or her own right. Further, all 40 members have authorized BREDL to represent

[7] Several of the Declarations specify a shorter distance than 50 miles from the declarant's residence to the site. The Declarations of Jill Carpenter, Jacqueline Kidd, and Sue A. Lytle do not directly state that they live within 50 miles of the site, but the NRC staff has used GoogleMap and confirmed that the addresses stated in the Declarations of these three persons are within 50 miles of the site.

their interests in the instant proceeding.[8] Accordingly, BREDL has satisfied the standards for representational standing set forth in *Palisades*, CLI-07-18, 65 NRC at 409, and the NRC staff does not object to BREDL's representational standing to intervene.

B. Standing of BEST

BEST, however, has not established standing. None of the BREDL Declarations even mentions BEST; not one Declarant states that he or she is a member of BEST, nor does any BREDL Declarant authorize BEST to represent him or her in this proceeding. *See* BREDL Declarations at 1. Accordingly, the Petition does not establish BEST's standing under the standards enunciated in *Palisades*, and the NRC staff objects to BEST's being granted standing in this proceeding.

C. Standing of SACE

SACE asserts representational standing to intervene in this proceeding by demonstrating an injury in fact to five of its members who have authorized SACE to represent them in this proceeding. Petition at 5. These individuals are: John Kimmons, Ann McCulloch Oliver, William Ross McCluney, William F. Reynolds, and Jackie Tipper (collectively, SACE

[8] Two of the declarations supporting BREDL's standing are from Ann McCulloch Oliver, of Sewanee, Tennessee, and William F. Reynolds, of Chattanooga, Tennessee. However, separate declarations from Ms. Oliver and Mr. Reynolds also constitute two of the five declarations provided in support of SACE's standing. The Commission has expressed procedural concerns about having an individual authorize multiple petitioners to represent his or her interests in a proceeding, because of the potential for confusion as to which petitioner would be speaking for the individual. *See Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-19, 65 NRC 423, 426-27 (2007). However, as both BREDL and SACE have provided a declaration from at least one individual other than Ms. Oliver and Mr. Reynolds with standing in his or her own right who has authorized the organization to represent his or her interests, this overlap does not affect the NRC staff's recommendation with respect to either organization's standing in this proceeding. Moreover, the Petitioners in this proceeding appear to be submitting the Petition jointly, which may minimize the potential for confusion as to representation of the interests of the individuals in question.

Declarants). *Id*. at 5. SACE states that these members reside within 50 miles of the proposed site (*id*. at 4) and have standing due to their proximity to the site (*id*. at 6).

In order to establish representational standing, an organization must demonstrate, *inter alia*, that its members would otherwise have standing to participate in their own right and that at least one of its members has authorized it to represent the member's interests. *See Palisades*, CLI-07-18, 65 NRC at 409. As set forth below, SACE satisfies the representational standing requirement. Each of the five individuals named in the Petition have provided virtually identical declarations, which are attached to the Petition, in support of SACE's standing. *See* "Declaration of John Kimmons" (March 28, 2008); "Declaration of Ann McCulloch Oliver" (March 24, 2008); "Declaration of William Ross McCluney" (March 27, 2008); "Declaration of William F. Reynolds" (March 29, 2008); "Declaration of Jackie Tipper" (April 2, 2008) (collectively, SACE Declarations). Each of these SACE Declarants states that he or she is a member of SACE and authorized SACE to represent him or her in this proceeding. *See* SACE Declarations at 1. Further, the claims contained in all of the declarations are identical in substance – each individual asserts that he or she lives within fifty miles of the site and that nuclear facilities in close proximity to his or her home "could pose a grave risk to my health and safety." *Id*.

In view of the foregoing, each of SACE's five members has established standing to intervene in his or her own right. Further, all five members have authorized SACE to represent their interests in the instant proceeding. Accordingly, SACE has satisfied the standards for representational standing set forth in *Palisades*, CLI-07-18, 65 NRC at 409, and the NRC staff does not object to SACE's representational standing to intervene.

III. PETITIONERS' PROPOSED CONTENTIONS

The Petitioners submitted nineteen proposed contentions, which are discussed below.[9] As explained below, the NRC staff opposes admission of all of Petitioners' proposed contentions. The NRC staff discusses the proposed contentions *seriatim* as they appear in Petitioners' filing.

A. PROPOSED CONTENTION ONE [MISC-A]: Whether Bellefonte Will Improve the General Welfare, Increase the Standard of Living, or Strengthen Free Competition in Private Enterprise. (Petition at 11.)

BASIS:

After years of rulemakings, NUREGs and lessons learned, Congress's declared policy is unaltered: "[T]he development, use,

[9] In its Order dated June 18, 2008, the Licensing Board ordered the Petitioners to provide a supplement to the Petition that "for each of their already-specified contentions assigns a separate numeric or alpha designation within one" of several groups. *See Tennessee Valley Authority* (Bellefonte Nuclear Power Plant Units 3 and 4), Memorandum and Order (Initial Prehearing Order), slip op. (June 18, 2008), at 2. The Licensing Board further instructed that if Petitioners consider a contention to raise issues "that cannot be classified as primarily falling into only one of these categories," Petitioners "must set forth the contention and supporting bases in full separately for each category into which it is asserted to fall, with a separate designation for that category (e.g., FSAR-3 and NEPA-3)." *Id.* at 3 (emphasis in original). The Licensing Board also stated that "[c]ontentions bearing more than one designation (e.g., FSAR-3/NEPA-3) are not acceptable and may result in the Board making a determination regarding in which of the several designated categories the contention will be litigated." *Id.*

The Petitioners filed the aforementioned supplement on June 26, 2008. *See Tennessee Valley Authority* (Bellefonte Nuclear Power Plant Units 3 and 4), Supplement to Petition of June 6, 2008 Providing Alphanumeric Designation of Contentions (June 26, 2008) ("Petition Supplement"). The NRC staff notes that the Petition Supplement does provide a single alphanumeric designation on the first line listing each proposed contention. However, Petitioners also indicate that several of their proposed contentions have subparts or subissues that fall into multiple categories. For example, Proposed Contention One is designated as MISC-A, but indicates subparts falling into three additional categories. Petition Supplement at 3. Similarly, Proposed Contention Five is designated as MISC-D but identifies that it raises issues in both the NEPA and TS categories. *Id.* at 4.

Because the Petitioners have not set forth these proposed contentions "in full separately for each category" into which the Petitioners assert each contention falls, the NRC staff will refer to the respective contentions throughout this document by both the contention's original number in the Petition and by the "overall" designation that the Petitioners have indicated on the first line for each contention in the Petition Supplement (e.g., Proposed Contention One [MISC-A]) However, for contentions where Petitioners have indicated other sub-designations, the NRC staff has nevertheless sought to consider those potential aspects as well in its responses.

> and control of atomic energy shall be directed so as to promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise." See 42 U.S.C. 2011. […]
>
> [T]he Commission itself is critically flawed as a regulatory body. The public's perception is that the agency lacks true independence; that the NRC staffs' [sic] review of license applications and other nuclear industry documents is incomplete and perfunctory; that the procedural process lacks the essential element of justice and impartiality.

Petition at 12. The Petitioners allege concerns about NRC enforcement practices, about the general significance of "human error" for reactor operations, about the independence of the NRC's review of applications, and about the NRC's adjudicatory process.

Petitioners first criticize the adequacy of NRC enforcement practices. The Petition references reports from the U.S. General Accounting Office and NRC's Office of the Inspector General that discuss, respectively, the NRC's handling of safety issues at the Davis-Besse nuclear plant and the agency's enforcement of fire barrier regulations. *Id.* at 12-13. The Petition characterizes these as "matters requiring agency-wide correction," but argues that, with respect to the Bellefonte application, "inadequate Commission oversight causes both safety and economic problems." *Id.* at 13-14. The Petition questions NRC's ability to "oversee TVA's corrective action plan or quality assurance program." *Id.* at 14.

Petitioners next make claims concerning the potential for human error at nuclear facilities. The Petitioners state that "all reactors have human operators and are therefore susceptible to error." *Id.* at 15. After quoting a 2001 NRC analysis of the extent to which human error contributes to operating risks, Petitioners claim that "the extent of the human error problem is difficult if not impossible to quantify." *Id.* at 15. Petitioners state that "the new AP-1000 reactor design and its associated DCD and training regimes have not been tested in the real world" and that "the NRC is obligated to demonstrate how it will prevent human frailty from turning a mishap at the proposed facility into a catastrophe." *Id.* at 15.

Third, Petitioners claim that the federal risk insurance provisions in the Energy Policy Act of 2005 undercut NRC's "independence as a regulatory agency[.]" *Id.* at 15. The Petition claims that because the Act creates an insurance program that may compensate qualifying license applicants for certain delays attributable to the Commission, the NRC's review will be pressured by financial considerations. *Id.* at 16.

Finally, Petitioners criticize the NRC's adjudicatory process as "opaque" and "stilted," making the general claim that the process "too often lacks the element of impartiality." *Id.* at 17. The Petition quotes as "instructive" an excerpt from the transcript of an oral argument before an Atomic Safety and Licensing Board in January 2008. *Id.* at 17-18. Petitioners conclude the discussion of this contention by questioning whether the NRC will "adhere to its own Principles of Good Regulation" with respect to its regulatory independence. *Id.* at 19.

*Staff Response*: For the reasons stated below, none of the bases the Petitioners raise is sufficient to make the contention admissible.

Proposed Contention 1 [MISC-A] purports to rely on a Congressional statement of policy in the Atomic Energy Act, quoting its text as the title of the contention. However, the Petitioners fail to explain why this general statutory policy statement is a basis for a justiciable claim in an NRC proceeding. In any event, as discussed further below, the Petitioners do not explain how any of the other issues discussed in their proposed bases for the contention either concern or are contrary to the broad objectives identified in the policy statement, nor do they discuss how any dispute with the Application relates to those objectives. Instead the Petitioners criticize various general aspects of NRC policy. Consequently, the Petition does not demonstrate how the contention is within the scope of the proceeding, that it is material to the findings that NRC must make in regard to the Application, how the Petitioners' alleged facts support its position, or that a genuine dispute exists with the Applicant on a material issue of law or fact. Accordingly, Proposed Contention 1 [MISC-A] fails to meet the requirements of § 2.309(f)(1)(iii), (iv), and (vi).

1. Petitioners fail to demonstrate that Proposed Contention 1's [MISC-A's] attacks on the Commission's enforcement practices are within the scope of this proceeding.

The Petition's broad challenges to the NRC's enforcement practices are an insufficient basis for an admissible contention. The Petition criticizes the adequacy of recent Commission enforcement practices, but a petitioner may not demand a hearing to express generalized grievances about NRC policies. *See Oconee*, CLI-99-11, 49 NRC at 334; *see also Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 130 (2004) (noting that requiring contentions "to be concrete and specific to the license application helps ensure that individual license applicants are not put into the position of defending the policies and decisions of the Commission itself."). Likewise, general attacks on the NRC's competence or regulations are not admissible issues in a specific licensing proceeding. *See Vermont Yankee Nuclear Power Corp., et al.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 165-66 (2000); *see also Commonwealth Edison Co.* (Byron Nuclear Power Station, Units 1 and 2), LBP-80-30, 12 NRC 683, 690 (1980) (general criticisms of NRC's methods of ensuring compliance with NRC regulations, without raising issues specifically relevant to the application, are not permissible subjects of contentions in a specific licensing proceeding).

The Petitioners' failure to identify a dispute specific to this proceeding is apparent from their characterization of the enforcement issues they identify as "matters requiring agency-wide correction." Petition at 13. Petitioners do not explain how their discussions of the Davis-Besse nuclear facility, of NRC enforcement of fire barrier regulations, or of reactor shut-downs at other TVA facilities represent concerns relevant to the Bellefonte application, other than to argue generally that "inadequate Commission oversight causes both safety and economic problems" that would thereby have "implications for Bellefonte." *Id.* at 14. These broad policy concerns are directed at NRC's general regulatory process and implementation rather than the

Application, and thus the Petition fails to demonstrate that this basis is within the scope of the Bellefonte proceeding. *See Vermont Yankee*, CLI-00-20, 52 NRC at 165-66.

Accordingly, because this basis for the contention attacks general NRC practices and does not identify any specific dispute with the Application, this proposed basis fails to meet the requirements of § 2.309(f)(1)(iii) and (vi).

2. Petitioners' references to "human error" raise only generalized concerns and do not identify any dispute with the Application.

The Petition's references to "human error" and "human frailty" raise only generalized concerns and do not identify any specific dispute with the Application. Petitioners fail to explain how their broadly stated concern with "human factors" reflects any specific inadequacy in, or dispute with, the Application; indeed, the Petitioners do not even discuss the Application's treatment of human factors (*see, e.g.*, Final Safety Analysis Report (FSAR), ch. 18). Consequently, this basis fails to meet the requirements of § 2.309(f)(1)(vi).

Likewise, the Petition identifies no specific concern either with the AP1000 reactor design or with any training programs related to it except to claim that they "have not been tested in the real world." Petition at 15. The Petitioners provide no facts or sources to support any safety concern specific to the AP1000 design or the Bellefonte application. Accordingly, this basis also fails to meet the requirements of § 2.309(f)(1)(v).

3. Petitioners misconstrue the Energy Policy Act and fail to demonstrate that Proposed Contention 1's [MISC-A's] challenges to that statute are within the scope of the proceeding.

The Petition's discussion of federal risk insurance alleges that provisions of the Energy Policy Act of 2005 (Pub. L. No. 109-58, 119 Stat. 594 [2005]) (EPAct 2005) have affected the NRC's regulatory independence. Petition at 15-16. A contention must be rejected as outside the scope of a licensing proceeding where it constitutes an attack on applicable statutory requirements. *See Pub. Serv. Co. of N. H.* (Seabrook Station, Units 1 and 2), LBP-82-76, 16 NRC 1029, 1035 (1982), *citing Phila. Elec. Co.* (Peach Bottom Atomic Power Station, Units 2

and 3), ALAB-216, 8 AEC 13, 20-21 (1974). To the extent the contention attacks the policy goals of the Energy Policy Act, such a challenge could not be redressed in this adjudication and the Petitioners have thus failed to demonstrate that the issue is within the scope of this proceeding.

In any event, the Petition is mistaken in its description of the statute in question. The Petition claims that delays covered by the risk insurance program would result in "out-of-pocket costs to the Commission." *Id.* at 16. However, the risk insurance program is administered by the U.S. Department of Energy; the portion of the statute that the Petition cites refers to payments by the Secretary of Energy, not by the Commission. *See* 42 U.S.C.A. §§ 15801, 16014 (2008) (Sections 2 and 638 of EPAct 2005); 10 C.F.R. § 950.3 (2008). The Petitioners' misinterpretation of the statute vitiates their claims regarding any effect on NRC's regulatory independence. Accordingly, this basis fails to demonstrate any concern that is material to the findings the NRC must make. Moreover, this basis attacks the NRC's regulatory process and does not identify any dispute with the Application. This basis therefore fails to meet the requirements of § 2.309(f)(1)(iv) and (vi).

4. Petitioners fail to demonstrate that Proposed Contention 1's [MISC-A's] attacks on the Commission's adjudicatory process are within the scope of the proceeding.

The Petition's criticism of the Commission's adjudicatory process constitutes only a generalized attack on the agency's policies and regulations and is outside the scope of this proceeding. A contention must be rejected where it challenges the basic structure of the Commission's regulatory process or seeks to raise an issue which is not concrete or litigable. *See Seabrook*, LBP-82-76, 16 NRC at 1035, *citing Peach Bottom*, ALAB-216, 8 AEC at 20-21. The Petitioners do not explain how the cited transcript, involving a past argument before an Atomic Safety and Licensing Board, relates to the current proceeding. Petition at 17-18. The Petitioners express general dissatisfaction with, or suspicion of, the NRC's adjudicatory

process, as well as skepticism concerning its "Principles of Good Regulation," but they fail to identify any concern specific to the Bellefonte proceeding or any dispute with the Application. Accordingly, this basis fails to meet the requirements of § 2.309(f)(1)(iii) and (vi).

For the reasons stated above, Proposed Contention 1 [MISC-A] fails to meet the requirements of § 2.309(f) and is not admissible.

B. PROPOSED CONTENTION TWO [MISC-B]: The NRC Fails to Execute Constitutional Due Process and Equal Protection. (Petition at 19).

BASIS:

> The Fifth Amendment to the US Constitution states, "No person shall…be deprived of life, liberty, or property, without due process of law." The Fourteenth Amendment adds that the States may not, "deny to any person within its jurisdiction the equal protection of the laws." In addition to the Atomic Energy Act, the National Environmental Policy Act and other statutes the Nuclear Regulatory Commission must certainly abide by the highest law in the land. However, the agency has violated these rights by applying inequitable standards of protection by treating different people differently and depriving them of Constitutional guarantees. [*Id*.]

Petitioners' equal protection argument is that, "Radioactive exposure standards do not protect all members of the public fairly." *Id*. at 20. Petitioners base their argument on the assertion that children have a significantly higher risk of developing cancer from radiation than adults do, and women have a higher risk of radiation-induced cancer than men do. *Id*. In their due process argument, Petitioners challenge the Price-Anderson Act (Section 170 of the Atomic Energy Act, 42 U.S.C. § 2210), and the decision of the U.S. Supreme Court in *Duke Power Co. v. Carolina Envtl. Study Group*, 438 U.S. 59 (1978). *Id*. at 21-22.

*Staff Response*: The NRC staff opposes the equal protection portion of Proposed Contention 2 [MISC-B] for two reasons. First, it is an impermissible attack on the Commission's regulations in 10 C.F.R. Part 20. Second, it does not satisfy the requirements of § 2.309(f) because it does not identify a dispute with the Application and does not demonstrate that the

proposed contention is within the scope of this proceeding or is material to the findings the Commission must make in this proceeding. The NRC staff opposes the due process portion of Proposed Contention 2 [MISC-B] because it is outside the scope of this proceeding and does not show that a genuine dispute exists with the Applicant on a material issue of fact or law.

1. Proposed Contention 2 [MISC-B] impermissibly attacks the Commission's regulations.

It is well settled that a petitioner in an individual adjudication cannot challenge generic decisions that the Commission has made in rulemaking. 10 C.F.R. § 2.335; *Vermont Yankee*, CLI-00-20, 52 NRC at 166. The Petitioners' assertions use the form of a contention but in actuality are an attack on Commission regulations and policies. Specifically, Petitioners complain that the radiation protection requirements of 10 C.F.R. Part 20 do not provide "equal protection" to children as compared to adults, and women as compared to men. The Petitioners, however, may not attack the Commission's regulations by raising a contention in a proceeding on an application. 10 C.F.R. § 2.335.

2. The equal protection portion of Proposed Contention 2 [MISC-B] fails to satisfy the requirements of 10 C.F.R. § 2.309(f).

Proposed Contention 2 [MISC-B] does not identify any dispute with the Application, and therefore, does not satisfy § 2.309(f)(1)(vi). The Petition states that NRC regulations "will not prevent these elevated levels of exposure" but does not explain to what "elevated levels" in the Application (or even in the Petition) this statement refers. Petition at 19. Similarly, Petitioners make no attempt to demonstrate that their quarrel with the NRC radiation protection standards in Part 20 is somehow within the scope of this proceeding. Proposed Contention 2 [MISC-B] fails to meet the requirements of § 2.309(f)(1)(ii) and (iii) in this regard.

3. The due process portion of Proposed Contention 2 [MISC-B] fails to meet § 2.309(f).

As described above, the "due process" portion of this contention challenges a Supreme Court decision dating from 1978. The Petition is devoid of any information to show how this

portion of the contention raises any dispute with the Application, how it could be within the scope of this proceeding or how it might somehow be material to any finding the Commission must make in this proceeding. Accordingly, the "due process" portion of Proposed Contention 2 [MISC-B] fails to provide sufficient information to show that a genuine dispute exists with the Applicant on a material issue of fact or law, as required by § 2.309(f)(1)(vi), and also fails to meet the standards of §§ 2.309(f)(1)(iii) and (iv).

For the reasons stated above, Proposed Contention 2 [MISC-B] fails to meet the requirements of § 2.309(f) and is not admissible.

C. PROPOSED CONTENTION THREE [FSAR-B]: Plant Site Geology is not Suitable for Nuclear Reactors, Geologic Issues Are Not Adequately Addressed. (Petition at 22).

BASIS:

> Criteria for geologic criteria [sic] in NRC regulations must be met before a combined license may be issued. These criteria are necessary to prevent the construction and operation of nuclear reactors on unstable ground. Information provided by the license applicant must be comprehensive in order to eliminate specific hazards; these are listed in the relevant federal regulations. Failure to account for any of these factors would create potential risks to public safety and health or result in extended shut-downs with associated costs of alternative power to the electric ratepayer. These data are necessary for the Commission to make a sound decision. […]
>
> Geologic and seismic criteria are found in 10 CFR § 100.23 and detail the requirements for determining whether a proposed site is acceptable for a nuclear power plant. The regulation unequivocally states the responsibilities of the license applicant for a COL:
>
> > Each applicant shall evaluate all siting factors and potential causes of failure, such as, the physical properties of the materials underlying the site, ground disruption, and the effects of vibratory ground motion that may affect the design and operation of the proposed nuclear power plant.
>
> 10 CFR § 100.23 (d)(4). The site criteria include the following assessments: earthquake ground motion, surface tectonic and non-tectonic deformations, seismically induced floods and waves,

> soil and rock stability, liquefaction potential, slope stability, cooling water supply, and remote safety structure siting.

Petition at 22-23. Petitioners argue that information in the FSAR regarding caves and sinkholes is incorrect, citing information from Thomas Moss, former director of the Alabama Cave Survey concerning caves, and information regarding sinkholes in a U.S. Geological Survey report. *Id.* at 23-24. Petitioners set forth without attribution a three-paragraph description of "Schedule Issue 2" from "Schedule Issues for the Combined License Review," which is an attachment to the acceptance review letter for the combined license for the Bellefonte Units 3 and 4 application from David B. Matthews, NRC, to Ashok S. Bhatnagar, TVA, dated January 18, 2008 (ML080140230). *Id.* at 26-27. Petitioners also reference two "[r]ecent large earthquakes within seismic zone[,]" one near Knoxville and one "50 miles ESE of Scottsboro, Alabama." *Id.* at 27. Petitioners also express concerns about faults (*id.* at 28-29), and state that, "if a fault lies under the Valley and Ridge region of Southern Appalachia, then the possibility of an earthquake with a magnitude of 5.0 and higher is possible." *Id.* at 29. Petitioners state that such an earthquake "would cause serious damage to a nuclear plant." *Id.*

Petitioners conclude that "the combined license application submitted by TVA fails to contain relevant information about geology and seismicity at the proposed Bellefonte site." *Id.*

*Staff Response*: Although Petitioners state that the COLA, from which it sets forth two paragraphs, "does provide detailed information about the Bellefonte site's seismicity, tectonics and history of the area[,]" citing COLA Part 2 FSAR Section 2.5.1.1.4.2.4.2, and "does discuss the site's geologic features[,]" citing COLA Part 2 FSAR Section 2.5.4.1.3, "Weathering Processes and Features," Petition at 23, they state that "according to local experts, the data submitted by TVA are insufficient to describe the site." Petition at 23. Petitioners state that "[t]he COLA is incorrect[,]" Petition at 24, and offer to demonstrate that conclusion.

With respect to the issue of caves, Petitioners have not shown why the information they cite represents an inadequacy in the Application. Although Dr. Moss's cave count for Jackson County is 1854, while TVA's count is 1,526,[10] Petitioners do not explain why any difference between these cave counts is material to the findings the NRC must make or how this difference represents a material dispute with the Application's analysis or conclusions. Also, the passage from FSAR Section 2.5.4.1.3, set out by Petitioners at page 23 of the Petition, states that "no enterable caves have been located" at the BLN site. FSAR at 2.5-113. Thus, with regard to its assertions concerning caves, Proposed Contention 3 [FSAR-B] fails to satisfy 10 C.F.R. § 2.309(f)(1)(iv) and (vi).

As concerns sinkholes, TVA's statement that "no natural sinkholes have been identified on the site and no enterable caves have been located," Petition at 23 (referring to FSAR at 2.5-113), is not contradicted by the information from the U.S. Geological Survey. Petition at 24-25.

None of the information referenced by the Petition places sinkholes of any kind, natural or induced, on the Bellefonte site. Accordingly, none of the information concerning sinkholes on which Petitioners rely raises a genuine dispute with the applicant on a material issue of law or fact and, thus, does not meet the § 2.309(f)(1)(vi) criteria for admissibility. Similarly, the two earthquakes discussed in the Petition, Petition at 27, are already mentioned in the Application in excerpts that the Petition quotes. Petition at 23. The Petitioners thus do not explain how their reference to these earthquakes reveals any dispute with the Application.

The material offered without attribution from the Staff's "Schedule Issues for the Combined License Review," concerns the Staff's need for TVA to address the effect of new

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[10] According to the ER, TVA's count is based on James Godwin's "Point Rock River Watershed" in From Outer to Inner Space, 2005 National Speleological Society Convention Guidebook, ed. J. Brown and S. Swan (Huntsville, AL, 2005). See FSAR at 2.5-113.

studies since the EPRI-SOG report related to the seismic source on TVA's Probabilistic Seismic Hazard Analysis (PSHA). This issue discussion was developed by the NRC staff to identify review issues with potential implications for the review schedule, and Petitioners do not explain what specific facts or sources support an asserted inadequacy in the Application other than the general discussion provided by the NRC staff in its letter. To demonstrate that a contention is admissible, a petitioner must do more than simply show that the NRC staff is looking into a particular issue in its review of an application; petitioners must themselves provide reasons or support to explain the significance of the identified concern. *Cf. Oconee*, CLI-99-11, 49 NRC 328, 337 ("Petitioners seeking to litigate contentions must do more than attach a list of RAIs [NRC staff requests for additional information] and declare an application "incomplete." It is their job to review the application and to identify what deficiencies exist and to explain why the deficiencies raise material safety concerns.")(emphasis added).[11] Petitioners have failed to offer any specific facts or sources or make any independent argument in support of that part of their contention.

In any event, Schedule Issue 2 states that TVA should, following the guidance of Regulatory Guide 1.208, "A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion," consider new information evaluating the applicability of the EPRI-SOG hazard curves for the site, and, if those hazard curves are significant, update its Probabilistic Seismic Hazard Analysis (PSHA) to include the newer studies. Petitioners do not specifically explain in what way the concerns raised by the NRC staff represent a material deficiency in the Application.

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[11] In *Oconee*, the Commission also noted that NRC staff's issuance of RAIs "does not alone establish inadequacies in the application," and upheld the inadmissibility of a contention where "petitioners themselves provided no analysis, discussion, or information of their own on any of the issues raised in the RAIs[.]" *Id.* at 337.

As noted above, Petitioners do not make any independent argument concerning the Staff's Schedule Issue 2. Thus, Petitioners have failed to satisfy 10 C.F.R. § 2.309(f) in that they have not provided any basis for their contention that plant site geology is not suitable for nuclear reactors and that the Bellefonte site does not meet the criteria of 10 C.F.R. § 100.23(d)(4).

For the reasons stated above, Proposed Contention 3 [FSAR-B] fails to meet the requirements of § 2.309(f) and is not admissible.

D. PROPOSED CONTENTION FOUR [MISC-C]: Failure to Address Impact of Terrorist Attacks. (Petition at 29).

BASIS:

> [T]he NRC no longer has a reasonable basis to claim that the environmental impacts of terrorist attacks need not be considered. [*Id.* at 31.]

In Proposed Contention 4 [MISC-C], the Petitioners acknowledge the Commission's repeated determinations that the National Environmental Policy Act (NEPA) does not require the NRC to consider the environmental impacts of terrorist attacks as part of its environmental review of license applications. Petition at 31, *citing Pac. Gas and Elec. Co.* (Diablo Canyon Independent Spent Fuel Storage Installation), CLI-03-01, 57 NRC 1 (2003); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340 (2002). Nevertheless, the Petitioners argue that "the Commission's policy is unreasonable" and implicitly request that the Commission reconsider its position. Petition at 31.

*Staff Response*: The NRC staff opposes Proposed Contention 4 [MISC-C] for two reasons. First, the Petition fails to meet § 2.309(f) because it fails to identify an issue within the scope of the proceeding, provides no relevant factual support, and identifies no dispute with the Application. Second, without having identified any challenge specific to Bellefonte, the

Petitioners' apparent request for reconsideration of previous Commission decisions must be denied as impermissible.

1. Proposed Contention 4 [MISC-C] does not identify any basis for departing from Commission precedent and thus fails to meet § 2.309(f).

As the Commission has repeatedly explained, the fact that the NRC has taken extensive actions to address the safety of nuclear facilities against the risk of terrorism does not mean that, in licensing proceedings, a review of the environmental impacts of terrorist attacks is also necessary under NEPA. *See, e.g., Amergen Energy Co.* (License Renewal for Oyster Creek Generating Station), CLI-07-08, 65 NRC 124, 130-31 (2007); *Private Fuel Storage*, CLI-02-25, 56 NRC at 343-45, 347-48; *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-24, 56 NRC 335, 339 (2002). The Petitioners acknowledge the Commission's longstanding position on this issue.[12] Petition at 31.

The Petitioners highlight a recent decision from the United States Court of Appeals for the Ninth Circuit that required the Commission to analyze the environmental impacts of terrorist attacks in its NEPA review concerning the Diablo Canyon Power Plant Independent Spent Fuel Storage Installation. *Id.* at 31, *citing San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1030-31 (9th Cir. 2006), *cert. denied*, 127 S.Ct. 1124 (2007). However, as the contention recognizes, the Commission has since reiterated its intention to conduct such an analysis only where Ninth Circuit precedent binds the NRC to do so. *See Oyster Creek*, CLI-07-

[12] In claiming that the Commission's determination not to consider the environmental impacts of terrorist attacks under NEPA is unreasonable, the Petitioners quote a 2001 Licensing Board decision. Petition at 29. In admitting a contention on the NEPA terrorism issue, that decision acknowledged the events of September 11, 2001, and noted that those attacks foreclose arguments "that such terrorist attacks are always remote and speculative and not reasonably foreseeable." *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 446 (2001). The Petitioners fail to note that this portion of the decision was subsequently overturned by the Commission, which emphasized that the existence of the risk of terrorism does not mean that NEPA is an appropriate mechanism for analysis of those risks. *Savannah River MOX*, CLI-02-24, 56 NRC at 339.

08, 65 NRC at 126, 128-29. As Ninth Circuit precedent is not controlling in a proceeding on the Bellefonte application, the Commission's ruling on the issue is binding here.

Moreover, although Proposed Contention 4 [MISC-C] refers generally to the terrorist attacks of September 11, 2001, the contention does not even mention the Bellefonte application; much less articulate a specific dispute with it. Indeed, the Petitioners do not directly argue that an analysis of terrorism is missing from the Applicant's Environmental Report (ER), nor do they explain why such an analysis would be necessary in the Bellefonte proceeding. The Petitioners make reference to the NRCs "new authority" under the U.S. Department of Homeland Security's (DHS) National Response Plan, but fail to explain how that document in any way alters the NRC's responsibilities in its NEPA review. *Id.* at 30. In short, the contention identifies no Bellefonte-specific factual or legal considerations concerning the potential for terrorist attacks or associated environmental impacts.

Accordingly, Proposed Contention 4 [MISC-C] fails to identify an issue within the scope of this proceeding and material to the NRC's findings, state facts that support the Petitioners' position on the alleged issue, or show that a genuine material dispute exists with the Application. Proposed Contention 4 [MISC-C] thus fails to meet the requirements of § 2.309(f)(1)(iii), (iv), (v), and (vi).

2. The Petitioners have stated no procedural basis in this proceeding for requesting reconsideration of prior Commission decisions.

Second, because the Petitioners fail to state any dispute or concern with the Bellefonte Application, Proposed Contention 4 [MISC-C] in effect requests reconsideration of Commission decisions only with respect to certain past or ongoing adjudications. Several of those decisions (e.g., *Oyster Creek*, CLI-07-08; *Private Fuel Storage*, CLI-02-25) arose in adjudications to which Petitioners are not or were not parties and for which the Petitioners therefore have no procedural basis to request such reconsideration. With respect to any adjudications to which

one of the Petitioners (BREDL) was a party (e.g., *Savannah River MOX*, CLI-02-24), the Petition makes no effort to show that a request for reconsideration is timely, 10 C.F.R. § 2.345, or that this is the proper forum in which to make such a request.

In short, because they have identified no clear dispute with the Bellefonte application or any specific basis to alter the Commission's recent and repeated determinations on this topic, the Petitioners have failed to meet the requirements of § 2.309(f) and, furthermore, have not demonstrated a procedural basis for requesting reconsideration of the Commission's prior holdings.

For the reasons stated above, Proposed Contention 4 [MISC-C] fails to meet the requirements of § 2.309(f) and is not admissible.

E. PROPOSED CONTENTION FIVE [MISC-D]: The assumption and assertion that uranium fuel is a reliable source of energy is not supported in the combined operating license application submitted by TVA (the applicant) to the U.S. Nuclear Regulatory Commission. (Petition at 32).

BASIS:

TVA fails to discuss the matter of reliability of uranium fuel supply in the COL when asserting that building new nuclear power reactors is a means of achieving a reliable and cost-effective supply of electricity. Federal regulations require an assessment of related fuel cycle costs. 10 CFR § 50.33(f) The related cost ratio of the power from a power plant that has no fuel is effectively infinite.

Worldwide uranium consumption (about 67,000 tonnes per year) [(World Nuclear Association backgrounder on Uranium Supply posted at: http://www.world-Nuclear.org/info/inf75.html?terms= uranium+supply)] has exceeded worldwide uranium production for some time. Only about 60% of consumption is currently supplied by annual production; [(*id.,* the production of uranium from mines [is] 40,251 tonnes for 2004; 41,702 tonnes for 2005 and 39,429 tonnes for 2006. This leaves a shortfall of uranium to fuel the existing reactors of about 26,000 tonnes. This shortage is being made up by consuming former stockpiles, reprocessing of nuclear weapons uranium, longer reactor cycles and more efficient enrichment processes. The former stockpiles and weapons reprocessing are short term stopgaps and are failing fast.] further,

> actual production of uranium has been effectively level for the last twenty years, as can be seen in the graph below from the World Nuclear Association. While there are various short-term supplies of uranium such as down-blending from nuclear weapons inventories, none of these are projected to last indefinitely. It is incumbent upon the applicant to address these issues and to support the statements cited below which imply that uranium availability will be sufficient to service the existing worldwide fleet of nuclear power reactors over the current periods of license, and in addition, the proposed Bellefonte 3 & 4.
>
> If there is a plan to address the failure of uranium supply during the license period for Bellefonte 3 & 4 with a substitution of plutonium fuel (MOX or mixed-oxide), this information is also missing from the COL application as filed by the applicant, TVA.

*Id.* at 32-33 (footnotes incorporated into text or omitted; graph omitted). The Petition then refers to statements in the ER and technical specification bases with which it disagrees, and it states that there are "numerous other examples of these assertions and assumptions throughout the COL." *Id.* at 33-34. The Petition concludes that "[n]owhere in the COL [application] does the applicant support these assertions." *Id.* at 34.

*Staff Response*: The Petition provides specific references to statements in the ER with which it disagrees.[13] The NRC staff nonetheless opposes Proposed Contention 5 [MISC-D] because the Petition fails to demonstrate a genuine dispute with the Applicant on a material issue of law or fact, contrary to the requirements of § 2.309(f)(1)(vi).

The Petition claims that 10 C.F.R. § 50.33(f) requires "an assessment of related fuel cycle costs." Pursuant to § 50.33(f)(3), an applicant for a COL must submit "information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs[,]" and "information that demonstrates the applicant possesses or has reasonable assurance of obtaining the funds

[13] The Petitioners' asserted dispute with the technical specification bases is vague and is not a specific statement of an issue of law or fact to be controverted. Accordingly, this asserted dispute fails to satisfy the requirements of § 2.309(f)(i).

necessary to cover estimated operation costs for the period of the license." § 50.33(f)(1), (2). However, while the Petition lists various statements in the ER with which it disagrees, it does not identify any dispute with the Applicant's description of its financial qualifications in Part 1 of the Application, "Administrative and Financial Information," a description which was provided pursuant to the regulation the Petition identifies as the basis for its contention. *See* Application Part 1, at 1.1-5. Accordingly, the Petition fails to satisfy § 2.309(f)(1)(vi) with respect to Proposed Contention 5 [MISC-D].

In addition, a document put forth by a petitioner as the basis for a contention is subject to scrutiny both for what it does and does not show. *See Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 (1996), *rev'd on other grounds,* CLI-96-7, 43 NRC 235, 269 n.39 (subject of Board holding not raised for review). With respect to Proposed Contention 5 [MISC-D], Petitioners cite a website for the proposition that more uranium is being consumed than produced and conclude that stopgaps to make up the difference are failing fast. Petition at 32, n.15. That very website also states the following:

> Without . . . estimates of uranium resource replenishment through exploration cycles, long-term supply-demand analyses will tend to have a built-in pessimistic bias (i.e. towards scarcity and higher prices), that will not reflect reality. Not only will these forecasts tend to overestimate the price required to meet long-term demand, but the opponents of nuclear power use them to bolster arguments that nuclear power is unsustainable even in the short term.

World Nuclear Association, "Supply of Uranium" (Mar. 2007). http://www.world-nuclear.org/info/inf75.html?terms=Uranium+supply. (Accessed on June 23, 2008). Petitioners have done precisely what the article they cite predicts: They have used an analysis that does not "reflect reality" to argue that nuclear power is unsustainable in the short term. Accordingly, Petitioners have failed to provide expert opinion, documents or other sources to support their position on Proposed Contention 5 [MISC-D] and fail to satisfy § 2.309(f)(1)(v).

In addition, Petitioners make the curious claim that, "If there is a plan to address the failure of uranium supply during the license period for Bellefonte 3 & 4 with a substitution of plutonium fuel (MOX or mixed-oxide), this information is missing from the [Application]." Petition at 33. Petitioners provide no documentary or other support for the proposition that the Applicant may be planning to use mixed-oxide fuel and, therefore, fail to satisfy § 2.309(f)(1)(v) with respect to this aspect of Proposed Contention 5 [MISC-D]. Petitioners do not even affirmatively assert that mixed-oxide fuel might be used at proposed Bellefonte Units 3 and 4 and thus fail to provide any basis whatsoever for their claim that the Applicant has improperly omitted information regarding such use from the Application. Accordingly, Petitioners' claim that the Application somehow improperly omits information regarding mixed-oxide fuel lacks the basis required by § 2.309(f)(1)(ii).

In view of the above, Petitioners have not provided sufficient information to show that a genuine dispute exists with the Applicant on a material issue of law or fact and have not met the requirements of § 2.309(f)(1)(vi) with respect to Proposed Contention 5 [MISC-D].

F. PROPOSED CONTENTION SIX [MISC-E]: Whether Bellefonte Will Adequately Limit Atmospheric Emissions of Radionuclides. (Petition at 34).

BASIS:

The License Application submitted by TVA fails to meet the relevant requirements in the National Environmental Policy Act because it will not adequately address pollution impacts and require controls necessary to limit hazardous air pollution necessary for the protection of public health and safety.

*Id*. The Petition states that "National Emission Standards for Hazardous Air Pollutants (NESHAP) are subject to maximum achievable control technology standards (MACT)." *Id.* at 35. The Petition states that the proposed Bellefonte facility "will not meet Clean Air Act standards because: 1) without maximum achievable control technology, routine emissions from

the plant would be excessive especially when considered in addition to the existing site-wide radioactive emission levels and 2) the company does not properly account for the higher levels of morbidity and mortality in females and infants caused by low levels of radiation." *Id.* at 35. The Petition states that "no MACT has been issued for radionuclides." *Id.* at 36.

The Petition also states that at Bellefonte, airborne pollutants will be "routed through the HVAC [heating, ventilation, and air conditioning] system and ventilation exhaust passes through high-efficiency particulate air (HEPA) filters." *Id.* at 36. The Petition states that "HEPA filters are an unreliable means of controlling radionuclide emissions" and questions "the validity of emission reduction efficiencies of HEPA pollution control devices for all atmospheric emission points at Bellefonte." *Id.* at 36-37. The Petition concludes that "[u]ntil a health protective measure is in place under Section 112, the NRC must determine the control technology before issuing an operating license." *Id.* at 37.

*Staff Response*: The NRC staff opposes admission of Proposed Contention 6 [MISC-E] for two reasons. First, the Clean Air Act does not require the establishment of a National Emission Standard for Hazardous Air Pollutants (NESHAPs) for nuclear power reactors under conditions that have been satisfied; therefore, contrary to the proposed contention, there is no such standard with which proposed Bellefonte Units 3 and 4 must comply. Second, the proposed contention fails to satisfy § 2.309(f) since it does not demonstrate that the issue raised is material to the findings the NRC must make or demonstrate a genuine dispute with the Application.

1. The NESHAPs for nuclear power reactors has been rescinded, and the NRC need not establish any similar standard.

In 1990, Congress amended section 112(d)(9) of the Clean Air Act (CAA) to provide as follows:

> No standard for radionuclide emissions from any category or subcategory of facilities licensed by the [NRC] . . . is required to be promulgated under this section if the Administrator [of the Environmental Protection Agency (EPA)] determines, by rule, and after consultation with the [NRC] that the regulatory program established by the [NRC] pursuant to the Atomic Energy Act for such category or subcategory provides an ample margin of safety to protect the public health.

CAA, § 112(d)(9), 42 U.S.C. § 7412(d)(9) (2000).

On September 5, 1995, the EPA administrator found that "the NRC regulatory program for licensed commercial nuclear power reactors provides an ample margin of safety to protect public health" and so rescinded the NESHAPs for nuclear power reactors licensed by the NRC. *See* "National Emission Standards for Radionuclide Emissions From Facilities Licensed by the [NRC] and Federal Facilities not Covered by Subpart H" (Final Rule), 60 Fed. Reg. 46,206, 46,210 (Sept. 5, 1995). Neither § 112 of the CAA nor the EPA rule requires the NRC to take any action or set any emission standard in addition to those radiation protection standards in 10 C.F.R. Part 20. Accordingly, Proposed Contention 6 [MISC-E] is legally incorrect in supposing the existence of "NESHAP radionuclide emissions limits" for nuclear power reactors in addition to the standards in 10 C.F.R. Part 20 or supposing that the NRC must set some standard for "control technology" for air emissions of radioactivity. Petition at 37.

2. Proposed Contention 6 [MISC-E] fails to meet the requirements of § 2.309(f).

In order for a contention to be admissible, it must demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding and must provide sufficient information to show that a genuine dispute with the applicant exists on a material issue of law or fact. § 2.309(f)(1)(iv), (vi). In light of the discussion above indicating that the Petition is legally incorrect in supposing the existence of "NESHAP radionuclide emissions limits," the Petition fails to explain why its statements concerning the "emission reduction efficiencies" of HEPA filters are material to the findings the

NRC must make. Likewise, the Petition fails to identify in what way these statements constitute a dispute with the Applicant; the contention includes no reference to a particular section of the Application (the Petition's discussion of HEPA filters begins by stating, "According to the COLA [citation], air pollutants are controlled by…") or a discussion of specific inadequacies in it. Petition at 36-37. Furthermore, while the Petition also claims that the Application fails to meet "relevant requirements in the National Environmental Policy Act," Petition at 34, it does not elaborate on what aspects of NEPA it believes are not met and, in any event, does not identify any specific omissions or inadequacies in the Application that it believes contravene such requirements. Accordingly, Petitioners fail to satisfy the requirements of §§ 2.309(f)(1)(iv) and (vi).

For the reasons stated above, Proposed Contention 6 [MISC-E] fails to meet the requirements of § 2.309(f) and is not admissible.

G. PROPOSED CONTENTION SEVEN [NEPA-A]: Excessive Water Use Contrary to TVA's Purpose. (Petition at 37).

BASIS:

The TVA COLA presents an overly optimistic assessment of water use in the Tennessee River Basin. For example, COLA Part 3 ER Section 2.3.2.4 cites Table 2.3-34 "Projected Water Use for the Year 2030 in the Tennessee River Watershed" on page 2.3-109. The table lists the "increase percentage" with the largest increase (56%) as a result of increased public water supply withdrawal. However, current water withdrawal for public supply is just 5% of all basinwide water use (Table 2.3-24). The COLA ER (Section 2.3.2.2.4) states Bellefonte Units 3 and 4 will withdraw 71,021,664 gallons per day. Compared to local surface water users (Table 2.3-31), Bellefonte would dwarf by an order of magnitude all other water users in the Guntersville Watershed save one: the Widows Creek Fossil Plant, also operated by TVA.

According to TVA's annual report, "the Tennessee Valley continued to experience drought conditions in 2007, which was the driest year in 118 years of record-keeping." [footnote to TVA Annual Report 2007] TVA was able to keep its operations afloat by implementing its 2004 Reservoir Operations Policy which

> provides "river flows to protect aquatic life, keep commercial navigation channels open, provide sufficient water supply, and support power operations." [Id.] However, this finger-in-the-dike approach will be undermined if TVA continues to build more nuclear powered electric generating plants.
>
> Last year drought forced a partial shutdown of TVA's nuclear plant at Browns Ferry, Alabama because of overheated water in the Tennessee River. Unit 2 was shut down completely, and Units 1 and 3 were reduced to 75 percent capacity. Three years ago TVA itself predicted that operations at Browns Ferry would have to be scaled back and could be completely shut down because of overheated discharge water.
>
> In 2007, reduced rainfall in the Southeast began to have a noticeable effect on electric power plants. Lakes are approaching the minimum levels required by the Nuclear Regulatory Commission in the drought-stricken southeastern states. At this time, the dedication of water supply to Bellefonte 3 and 4 is ill-advised, imprudent, wasteful, and contrary to the principal purposes for which the Tennessee Valley Authority was created in 1933: that is, river navigability, flood control and agricultural and industrial development. 16 USC 831. Although the Tennessee Valley Authority Act did sanction the production of electric power, it was incidental; electric power was to be provided consistent with flood control and navigation and largely for the purpose of fertilizer manufacture.

*Id.* at 38, 39 (footnotes noted in text]).

*Staff Response*: The NRC staff opposes admission of Proposed Contention 7 [NEPA-A] because it fails to reference specific sources and documents to support its position on the issue and fails to demonstrate the existence of a genuine dispute with the Application.

The Petitioners cite statements in the ER concerning projected water use for the year 2030, the anticipated increase in public water supply during that time, as well as the expected water use by the proposed Units 3 and 4. *Id.* at 38. The Petitioners also note that the ER shows that the proposed Bellefonte facility would be one of the two largest surface water users in the Guntersville Watershed. *Id.* at 38. However, the Petitioners do not claim that any of these values or statements in the ER are incorrect. The Petitioners fail to explain why the cited

statements demonstrate that the ER's assessment of water is "overly optimistic" or explain how an "overly optimistic" assessment would render the Application inadequate.

Quoting the 2007 TVA annual report, the Petitioners then state that the Tennessee Valley experienced drought conditions in 2007, "the driest year in 118 years of record-keeping," and state that TVA implemented its 2004 Reservoir Operations Policy. *Id.* at 38. However, the Petition does not explain how this assertion reveals a dispute with the values or statements in the ER. The Petitioners also state that drought in 2007 forced partial shutdowns of TVA units at Browns Ferry. *Id.* at 39. Again, the Petition does not explain how that assertion constitutes a dispute with the ER or why it is significant with regard to projected water use by the proposed Bellefonte facility. The Petitioners further state that, last year, "reduced rainfall in the Southeast began to have a noticeable effect on electric power plants" and that "[l]akes are approaching the minimum levels required by the Nuclear Regulatory Commission in the drought-stricken southeastern states." *Id.* at 39. The Petition does not provide any reference for those statements, nor does it explain in what way they contradict the Application.

The Petition broadly characterizes the proposed use of water for a Bellefonte facility as "ill-advised, imprudent, wasteful, and contrary to the principal purposes for which the Tennessee Valley was created in 1933[.]" *Id.* at 39. However, these vague assertions regarding TVA's charter or mission do not present any specific disagreement with the Application, or demonstrate a factual dispute suggesting that the ER as submitted is inadequate.

In sum, Proposed Contention 7 [NEPA-A] lacks factual support and fails to articulate how its statements concerning TVA's water use, drought conditions, nuclear plant shutdowns, or rainfall constitute a dispute with the Application. For these reasons, Proposed Contention 7 [NEPA-A] does not meet the requirements of § 2.309(f)(1)(v) and (vi) and thus is not admissible.

H. PROPOSED CONTENTION EIGHT [NEPA-B]: Impacts on Aquatic Resources Including Fish, Benthic Invertebrates, and General Aquatic Community Structure of the Project [sic] Area, Guntersville Reservoir, and the Tennessee River Basin. (Petition at 39).

BASIS:

> The ER does not adequately address the adverse impacts of operating two additional nuclear reactors on the fishery and aquatic resources of the Tennessee River basin, Guntersville Reservoir, and the vicinity of Bellefonte Nuclear Plant. In particular, the ER does not provide adequate data to sufficiently address: (1) The condition of resident and potadromous fish and freshwater mussels in the vicinity of the proposed intake and discharge points, Town Creek, Guntersville Reservoir, and Tennessee River basin; (2) Aquatic habitat conditions and flow/habitat relationships in both the project area, as well as in the lower-, middle-, and upper-Tennessee River; and (3) Cumulative impacts on aquatic resources from construction and operation of the proposed new intake and discharge. […]
>
> Every application for an NRC permit, including a COL, must be accompanied by an Environmental Report, which shall discuss: (1) The impacts of the proposed action; (2) Adverse environmental effects that cannot be avoided; (3) Alternatives to the proposed action; (4) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and (5) Any irreversible and irretrievable [sic] of resources associated with the proposed action. 10 C.F.R. § 51.45(b)(c) [sic]. The ER "should contain sufficient data to aid the Commission in its development of an independent analysis" of environmental impacts pursuant to the National Environmental Policy Act (NEPA). 10 C.F.R. § 51.45(b).

Petition at 39-40.

Petitioners argue as follows:

1. TVA's conclusion "that impacts to aquatic resources including fish and mussels are small or non-existent, and do not warrant mitigation," is "based only on a general list of the Tennessee River fish and mussel species found in Guntersville Reservoir." Petition at 40-41. The ER does not include "an accurate site-specific description of the fish species and their respective life history stages that utilize the reach of the Tennessee River adjacent to Plant Bellefonte where the new intake and discharge structures are proposed. ER § 2.3." *Id.* The ER

"relies on studies by TVA that collected data in the vicinity of Plant Bellefonte during original construction [of Units 1 and 2] and from the fossil-fuel plant up-reservoir, Widow's Creek; however, these studies do not assess the current conditions of the Tennessee River at the proposed intake and discharge sites." *Id.* at 41.

2. While acknowledging that there will be impacts to the upper Tennessee River aquatic resources because upstream reservoirs will bear the burden of downstream water withdrawal, (ER 2.3.1.2.6 (p. 2.3-10)), and that upstream management may also affect BLN operations that then may differentially affect aquatic resources (ER Section 2.3.1.3 (p. 2.3-14)), the ER does not discuss how "impoundments can significantly affect or be affected by BLN operations beyond stating general descriptions and that the Guntersville Reservoir does not fluctuate more than 2 [feet] annually." Petition at 41. Petitioners consider "this statement," presumably the statement that the Guntersville Reservoir does not fluctuate more than 2 feet annually, to be an acknowledgement by TVA of "significant effects" on downstream aquatic resources. *Id.* Petitioners argue that the ER's conclusion that "Operations of these dams are not expected to have a direct effect on water quality in the vicinity of the BLN" is inconsistent with the previously cited acknowledgments concerning upstream management and that it is, therefore, erroneous, citing ER Section 2.3.3.4.3 (p. 2.3-48). Petitioners argue that an effect on BLN operations is tantamount to an effect on water quality in the vicinity of BLN. Petition at 41-42.

3. Within Guntersville Reservoir, "there has been a 44% decline of freshwater fish captured in TVA sampling since 1994. ER § 2.4.2.4." Petition at 42. Fish species no longer found in the Guntersville Reservoir include paddlefish, American eel, river carpsucker, and others. *Id.* Numerous darter and shiner species have also disappeared from the fish assemblage. *Id.* These fish species are known to be intolerant of habitat alteration and poor water quality. *Id.* There has also been a decline in mussel species. *Id.* at 42-43.

4. The ER's failure to include recent fish survey data from the Tennessee River adjacent to the Bellefonte site or the specific intake and discharge locations amounts to failure to establish a baseline to assess the impacts of the project. Petition at 43.

5. The ER fails to consider "direct impacts of the proposed intake structure on aquatic resources including fish and mussels." *Id.* at 42. It does not estimate the level of mortality from impingement and entrainment in the new intake structure, but rather relies on EPA's performance standards for cooling-water intake structures pursuant to 316(b) of the Clean Water Act, 40 C.F.R. § 125.94. *Id.* at 43-44, *citing* ER Section 5.3.1.1.1. Petitioners argue that "even if the new intake structure complies with the 'best available technology' mandate of the CWA, 33 U.S.C. § 1326(b), the intake structure may still have significant impacts on fishery resources that must be addressed in the ER." Petition at 44, *citing* 10 C.F.R. § 51.45(b).

6. The ER does not adequately address the cumulative impacts of the new intake structure on aquatic resources. "Recent and proper sampling at the intake and discharge structures did not occur," and the ER incorrectly concluded that sampling was not warranted. Petition at 44, *citing* ER Section 5.3.1.2.1.

7. The ER does not mention the effects on freshwater mussels (and the concentration that will be in the discharge plumes) of the molluskicide that will be used as a water treatment chemical. Petition at 44-45.

*Staff Response*:

Proposed Contention 8 [NEPA-B], Subpart 1

In regard to Subpart 1 of Proposed Contention 8 [NEPA-B], Petitioners point to ER Section 2.3 for the proposition that the ER does not consider impacts to aquatic resources. Some of the information that petitioners were unable to find in ER Section 2.3 is found in Section 2.4.2, "Aquatic Ecology," and more specifically in Section 2.4.2.4, "Aquatic Communities." There TVA discusses its sampling methods and its Reservoir Vital Signs

Monitoring Program. ER Table 2.4-7 shows the species identified in three series of surveys, 1949-1984; 1985-1994; 2002-2006. Petitioners are mistaken in their mention of "the reach of the Tennessee River … where the new intake and discharge are proposed," Petition at 41, as TVA's plan is to use the existing intake and discharge. *See* ER at 2.3-34. Petitioners' Proposed Contention 8 [NEPA-B], Subpart 1 is lacking in basis and specificity, since it fails to cite to specific sections or subsections of the application and/or alleges that information is missing from the ER when the information is to be found but not in the place Petitioners cite.

Proposed Contention 8 [NEPA-B], Subpart 2

Proposed Contention 8 [NEPA-B], Subpart 2, consists of statements taken out of context that, in context, are not contradictory. ER Section 2.3.3.4.3, "Dams and Reservoirs," says that the operations of TVA's dams are not expected to have a direct effect on water quality in the vicinity. None of the statements said by Petitioners to be contradictory actually contradict that statement. Thus, there is no genuine issue of material fact raised by Petitioners' reading of TVA's description of the operations of its dams. Proposed Contention 8 [NEPA-B], Subpart 2, thus, fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and is, therefore, not admissible.

Proposed Contention 8 [NEPA-B], Subpart 3

In Subpart 3 of Proposed Contention 8 [NEPA-B], Petitioners contend that there has been a 44% decline in fresh water fish captured since 1994, citing ER Section 2.4.2.4. Petition at 42. That subsection, Aquatic Communities, states that sampling between 1985-1994 produced 68 fish species while sampling between 2002-2006 produced 46 fish species. The reduction is in the number of ***species***, not the number of fish, and the percentage difference between the two sampling series is 32, not 44. As this matter does not represent a material dispute with the Applicant regarding a material issue of law or fact, Proposed Contention 8 [NEPA-B], Subpart 3 is not admissible. 10 C.F.R. § 2.309(f)(1)(vi).

Proposed Contention 8 [NEPA-B], Subpart 4

Petitioners contend that the ER, by failing to include recent fish survey data, has failed to establish a baseline to assess the impacts of the project. Petition at 43. The ER addresses this matter in ER Section 5.3.1.2.1, where TVA states:

> Important aquatic resources include threatened, endangered, and other species of special interest, and critical habitat for these and other species. Table 2.4-7 lists fishes identified in Guntersville Reservoir over time. Species collected are common and community structure uniform for all sampling locations. Because species composition is similar for intrareservoir sampling and habitat near the intake and discharge structures are not rare or unique to the reservoir, additional sampling at the intake and discharge structures was not warranted.

Thus, Proposed Contention 8 [NEPA-B], Subpart 4, does not present a genuine issue of material fact with the applicant and it should not be admitted. 10 C.F.R. § 2.309 (f)(vi); *see also Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-07-03, 65 NRC 237, 255-57 (2007), where the Licensing Board rejected a proposed contention similar to Proposed Contention 8 [NEPA-B] that alleged insufficient information to support an adequate baseline.

Proposed Contention 8 [NEPA-B], Subpart 5

In Proposed Contention 8 [NEPA-B], Subpart 5, Petitioners allege that in lieu of estimating mortality from fish impingement and entrainment in the new intake structure, the ER relies on EPA's performance standards pursuant to CWA § 316(b). Petitioners allege that even if the new intake structure complies with the "best technology available" mandate, it still may have significant impacts on fishery resources that must be addressed in the ER, citing 10 C.F.R. § 51.45(b). Petition at 44. The ER addresses this matter in Section 5.3.1.1.1, where it states that "BLN meets the performance standards specified in the EPA regulations implementing Section 316(b). In addition, Regulation 40 C.F.R. § 125.94(a)(1)(i) indicates that if a facility's flow is commensurate with a closed-cycle recirculation system, the facility has met the

applicable performance standards and is not required to demonstrate that it meets impingement mortality and entrainment performance standards." ER at 5.3-2.

Petitioners complain that the ER fails to consider the impact of the intake on mussels. However, the ER addresses that impact. According to the ER, a mussel survey performed in April, 2007 identified only common mussels in low density adjacent to the BLN site, and TVA concluded that impacts from the intake system to shellfish "are expected to be SMALL." ER at 5.3-4.

Proposed Contention 8 [NEPA-B], Subpart 5 does not present a material dispute of law or fact with the Application and, thus, fails to satisfy 10 C.F.R. § 2.309(f)(1)(vi). The NRC staff submits that it is inadmissible in this proceeding.

Proposed Contention 8 [NEPA-B], Subpart 6

Proposed Contention 8 [NEPA-B], Subpart 6 regarding the need to address the cumulative impacts of the new intake system is based on an erroneous impression of TVA's plans. Bellefonte Units 3 and 4 would use the existing intake structure. *See* ER at 2.3-34. The matter of the ER's conclusion that sampling was not warranted was raised in Proposed Contention 8 [NEPA-B], Subpart 5 and was addressed by the NRC staff in its response to that Subpart. Neither of the matters Petitioners raise here involves a dispute with the Applicant regarding a material fact and, thus, Proposed Contention 8 [NEPA-B], Subpart 6, does not meet the requirements for admissibility in 10 C.F.R. § 2.309(f)(1)(vi). The Subpart should not be admitted.

Proposed Contention 8 [NEPA-B], Subpart 7

Proposed Contention 8 [NEPA-B], Subpart 7 alleges that the ER does not mention the effects on freshwater mussels (and the concentration that will be in the discharge plume) of the molluskicide that will be used as a water treatment chemical. Petition at 44-45. However, the ER addresses biocide discharge concentrations in ER Section 5.5.1.1.1, which states,

> A description of the anticipated nonradioactive, liquid-waste chemical and biocide discharge concentrations is provided in Section 3.6. Biocides are added in parts per million concentrations and are consumed leaving very small concentrations by the time they are discharged. The NPDES permit issued by ADEM [Alabama Department of Environmental Management] imposes monitoring and concentration limits on outfall DSN003d (cooling tower blowdown). The current NPDES permit takes biocide and chlorine concentrations in to [sic] account and the associated discharge limits are established to protect receiving waters. Because biocides and chemicals used for water treatment are added in parts per million concentrations and are largely consumed serving their purposes, and the NPDES permit takes the potential for these substances being in the discharge into consideration by establishing requirements for appropriate chemical parameter monitoring and acceptable limits the impact from these discharges is considered to be SMALL[.]

ER at 5.5-3. With their Proposed Contention 8 [NEPA-B], Subpart 7, Petitioners have failed to show a material issue with the Applicant and have failed to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(vi). The Subpart should not be admitted.

For the reasons stated above, none of the subparts of Proposed Contention 8 [NEPA-B] satisfies the requirements of 10 C.F.R. § 2.309(f). Therefore, the contention should not be admitted.

I. PROPOSED CONTENTION NINE [NEPA-C]: Alternatives to the Proposed Action Lacking. (Petition at 45).

BASIS:

> TVA in its pursuit for additional nuclear capacity ignores the letter and spirit of the [IRP – Energy Vision 2020]. … TVA, through its multiple references to Energy Vision 2020 has spun the illusion that this request comes out of an extensive stakeholder involvement process. This is not the case. Upon examination of this document, the NRC will find that the people of the TN Valley want a very different energy future than the one envisioned by TVA.

*Id.* at 45-46. The Petitioners criticize TVA's characterization of its Integrated Resource Plan (IRP), referred to in the Petition as the "IRP – Energy Vision 2020 EIS." Petition at 45. After quoting excerpts from the Application about the IRP, Petitioners argue that TVA's Bellefonte

proposal "ignores the letter and spirit of the IRP." *Id.* The Petitioners then quote portions of the Application that describe Energy Vision 2020's "key recommendations." *Id.* at 46. The Petitioners appear to criticize TVA for referencing Energy Vision 2020 and creating "the illusion that [the Application] comes out of an extensive stakeholder involvement process." *Id.* The Petitioners assert, without elaboration, that examination of Energy Vision 2020 indicates that "the people of the TN Valley want a very different energy future than the one envisioned by TVA." *Id.*

The Petitioners then include a subsection to Proposed Contention 9 [NEPA-C], entitled "Demand Side Management." ["DSM"] *Id.* at 47. This subsection consists of an excerpt from the Application that discusses TVA's approval of a new Strategic Plan in May 2007. *Id.* The last sentence in the quoted excerpt states, "DSM forecasts are current as of February 2007 and do not include changes that may result from TVA's 2007 Strategic Plan approved May 31, 2007." *Id.* After citing the excerpt, the Petitioners state that "TVA does not even attempt to project a reasonable DSM forecast. This is clearly an inadequate analysis." *Id.*

*Staff Response*: The NRC staff opposes admission of Proposed Contention 9 [NEPA-C] because it fails to demonstrate that the issue raised is material to the findings the NRC must make and fails to demonstrate the existence of a genuine dispute with the Application.

First, the Petition does not explain why its description of the IRP is material to the NRC's review. TVA refers to the IRP in its ER, but the IRP itself, including the IRP text quoted by the Petitioners (*see* Petition at 46), is not part of the Application. In any event, the Petitioners do

not explain why the quoted statements and recommendations from the IRP contradict or are even inconsistent with any of the portions of the Application that the Petition cites.[14]

Likewise, the Petition attacks "the illusion that this request comes out of an extensive stakeholder involvement process," *id.*, but does not explain why the extent of "stakeholder involvement" in TVA's development of either the IRP or the Application is material to the NRC's review. *Id.* The Petition also does not identify a clear dispute with either the specific recommendations in the IRP, the alternatives selected for discussion in the Application (whether drawn from the IRP or otherwise), or the Application's analysis of those alternatives.

Finally, with respect to the consideration of demand-side management, the Petition cites TVA's statement that "DSM forecasts are current as of February 2007 and do not include changes that may result from TVA's 2007 Strategic Plan." Petition at 47. The Petitioners simply conclude that "TVA does not even attempt to project a reasonable DSM forecast. This is clearly an inadequate analysis." *Id.* at 47. However, the Petition does not explain the alleged inadequacy either in the referenced statements concerning DSM or in other portions of the Applicant's discussion of DSM in ER Section 9.2.1.3, which extends both before and after the quoted excerpt from page 9.2-5 to 9.2-8. More fundamentally, the Petition fails to even state why a discussion of DSM is required in the Application or how the adequacy of such an analysis is material to the findings NRC must make.

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[14] Moreover, the Petition ignores other sections of the ER that appear to discuss the very concerns the Petition highlights in its excerpts from the IRP. The Petition quotes statements from the IRP that address, for example, recommendations concerning use of "flexible purchases of power," "natural gas or coal" alternatives, "energy efficiency," and "renewable energy" resources such as wind and solar energy. The Petition fails to explain why the ER's discussion of these topics is inadequate, such as in ER Sections 9.2.1.1, "Power Purchases From Other Sources," 9.2.2.9, "Pulverized Coal," 9.2.2.11, "Natural Gas," 9.2.1.3, "Demand Side Management," 9.2.2.1, "Wind", and 9.2.2.2, "Solar Technologies."

For the reasons stated above, Proposed Contention 9 [NEPA-C] fails to meet the requirements of § 2.309(f)(1)(iv) and (vi), and thus it is not admissible.

J. PROPOSED CONTENTION TEN [NEPA-D]: TVA's Power and Energy Requirements Forecast Fails to Evaluate Alternatives. (Petition at 47).

BASIS:

> The Environmental Report does not adequately evaluate alternatives, including the no-action alternative and does not include any adverse information. […] Pursuant to [10 C.F.R.] § 51.45(e), the Environmental Report "should not be confined to information supporting the proposed action but should also include adverse information."
>
> For energy supply, negative alternatives include efficiencies and demand-side management which will allow TVA to abandon the nuclear option at Bellefonte. Positive alternatives to nuclear power include solar, wind and other renewable sources of energy.

*Id.* at 47, 48. To support this statement, Petitioners state that TVA's ER "addresses the no-action alternative in the following manner" and cite a single paragraph from the ER concerning the no-action alternative. *Id.* at 48.

*Staff Response*: The NRC staff opposes the admission of Proposed Contention 10 [NEPA-D] because the Petition fails to explain the basis for the contention, fails to state the facts supporting the Petitioners' position on the issue together with references to the sources and documents on which the petitioner intends to rely, and fails to show that a genuine dispute exists with the Application.

In Proposed Contention 10 [NEPA-D], the Petitioners appear both to misunderstand the no-action alternative and to ignore other portions of the ER that 1) discuss the no-action alternative in greater detail and 2) do discuss the renewable energy alternatives identified by the Petitioners. As an initial matter, the Petition fails to identify or explain any dispute with the one

paragraph it cites from the ER concerning the no-action alternative, or to provide any supporting factual basis for such a dispute, and thus fails to meet § 2.309(f)(1)(ii), (v), and (vi).

However, even if the Petition could be understood to implicitly criticize the Applicant's discussion of the no-action alternative for not including "adverse information," the Petition simply ignores the remainder of the ER's discussion of the no-action alternative presented in ER Section 9.1. Indeed, the paragraph preceding the cited paragraph in ER Section 9.1 includes the statement that, under the no-action alternative of denial of the COL, "the environmental impacts associated with the BLN project would not occur[.]" ER at 9.1-1. Likewise, the paragraphs immediately following the cited paragraph in the ER identify other options (and combinations of options) stemming from the no-action alternative, including "Demand-Side Management," "Alternatives to Generating Capacity," Construct[ing] Alternative Generation," and a "Combination" of approaches. ER at 9.1-1, 9.1-2. The ER notes that each of these approaches is discussed further within ER Sections 9.2 and 9.3. On their face, these categories include the very approaches the Petition appears to claim should be evaluated. Petition at 48. As such, the Petition fails to identify any supporting factual basis for the contention or explain how the Application is materially inadequate.

Given that each of the examples of alternatives that Proposed Contention 10 [NEPA-D] identifies are indeed discussed in the ER, and that the contention does not identify with specificity any inadequacy in the ER's analysis either of those alternatives or of the no-action alternative in ER Section 9.1, the contention fails to meet the requirements of § 2.309(f)(1)(ii), (v), and (vi). Thus, it is not admissible.

K. PROPOSED CONTENTION ELEVEN [NEPA-E]: TVA's COLA Power Demand Forcast [sic] Fails to Justify Need for New Nuclear Reactors. (Petition at 49).

BASIS:

> [Several economic] factors are reshaping global economics, but TVA has not addressed their potential impacts within its service area in any of its forecast scenarios. [Petition at 49.] […]
>
> [Demand] peaks are best addressed through energy efficiency and demand response strategies, all of which have been ignored by TVA in these projections. [Petition at 51.] […]
>
> [TVA does not appropriately address] Factors Affecting Growth of Demand [Petition at 51.] […]
>
> TVA has not estimated the importance of energy efficiency and substitution in the service area[.] [Petition at 55.] […]
>
> TVA has not adequately forecast the growth in the real price of electricity. [Petition at 58.] […]
>
> TVA has not considered the fact that distributed and self-generation by customers is increasing as power costs increase and the cost of distributed generating systems decrease. TVA has not considered the fact that dramatic improvements in electricity use have occurred recently and are projected to continue due to energy efficiency codes for equipment and appliances as well as buildings. As a result, new customers, on average, may have very different usage rates than previous generations of customers. TVA has not forecast the effects of a prolonged recession on demand for electricity within TVA's service area.

*Id.* at 63. Petitioners raise several challenges to the analysis of the need for power in the Applicant's ER. These include challenges related to power and energy requirements (*Id.* at 49); forecasts of energy, capacity, and load factors (*Id.* at 51); factors affecting growth of demand (*Id.* at 51); price and rate structures (*Id.* at 58); power supply (*Id.* at 61); and TVA's overall assessment of the need for power (*Id.* at 62).

*Staff Response*: The NRC staff opposes the admission of Proposed Contention 11 [NEPA-E]. For the reasons stated below, the Petitioners fail to provide factual support, including references to specific sources and documents, for any of the key stated bases for the contention. The Petitioners also fail to provide sufficient information to show that a genuine

dispute exists with the Applicant on any material issue of law or fact. Accordingly, Proposed Contention 11 [NEPA-E] fails to meet the requirements of § 2.309(f)(1)(v) and (vi), and thus it is not admissible.

1. The Petitioners fail in Proposed Contention 11 [NEPA-E] to reference sources and documents to support their position.

As explained below, for essentially every assertion of fact or opinion that the Petitioners present as a basis for Proposed Contention 11 [NEPA-E], the Petitioners fail to reference specific sources or documents that support their position, contrary to the requirements of § 2.309(f)(1)(v).

*a. Power and Energy Requirements*

In criticizing the ER's analysis of power and energy requirements, Petitioners argue that TVA has not addressed scenarios for certain economic conditions, namely "Growth in ranges from 0.1% to 2.7%[;] Recessionary economic conditions (less than 0% growth in GRP)[;] Economic impacts of continuing oil and coal price increases[;] High inflation. In 2007, inflation increased 4.1%, the highest in 17 years." Petition at 49. The Petitioners then assert that "[w]e are currently in or near a recession, the duration of which is unknown. The cost of oil has passed $120 per barrel and continues to rise. These factors are reshaping global economics, but TVA has not addressed their potential impacts within its service area in any of its forecast scenarios." Petition at 49. Petitioners provide no citations for their specific price and cost inflation figures, nor for their broad assertions concerning economic recession conditions, oil and cost price trends, or how these factors "are reshaping global economics." Petition at 49. More fundamentally, the Petitioners provide no factual basis whatsoever for an argument that the "scenarios" they posit (such as of essentially zero or negative GRP growth, of inflation at 2007 levels or higher, or of unspecified "continuing oil and coal price increases") are reasonable, much less necessary, assumptions for developing long-term economic forecasts.

Petition at 49. Indeed, it is not even apparent in what way Petitioners contend that such scenarios would be defined or modeled in any long-term forecast.

Similarly, Petitioners argue that TVA has not analyzed "potential economic scenarios in which its major industrial customers have to reduce or even cease their operation due to changing global factors. TVA's largest direct-served customers are auto assembly plants and aluminum processors." Petition at 50. Petitioners do not identify to what "changing global factors" they refer or what such "scenarios" would entail, much less why such assumptions would be reasonable. Petition at 50. Petitioners suggest that TVA analyze a situation where "[l]imited and/or diminishing supplies of oil cause oil's price to increase to levels prohibitive for use of private automobiles. In 2007, autoplant output fell by 4.1%. It is a possible scenario that the autoplants in the service area will continue to decrease their production." Petition at 50. Petitioners next suggest that TVA analyze the situation where "[e]xhaustion of the supplies of bauxite and the rising price of electricity within the US may cause the aluminum industry to move offshore." Petition at 50. Again, Petitioners completely fail to provide references either for their statistical assertion or for the plausibility and reasonableness of their posited "possible" scenarios, much less any support for why these matters must be addressed in the Application.

Petitioners next challenge TVA's analysis of competitive prices within the region, stating that "TVA's rates are now equal or comparable to surrounding wholesale power providers," that "TVA's wholesale price is no longer competitive," and that "[e]nergy intensive industrial customers will locate in regions with lower energy costs and less price volatility." Petition at 50. Petitioners provide no factual support for any of these assertions or predictions. Petitioners suggest that "TVA's price will continue to rise as TVA struggles to remain solvent by increasing rates to pay off its large debt," and state that "TVA as of April 1, 2008 has increased its rates by 12%." Petition at 50. Petitioners again provide no factual support or references either for their factual claim or for their associated prediction concerning price increases.

Petitioners challenge TVA's statement concerning declining real price forecasts, arguing that TVA does not account for "the long term rise of fuel prices," "Congressionally mandated carbon tariffs," or "[TVA's] need to increase the cost of power to recover its existing $25 billion debt and the additional accrued debt for its nuclear renaissance." Petition at 50-51. However, Petitioners fail to identify any facts and sources to support or explain any of these vague challenges. Petitioners present no sources to support their assertion concerning long-term fuel prices, to explain what "carbon tariffs" they reference (or how they would relate to any aspect of TVA's price forecasts), or to support their speculation concerning TVA's management of debt.

*b. Forecasts of Energy, Capacity, and Load Factors*

Petitioners also criticize TVA's forecasts of energy, capacity, and load factors. Petitioners argue that "[i]nstead of using demand response strategies to improve its system load factor, TVA wants to solve its load factor using baseload capacity. The residential peaks are best addressed through energy efficiency and demand response strategies, all of which have been ignored by TVA in these projections."[15] Petition at 51. Yet Petitioners fail to identify and cite any specific strategies or programs that TVA has not discussed.[16]

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[15] Petitioners subsequently cite an NRC guidance document that they describe as NRC's "standard review plan," but the quoted text is not from the current NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants" (2000), but to a section of a 2007 draft Revision 1 to NUREG-1555 that has been made available for public comment and is currently under NRC staff consideration. In any event, Petitioners fail to explain how the Application's emphasis on the analysis of baseload power needs is in any way inconsistent with the quoted guidance.

[16] Also, as explained further below in Section III.K.2.b, Petitioners fail to identify any dispute with several sections of the ER that do in fact discuss energy efficiency and demand response activities.

Petitioners next argue that "TVA does not present analysis of perimeter [sic] estimates to determine the degree to which they agree with other estimates that are generally available for the region[.]" Petition at 51. However, the Petition does not identify any applicable requirement for TVA to do so, and likewise presents no factual support concerning any such estimates that Petitioners believe are inconsistent with the Application.

Furthermore, the NRC staff notes that in this assertion and its 3 sub-bullets on page 51 of the Petition, Petitioners paraphrase statements from NRC staff guidance in NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants" (2000) (or from sections of the 2007 draft Revision 1 of that document[17]). Petitioners repeat this approach in several later portions of this contention. NRC guidance documents are not requirements; they simply identify an approach that the NRC staff considers acceptable for meeting relevant NRC regulations. *See Int'l Uranium (USA) Corp.*, CLI-00-1, 51 NRC 9, 19 (2000); *Louisiana Energy Servs.* (Claiborne Enrichment Center), LBP-96-7, 43 NRC 142 (1996), *review granted in part, denied in part,* CLI-96-8, 44 NRC 107, 108 n.1 (1996) (no review on this issue).[18] In Proposed Contention 11 [NEPA-E], the Petitioners have not provided any independent factual support or related sources to support a claim of any inadequacy in the Application stemming from these statements from NRC guidance. Petitioners simply assert, without any further explanation, that TVA has not provided the stated analysis. Petitioners do not clearly explain why the alleged

[17] For information on those sections of NUREG-1555 for which a draft update has been published for public comment, see http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1555/#updates.

[18] NUREG-1555 states that "Environmental standard review plans are not substitutes for regulatory guides or the Commission's regulations and compliance with them is not required." NUREG-1555, at 1.0-1.

absence of these discussions from the ER is contrary to any applicable requirement or why the supposed omissions make the Applicant's analysis or conclusions materially inadequate.

Accordingly, for those sections of the contention that rely on nothing more than bare quotations from NRC staff guidance, the Petition fails to provide facts to support its position and fails to identify a genuine dispute with the Application on a material issue of law or fact, and thus fails to satisfy the requirements of § 2.309(f)(1)(v) and (vi).

*c. Factors Affecting Growth of Demand*

Petitioners next challenge the ER's discussion of certain factors affecting growth of demand. The Petitioners challenge TVA's projections concerning growth of GRP and GDP by referencing "[t]he Energy Information Administration's [EIA] AEO2008 reference case" and stating that "[a]s TVA's projections are not in line" with that case, "it must revise its forecast accordingly." Petition at 52. While it is not entirely clear on which specific EIA document the Petition relies for this claim, the Petition in any event does not explain why the identified discrepancy between the TVA and EIA projections of GDP would necessitate any change to the long-term GRP projections in the Application.

Petitioners next argue that "[f]or all of 2007, the GNP grew 2.2%, significantly below the projected 2.8%. Economists now predict lower, if not negative, growth. … As we enter a recessionary period, TVA needs to revise its projections." Petition at 52. Petitioners provide no reference for their 2007 GNP projection, nor do they identify any of the other projections of lower or negative growth they assert. More importantly, Petitioners provide no explanation of how such short-term projections would affect the validity of TVA's assumptions concerning long-term growth rates. Petitioners similarly provide no references for their subsequent statements concerning TVA's recent and current power sales, nor any explanation of their relevance for the Application's long-term projections. Petition at 52-53.

Petitioners also appear to challenge the ER's discussion of service area population. The Petition claims, without a specific reference to the ER, that "TVA focuses on two high end in-migrants: corporate headquarters relocation and retirees, both of which TVA says will serve as engines of regional economic growth." Petition at 53. The Petition then states that "[a] large driver of the increase in regional population will be the influx of Hispanics and a high Hispanic birthrate (TN Department of Health.)" *Id.* This statement does not make clear what specific source or document it is based on or what geographic area or period of time it covers, much less how it contradicts the summarized TVA analysis. The Petition also argues that "TVA does not estimate employment by major industries" but does not explain what facts related to this issue support an assertion that the Applicant's analysis or conclusions are materially inadequate.[19]

The Petition then criticizes the Application's projections related to forecasts of personal income growth. Petition at 53-54. Petitioners make a series of assertions concerning energy use by "lower and middle income" households; recent median income, income gaps and income equality in Tennessee, as well as eligibility of Tennessean households for federal heating / cooling assistance; the likelihood of future per capita income increases being "concentrated among the wealthiest"; declining average growth in wages and salaries; and the poverty rate in Tennessee and nationally. Petition at 54. The Petition fails to make clear what specific sources or documents it relies on for any of these statements. Two of the section's eight bulleted points provide only "US Census Report" as a basis, without further reference or year; one bullet

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[19] The Petition again appears to have excerpted language from NRC guidance in NUREG-1555 (or draft Revision 1 of that document) without presenting any independent explanation of why the Petitioners believe the Application is materially inadequate. See discussion *supra*, section III.K.1.b; *compare* Petition at 53 *with* NUREG-1555, draft Revision 1, Section 8.2.2, at 8.2.2-4. In any event, the ER states that TVA's economic growth model includes forecasts by SIC grouping. *See* ER at 8.2-2.

attributes its statement to "(LIHEAP)", and the other statements lack any reference at all. Petition at 54. These references do not identify specific sources and documents and thus do not satisfy § 2.309(f)(1)(v).

*d. Energy Efficiency and Substitution*

With respect to the Application's discussion of energy efficiency and substitution, the Petition again appears to have largely excerpted language from NRC guidance in NUREG-1555 (or draft Revision 1 of that document) without presenting any independent explanation of why the Petitioners believe the Application is materially inadequate. Petition at 55. These excerpts include the Petition's references to TVA's estimating the effects of energy efficiency and substitution in the service area on projected kWh sales and peak demand; power production from renewables by customers; and historic and projected future electricity growth rates in conjunction with comparable trends and forecasts for retail electricity prices. Petition at 55; *see* NUREG-1555 at 8.2.1-5, 8.2.1-7; NUREG-1555, draft Rev. 1, at 8.2.2-7. Petitioners comment that the "TVA long-term forecasts projects [sic] no energy efficiency savings throughout the time period," but they do not provide any factual support to challenge any of the analysis in ER Section 8.2.2.2. Petition at 55. Likewise, the Petition states that "[i]n light of the certain Congressional requirement for utilities to adopt Renewal Portfolio Standards of 15% or more, it is clearly unrealistic for TVA to project no renewable contribution to its generating capacity." Petition at 55. The Petition does not identify the source of this "certain Congressional requirement" and does not explain whether it is (or would be) applicable to TVA or whether it is relevant to proposed increases in baseload power capacity. Moreover, the Petition does not identify any clear dispute with the ER's subsequent discussion of certain renewable energy sources, including solar and wind energy generation and their current or expected contribution to TVA's generation mix. *See* ER at Section 9.2.2.1 and 9.2.2.2.

The Petitioners make several additional statements in this subsection of the contention concerning electricity price forecasts, again without any references to supporting sources or documents. The Petitioners state that "[o]n April 1, 2008, TVA ratepayers will see a 12% increase in their electric bills. This latest rate increase will cause TVA rates to rise to the mid-range of national electricity prices." Petition at 56. The Petition asserts that "TVA [sic] new rates will make its electricity prices uncompetitive within the region. Most of the bordering states will have lower electricity prices." Petition at 56. The Petition also argues that "[i]n light of the certain need for a carbon tax to respond to the need for GHG reduction and increasing fuel costs, it is unrealistic for TVA to claim that the real price of electricity will decline through the forecast period." Petition at 56. As none of these statements is accompanied by a supporting source, the Petitioners have offered no factual basis for the assertions, only speculation.

For the remainder of this section of the contention concerning energy efficiency and substitution (from the middle of page 56 of the Petition to the first paragraph on page 58), the Petitioners appear to have again simply excerpted numerous statements from NRC guidance in NUREG-1555 (or draft Revision 1 of that document) to allege failures in the ER, without presenting any independent explanation of why the Petitioners believe the Application is materially inadequate. *Compare* Petition page 56 (line 9) through 58 (line 2) *with* NUREG-1555 at 8.2.2-5 through 8.2.2-8 and NUREG-1555 (draft Rev. 1 to Section 8.2.2) at 8.2.2-7, 8.2.2-8, 8.2.2-9, and 8.2.2-11. Accordingly, the Petitioners again fail to provide factual support to indicate a dispute with the Application based on these assertions.

*e. Price and Rate Structures*

The Petitioners also challenge TVA's discussion of price and rate structures, claiming that TVA "has not adequately forecast the growth in the real price of electricity." Petition at 58. For two of the asserted inadequacies in the ER (see Petition at 58, lines 9-11; Petition at 59, lines 8-9), the Petitioners appear to have again simply excerpted statements from NRC

guidance in NUREG-1555 (or draft Revision 1 of that document) without presenting any independent explanation of why the Petitioners believe the Application is materially inadequate. *See* NUREG-1555 at 8.2.2-6, 8.2.2-7; NUREG-1555, draft Rev. 1, Section 8.2.2, at 8.2.2-9, 8.2.2-10. Petitioners then claim that "TVA can curtail approximately 43 MW of load upon demand" and state that "[f]or a utility that projects a 10,000 MW increase in peak demand, it is irresponsible for it to so completely dismiss demand side management within its forecast period." Petition at 59. Again Petitioners provide no specific support for this general criticism of TVA's forecast. Similarly, after noting statements in the ER concerning demand side management forecasts, Petitioners state that "[w]e have learned from responsible TVA sources, that TVA expects to implement these TOU and other DMS [sic] rate reform structures within two years. TVA currently has the capacity to model the effect of season, time-differentiated structures in its forecast." Petition at 59. Petitioners provide no references to indicate what these unnamed "responsible TVA sources" are, nor do they make clear how these statements, even if correct, would dispute the cited statements in the ER.

Petitioners further assert that "[i]t is unrealistic for TVA to project a long term forecast without the moderating effects of DMS [sic] programs. Using the available DMS [sic] tools available to utilities, demand side management could by itself reduce TVA's peak loads to historic levels. TVA has provided a completely inadequate analysis of the energy efficiency potential to avoid the need for new capacity." Petition at 59. Once again, Petitioners reference no support for this bare assertion, do not identify the "DMS tools" to which they refer or explain their applicability to TVA, do not specify what demand reductions they claim would be realistic, and do not identify what is meant by "historic levels" in TVA's peak loads.

Subsequently, on page 60 of the Petition, the Petitioners again appear to rely upon numerous statements excerpted from NRC guidance in NUREG-1555 (or draft Revision 1 of that document) to establish inadequacies in the ER, without presenting any independent

explanation of why the Petitioners believe the Application is materially inadequate. Indeed, the first three bulleted points on page 60 are essentially identical to the assertions previously made on page 57 of the Petition. For the reasons explained earlier, the mere invocation of NRC guidance documents does not present factual support for a dispute with the Application. *See, e.g.*, *Int'l Uranium*, CLI-00-1, 51 NRC at 19.

Finally, the Petitioners make several more assertions in this subsection of the contention without any specific reference to supporting sources or documents. The Petitioners assert that TVA has not accounted for "the passage of updated building codes and standards by the TN General Assembly," "the development of the TN State Energy Plan announced by an Executive Order by Governor Bredesen," or "the inevitable Congressional mandated improvements in appliance and equipment efficiency standards." Petition at 60. Petitioners do not specifically identify any of these standards or plans (including whether they are currently in effect or only under development) and do not explain why or whether any of them would be applicable to TVA. Petitioners lastly argue that "TVA has not considered CHP [combined heat and power] as a significant source of power generation" and that "TVA has not determined the effect of an aging existing population on the rate of growth of electrical demand." Petition at 61. Yet the Petition does not provide any factual basis explaining why combined heat and power would be a viable power generation consideration for TVA, how an "aging existing population" would potentially affect TVA's need for power analysis, or why either analysis would be necessary in the ER.

The Petitioners conclude this subsection of the contention with an assertion that the NRC "must exercise purview of the TVA power demand forecast" because "[n]o other external entity has this responsibility." Petition at 61. This assertion appears to duplicate the Petitioners' argument subsequently presented in Proposed Contention 12 [NEPA-F]. As explained in more detail in the NRC staff's response to that proposed contention, *infra*, Petitioners' underlying

argument amounts to a claim that the NRC should review the Application (including the ER), which the NRC already does pursuant to its regulations. Accordingly, the repetition of this argument in Proposed Contention 11 [NEPA-E] fails to meet the requirements of § 2.309(f).

*f. Power Supply and Assessment of Need for Power*

In the last two subsections of Proposed Contention 11 [NEPA-E], Petitioners indicate criticisms of Sections 8.3 and 8.4 of the ER. Petition at 61-63. With respect to Section 8.3, after noting that the section was unavailable because it was withheld as proprietary information, Petitioners make various assertions about expected "distributed generation" and "self-generation" trends and about associated "state and federal incentives"; they also state several broad questions that inquire about the possible content of the ER in this section. Petition at 61-62. First, the Petition's open-ended questions about the contents of the ER do not identify specific disputes with the Applicant – by their own terms, they simply speculate about what may or may not be analyzed in the Application. More fundamentally, however, the Petitioners do not identify any requirement to include the suggested discussions in the ER, and they provide no factual sources or references that explain either what "trends" or "incentives" are at issue or why they would be relevant to TVA's analysis. Therefore, even had the Petitioners identified a material dispute with the Application, they have provided no factual information to support their concern.

Similarly, with respect to ER Section 8.4, after noting that certain figures and charts were unavailable because they were withheld as proprietary information, Petitioners reiterate assertions made earlier in the contention concerning Sections 8.2 and 8.3, namely that "TVA has not justified the need for additional generating capacity" and that the ER fails to account for "energy efficiency and demand side management[.]" Petition at 62-63. Petitioners summarize their earlier arguments concerning the Applicant's alleged failure to properly consider "distributed and self-generation by customers", "dramatic improvements in electricity use … due

to energy efficiency codes", and the "effects of a prolonged recession on demand for electricity within TVA's service area." However, for the same reasons explained *supra* in response to this contention, Petitioners have failed to state a factual basis for each of these arguments and lack the references to supporting sources and documents required by § 2.309(f)(1)(v).

For all the reasons stated above, the Petitioners have failed to provide concise statements of the alleged facts supporting their position on each of the issues raised in Proposed Contention 11 [NEPA-E], together with references to the specific sources and documents on which they would rely to support those positions. Accordingly, Proposed Contention 11 [NEPA-E] fails to meet the requirements of § 2.309(f)(1)(v) and thus is not admissible.

2. The Petitioners fail in Proposed Contention 11 [NEPA-E] to demonstrate a genuine and material dispute with the Application's analysis of the need for power.

In large part because of the absence of factual support for key assertions discussed above, the Petition fails to demonstrate that Proposed Contention 11 [NEPA-E]'s challenges to the ER's need for power analysis constitute a material dispute with the Application. Moreover, even in the isolated instances where Petitioners arguably identify a general source or document to support their position, they fail to explain how their assertions demonstrate a material dispute with the Application.

*a. Power and Energy Requirements*

In criticizing the ER's analysis of power and energy requirements, Petitioners argue that TVA has not addressed scenarios for certain economic conditions, including GRP growth of less than 2.7%; recession conditions; oil and coal price increases; or high inflation. Petition at 49. As noted above, the Petition has not provided factual support for its claims and statistics; however, even had it done so, the Petitioners have failed to explain why the factors it has identified are reasonable scenarios that should be addressed in the ER, nor have they

explained how any of the present short-term trends they identify would dispute the adequacy of the assumptions TVA has employed in developing its long-term forecasts.

*b. Forecasts of Energy, Capacity, and Load Factors*

Petitioners also criticize TVA's forecasts of energy, capacity, and load factors. Petitioners argue that "[i]nstead of using demand response strategies to improve its system load factor, TVA wants to solve its load factor using baseload capacity. The residential peaks are best addressed through energy efficiency and demand response strategies, all of which have been ignored by TVA in these projections." Petition at 51. However, the Petitioners fail to identify any specific inadequacy in the Applicant's analyses in ER Section 8.2.2.2, "Energy Efficiency and Substitution," as well as Section 8.2.2.3, "Price and Rate Structures," which do discuss energy efficiency and load management programs, including those relating to residential power use. *See, e.g.*, ER at 8.2.-10 to -11. Demand side management programs are also discussed in ER Section 9.2.1.3. In short, the ER, in these sections, shows that TVA has not ignored these matters. Despite their claim that these issues have been "ignored by TVA," Petitioners identify no dispute with the Applicant's analysis in any of these sections.

*c. Factors Affecting Growth of Demand*

Petitioners also challenge the ER's discussion of certain factors affecting growth of demand. As noted above, the Petition challenges TVA's GRP projections by reference to an unspecified Energy Information Administration document. Petition at 52. However, Petitioners in any event fail to provide any explanation of why the identified difference between TVA and the EIA's long-term GDP projections is significant in a way that would make the Application's projections unreasonable or demonstrate that its associated analysis is inadequate.

Similarly, the Petition criticizes the Application's projections related to migration to the region and to forecasts of personal income growth. Petition at 53-54. In addition to lacking specific source or document references as described previously, the Petition fails to explain why

any of the cited statements contradict any particular aspect of the ER's analysis relating to migration's effects on regional economic growth or relating to personal income (including TVA's statement cited on page 53 of the Petition), much less TVA's conclusions regarding the impact on the need for new generating capacity.

*d. Energy Efficiency and Substitution*

As described above, with respect to the Application's discussion of energy efficiency and substitution, the Petition largely excerpts language from NRC guidance in NUREG-1555 (or draft Revision 1 of that document) to establish inadequacies in the ER, without presenting any independent explanation of why the Petitioners believe the Application is materially inadequate. Petition at 55-58. Because provisions in NRC guidance documents are not requirements, Petitioners do not clearly explain why the alleged absence of these discussions from the ER is contrary to any applicable requirement or why the supposed omissions make the Applicant's analysis or conclusions materially inadequate. Accordingly, having provided no factual support beyond bare quotations from NRC staff guidance, the Petition does not identify a genuine dispute with the Application on a material issue of law or fact, and thus fails to satisfy the requirements of § 2.309(f)(1)(vi).

*e. Price and Rate Structures*

The Petition challenges TVA's discussion of price and rate structures, claiming that TVA "has not adequately forecast the growth in the real price of electricity." Petition at 58. The Petition cites several TVA statements with which it apparently disagrees, see Petition at 58, 59, particularly with respect to demand side management. However, as noted above, the Petitioners fail to identify any specific inadequacy in the Applicant's analyses in ER 8.2.2.3, "Price and Rate Structures," and ER Section 9.2.1.3, "Demand Side Management," both of which do discuss demand side management considerations. *See, e.g.*, ER at 8.2.-10 to -11, ER Section 9.2.1.3. Petitioners' limited citations from the ER identify no substantive dispute with

the Applicant's overall analysis in any of these sections. Likewise, the Petition's two recitations of NRC guidance from NUREG-1555 (or draft Revision 1 of that document) do not include any independent explanation of why the Petitioners believe the Application is materially inadequate or omits a required analysis. Petition at 58, 59.

*f. Power Supply and Assessment of Need for Power*

In the last two subsections of Proposed Contention 11 [NEPA-E], Petitioners criticize Sections 8.3 and 8.4 of the ER. Petition at 61-63. As explained above, the Petition's unsupported assertions and open-ended questions concerning the content of these sections – notwithstanding the unavailability of some withheld proprietary content – do not demonstrate that any required analysis is even potentially missing from the ER. Even overlooking the absence of factual support for the Petition's comments, the Petition's discussion of ER Section 8.3 does not identify why any of the vague concerns it raises regarding future energy generation "trends" or "state and federal" incentives would reveal material inadequacies in the Application. Similarly, the Petition's challenges to Section 8.4 simply repeat its earlier unsupported challenges to ER Sections 8.2 and 8.3 and again specify no concrete omissions from, or material inadequacies in, the Applicant's analysis.

Consequently, without having provided any references to documents or other sources on which Petitioners intend to rely to demonstrate that the ER's assumptions and bases supporting its need for power analysis are in error, and without having clearly disputed the ER's argument that new baseload generation is needed, the Petition's challenges regarding the analysis of need for power do not identify a genuine dispute with the Application.

For the reasons stated above, Proposed Contention 11 [NEPA-E] fails to meet the requirements of 2.309(f)(1)(v) and (vi), and thus it is not admissible.

L. PROPOSED CONTENTION TWELVE [NEPA-F]: NRC Failed to Justify Need for New Units. (Petition at 63).

BASIS:

> In view of the foregoing contention regarding TVA's failure to justify its COL request, it is left to NRC to provide justification for the proposed units at Bellefonte. […] As no other entity with the TN Valley or within the federal government has the responsibility to review and determine the adequacy of TVA's power and energy requirement forecasts, it clearly becomes the responsibility of the NRC to review the adequacy of TVA's claims that the proposed Bellefonte units are needed.

*Id.* at 63, 65. In Proposed Contention 12 [NEPA-F], the Petitioners assert that TVA has not justified its COL request and that therefore "it is left to NRC to provide justification for the proposed units at Bellefonte." *Id.* at 63. The contention states that TVA "operates as an unregulated monopoly…responsible to no other entity for its policies, programs, forecasts for power and energy requirements, and ratemaking." *Id.* at 63. The Petition then proceeds to discuss the corporate structure and existing Congressional oversight of TVA, and argues that "the consequences of no outside entity checking on TVA's projections are severe." *Id.* at 63-64. The contention criticizes, for example, the lack of public involvement "in the TVA wholesale rate process" and in the TVA Board's decision to submit a COL application to the NRC, as well as the absence of control by residents over TVA policies and programs "except through the President and Congress." *Id.* at 64.

The Petitioners criticize TVA's past energy-development decisions, including with respect to nuclear plant construction, and the associated cost to ratepayers. *Id.* at 64-65. They further state, without citation, that TVA's 2007 sales have declined and that TVA's "projected 1.9% annual increase is already slipping severely behind its forecast." *Id.* at 65. The Petition states that "TVA has a peak load problem that could be addressed through demand side management. The purpose for the BLN COL application is fix [sic] a declining load factor, a purpose that the NRC itself states cannot justify construction of a nuclear plant." *Id.* at 65. The

Petitioners conclude that "[a]s no other entity with [sic] the TN Valley or within the federal government has the responsibility to review and determine the adequacy of TVA's power and energy requirement forecasts, it clearly becomes the responsibility of the NRC to review the adequacy of TVA's claims that the proposed Bellefonte units are needed." *Id.* at 65.

*Staff Response*: The NRC staff opposes the admission of Proposed Contention 12 [NEPA-F]. As explained below, the contention fails to demonstrate that the issues raised are within the scope of the proceeding, fails to demonstrate that the issue is material to findings that NRC must make, provides no facts that support the Petitioners' position, and identifies no dispute with the Applicant on a material issue. Consequently, it fails to meet the requirements of § 2.309(f).

1. Petitioners' Proposed Contention 12 [NEPA-F] raises issues outside NRC's jurisdiction and does not identify a material dispute with the Application.

Proposed Contention 12 [NEPA-F] reflects the Petitioners' apparent misunderstanding both of NRC's jurisdiction and of its licensing review process. While the Petition discusses the corporate structure and existing Congressional oversight of TVA, as well as the extent of public control over or involvement in TVA decisionmaking, the Petitioners fail to explain why these considerations reveal any dispute with the Applicant's financial analysis or demand projections. Similarly, the Petition does not explain how TVA's internal governance and the legislative structure authorizing it are issues relevant to the findings NRC must make on the Application. To the extent the contention seeks to challenge TVA's charter or governing legislation or to advocate NRC authority over TVA's internal decisionmaking not provided by law, the Petition fails to show that such claims are within the scope of the proceeding. Attacks on applicable statutory requirements are not an appropriate basis for a contention. *See Seabrook*, LBP-82-76, 16 NRC at 1035, *citing Peach Bottom*, ALAB-216, 8 AEC at 20-21.

Similarly, a contention is not admissible if it is constitutes nothing more than a generalization regarding the petitioner's view of what applicable policies ought to be. See *Peach Bottom, supra,* 8 AEC at 20-21. The Petitioners' apparent interest in increased Congressional or state oversight over TVA, for greater public involvement in TVA ratemaking activities and TVA Board decisionmaking, or for NRC control over those TVA activities, are not matters subject to redress in an NRC proceeding.

Accordingly, the Petitioners have not shown why these concerns are within the scope of the present proceeding or material to the findings NRC must make. Moreover, the Petition does not present references to any specific sources or documents on which it would rely to support those claims, or to any specific portion of the Application that it disputes other than the general disagreement concerning whether the proposed Units 3 and 4 are needed. The contention therefore fails to meet the requirements of § 2.309(f)(1)(iii), (iv), (v), and (vi).

The Petitioners also make representations concerning TVA's debt and sales figures, *see* Petition at 64-65, but do not refer to any supporting sources or documents, contrary to § 2.309(f)(1)(v). The contention argues that TVA's "peak load problem…could be addressed through demand side management" but fails to identify any specific dispute with the Application's discussion of demand side management. Petition at 65; *see* ER Sections 9.1, 9.2.1.3. Similarly, the Petition argues that "[t]he purpose for the BLN COL application is fix [sic] a declining load factor, a purpose that the NRC itself states cannot justify construction of a nuclear plant," Petition at 65, but it does not explain on what portion of the Application or on what NRC statement this argument relies. Consequently, these bases also fail to meet the requirements of § 2.309(f)(1)(v) and (vi).

2. Petitioners' Proposed Contention 12 [NEPA-F] misconstrues the NRC's licensing process and the NRC staff's review of the Application.

Petitioners have titled this contention as "NRC Failed to Justify Need for New Units." Petition at 63. To the extent Proposed Contention 12 [NEPA-F] seeks to challenge the NRC staff's review, it fails by its own terms to raise a dispute with the Application. In addition, Proposed Contention 12 [NEPA-F] suggests that the NRC has the responsibility to "provide justification for the proposed units at Bellefonte" if TVA has not done so. Petition at 65. As set forth below, the NRC has no such responsibility.

Petitioners' underlying argument amounts to a claim that the NRC should review the Application (including the ER), which the NRC already does pursuant to its regulations. The NRC's regulatory authority does give it the responsibility to review TVA's license application, notwithstanding TVA's status as a federal governmental entity. *See* 42 U.S.C.A. § 2020 (2008) (§ 273 of the Atomic Energy Act); *Tenn. Valley Auth.* (Phipps Bend Nuclear Plant), ALAB-506, 8 NRC 533, 545-47 (1978) (the Commission must independently evaluate the environmental consequences of a proposed TVA facility and determine whether NEPA has been satisfied).

The NRC regulations reflect that its responsibility under NEPA to review the Application includes review with respect to the benefits and costs of the proposed action and its alternatives. *See, e.g.,* 10 C.F.R. §§ 51.70, 51.71(d), 51.91. Like any other COL applicant, TVA is required to include certain information in its Application, including a discussion of the need for power. *See, e.g.,* 10 C.F.R. §§ 51.45(c), § 51.50(c). Consequently, as with any COL application, as part of its NEPA-mandated review process and eventual determination on whether to recommend issuance of the license, the NRC staff will review the Applicant's need

for power analysis.[20] *See* NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants," ch. 8 (2000). NRC staff guidance explains that the review of the ER involves "ensuring that the [ER's] need for power analysis is reasonable and meets high quality standards." *See* NUREG-1555 at 8.4-1.

In short, Proposed Contention 12 [NEPA-F] does not explain in what way the NRC review does not already encompass reviewing the "adequacy of TVA's claims that the proposed Bellefonte units are needed." Petition at 65. Petitioners, therefore, have not provided a factual basis for this contention or why this contention constitutes a genuine dispute with the Application, contrary to § 2.309(f)(1)(v) and (vi).

For the reasons stated above, Proposed Contention 12 [NEPA-F] fails to meet the requirements of § 2.309(f)(1)(iii), (iv), (v), and (vi), and thus is not admissible.

M. PROPOSED CONTENTION THIRTEEN [MISC-F]: So-Called Low Level Radioactive Waste. (Petition at 65).

BASIS:

> As of June 30, 2008, no facility in the United States will be licensed and able to accept for disposal, Class B, C or Greater-Than-C radioactive waste from the Bellefonte nuclear and power reactors. The applicant fails to offer a viable plan for how to dispose of Class B, C and Greater-than-C so-called "low-level" radioactive waste generated in the course of operations, closure and post closure of Bellefonte 3 & 4. … [Petition at 65.]
>
> The applicant, TVA, fails to address how NRC regulations for the disposal of so-called "low-level" radioactive waste will be met in the absence of an offsite disposal facility (dump). . . . If perpetual or extended on-site storage of these wastes is contemplated, this option is not addressed in the COL application. [Petition at 66.]

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[20] The NRC does not promote any particular form of energy generation, including nuclear. Rather, the NRC examines the need for power as part of its responsibilities under NEPA to evaluate environmental impacts of proposed actions.

> [W]e believe extended waste storage facilities at Bellefonte must be regulated under 10 CFR § 61. [Petition at 69.]

Petitioners indicate that the proposed contention is directed toward "safety and security" and "potential environmental impact." *Id*. at 67. In essence, the proposed contention asserts that the Commission should not have confidence that the identified low-level wastes can be disposed since "there is not currently a site licensed to take the full range of wastes that Bellefonte 3 & 4 will generate[.]" *Id*. at 68. Whether considered as an environmental contention or a safety contention, the NRC staff opposes admission of Proposed Contention 13 [MISC-F], as set forth below.

*Staff Response*: Proposed Contention 13 [MISC-F] is inadmissible for the following three reasons, all of which are further discussed below. First, Proposed Contention 13 [MISC-F], as it relates to environmental matters, is an impermissible attack on the Commission regulations (namely, Table S-3 of 10 C.F.R. § 51.51), and Petitioners have not requested a waiver or exception to permit them to raise the contention in this proceeding. Second, insofar as Proposed Contention 13 [MISC-F] relates to safety and security matters, it is inadmissible because it contains two errors of law, namely: it mistakenly presumes that the Application must demonstrate how the Applicant will dispose of low-level radioactive waste (Petition at 65); and, it mistakenly presumes that the Applicant, in the asserted absence of an offsite disposal option, must obtain a license pursuant to 10 C.F.R. Part 61 to store or dispose of the waste on the site of proposed Units 3 and 4 (*id.* at 67, 69.). Third, whether the proposed contention is considered as a safety contention or an environmental contention, Petitioners fail to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(iv) and (v). Specifically, Petitioners fail to demonstrate that Proposed Contention 13 [MISC-F] is material to this proceeding, nor do they provide any expert opinion or references to specific sources and documents on which they intend to rely to support their position.

1. Proposed Contention 13 [MISC-F] is an unauthorized attack on the Commission's regulations.

The Commission's regulations prohibit an attack on generic NRC requirements in an adjudication. 10 C.F.R. § 2.335(a); *Oconee*, CLI-99-11, 49 NRC at 334. The Commission's determination of the environmental effects of low-level waste disposal documented in Table S-3 – i.e., that the amount of low-level radioactive waste identified in Table S-3 will result in "no significant effluent to the environment" – is predicated on shallow land burial of those wastes. 10 C.F.R. § 51.51(b), Table S-3. Since Proposed Contention 13 [MISC-F] asserts that land burial of such waste is not now possible, it constitutes an attack on Table S-3. Accordingly, Proposed Contention 13 [MISC-F] is barred from admission in the proceeding by the provisions of 10 C.F.R. § 2.335(a).

The only circumstance in which a contention challenging a Commission regulation may be admitted in an adjudication is where the application of the rule would not serve the purposes for which it was adopted with respect to the subject matter of the particular proceeding. 10 C.F.R. § 2.335(b). In such a proceeding, a petitioner must request a waiver or exception to § 2.335(a) and provide an affidavit describing the special circumstances justifying the request. *Id*. In this proceeding, the Petition is devoid of the required request for a waiver or exception to the provisions of § 2.335(a) with respect to Proposed Contention 13 [MISC-F], and Petitioners did not provide the requisite affidavit. Accordingly, Proposed Contention 13 [MISC-F] cannot be admitted pursuant to a waiver or exception under § 2.335(b).

2. Petitioners mistakenly presume that the Application must demonstrate how the disposal of low-level radioactive waste will meet NRC regulations and that Applicants must obtain a Part 61 waste disposal license.

The standards for the contents of COL applications do not require a COL applicant to describe how it plans to dispose of waste of any kind. *See* 10 C.F.R. §§ 52.79, 52.80. In its bases for Proposed Contention 13 [MISC-F], Petitioners point to no other NRC requirement for

such a description and mistakenly presume that the Application must contain one. Petition at 65. This mistaken presumption cannot form part of an acceptable basis for Proposed Contention 13 [MISC-F] in accordance with 10 C.F.R. § 2.309(f)(1)(iii).

Similarly, Petitioners mistakenly suggest that the Application may need to contain a request for a license issued pursuant to 10 C.F.R. Part 61. Petition at 67. The Applicant, however, has requested a license under 10 C.F.R. Part 30, which would authorize it to possess and store the low-level radioactive waste that is the subject of Proposed Contention 13 [MISC-F] if the Application is ultimately granted. Application, Part 1, at 1.1-4. The material would be stored in accordance with the requirements of 10 C.F.R. Part 20. *See, e.g.,* 10 C.F.R. §§ 20.1801, 1802. Accordingly, Petitioners' mistaken suggestion that the Applicant may need to obtain a Part 61 license cannot form part of an acceptable basis for Proposed Contention 13 [MISC-F] in accordance with 10 C.F.R. § 2.309(f)(1)(iii).

3. Petitioners fail to satisfy § 2.309(f)(1)(iv) and (v) with respect to Proposed Contention 13 [MISC-F].

Section 2.309 requires Petitioners to demonstrate that their proposed contentions are material to the findings the NRC must make in this proceeding. *See* 10 C.F.R. § 2.309(f)(1)(iv). Petitioners do not even identify any applicable COL requirement pertaining to the storage and disposal of low-level radioactive waste, much less how such a requirement might be material to the findings the NRC must make regarding the Application. While the Petition refers to the requirements in 10 C.F.R. Part 61, Part 61 is not material to the NRC's determination in this proceeding because the Application does not propose on-site disposal of radioactive waste.[21]

[21] Petitioners claim that "[o]n-site disposal of low-level radioactive waste at Bellefonte 3 and 4 is an unresolved problem which may be outside the letter and the spirit of the relevant laws and implementing regulations" and imply that the Applicant is attempting to "re-interpret the meaning of this regulation." Petition at 68. The Petition then states that "we are aware of no exemption granted by the Commission from the relevant regulation. … we believe extended waste storage facilities at Bellefonte (continued. . .)

Accordingly, the Petition fails to satisfy § 2.309(f)(1)(iv) with respect to Proposed Contention 13 [MISC-F], and it is inadmissible.

Section 2.309 requires Petitioners to provide a concise statement of asserted facts or expert opinion on which they intend to rely at hearing, together with references to the specific sources and documents on which they intend to rely to support their position. *See* 10 C.F.R. § 2.309(f)(1)(v). While the Petition does assert certain facts (*e.g.,* regarding the asserted imminent lack of a low-level radioactive waste disposal site, *see* Petition at 65), it contains only one reference to documentary material, an unspecified "GAO report" (*id*. at 67, n.22). The Petition offers this reference only to assert the dose that might result from exposure to unshielded waste that is the subject of Proposed Contention 13 [MISC-F]. *Id.* Similarly, the Petition does not offer any expert opinion in any form to support Proposed Contention 13 [MISC-F]. Since the Petition omits expert opinion and references to specific sources and documents to support its proposed contention, it fails to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(v).

While the Petition in Proposed Contention 13 [MISC-F] disputes the Application in its assertion that the Application omits discussion of "perpetual or extended on-site storage" of Class B, Class C, and Greater than Class C wastes (*see* Petition at 66), in order to satisfy § 2.309(f)(1)(iv), such a dispute must also be material to the findings that the Commission must make. Petitioners must meet all the requirements of § 2.309, and they do not. Accordingly,

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(. . .continued)

must be regulated under 10 CFR § 61 [sic]." *Id.* at 68-69. It is unclear from these statements which law or specific regulation the Petitioners suggest is being re-interpreted or from which an exemption would be granted. However, as noted above, the Application does not propose on-site disposal of low-level waste within the meaning of 10 C.F.R. Part 61, so the Petition's references to the provisions within Part 61 are simply not applicable in this proceeding.

Proposed Contention 13 [MISC-F] does not meet the Commission's standards for admission into this proceeding.

N. PROPOSED CONTENTION FOURTEEN [NEPA-L]: Waste Confidence – High Level Nuclear Waste from Irradiated Fuel. (Petition at 69).

BASIS:

> The Environmental Report for the TVA COLA is deficient because it fails to discuss the environmental implications of the lack of options for permanent disposal of the irradiated (i.e., "spent") fuel that will be generated by the proposed reactors if built and operated. . . . The ER for the proposed new reactors does not contain any discussion of the environmental implications of the lack of options for permanent disposal of the irradiated fuel to be generated by North Anna [sic] site. Therefore, it is fatally deficient. [Petition at 69.]
>
> Even if the Waste Confidence Decision applies to this proceeding, it should be reconsidered, in light of significant and pertinent unexpected events that raise substantial doubt about its continuing validity, *i.e*., the increased threat of terrorist attacks against U.S. facilities. [Petition at 75-76.]

Petitioners indicate that the proposed contention is directed towards the environmental impacts of the proposed new reactors. *Id*. Petitioners argue that the Waste Confidence decision applies only to plants which are currently operating, not new plants. *Id.* at 71. Petitioners further assert that the Commission has given no indication that it has confidence that repository space will be available for high level radioactive waste from new reactors licensed after December 1999. *Id.* at 71. Petitioners also claim that the Commission no longer has confidence in the likelihood that more than one repository will be licensed. *Id.* at 71. Petitioners argue further that the capacity of the proposed repository at Yucca Mountain, Nevada (63,000 metric tons of high-level waste and irradiated nuclear fuel) is too small to accommodate even the waste generated by currently operating reactors and cannot accommodate the waste that would be generated at new reactors. *Id*. at 72-74. Petitioners state that spent fuel may sit at

the proposed reactor site for an indefinite period of time. *Id.* at 75. Finally, Petitioners restate Proposed Contention 14 [NEPA-L] as follows: "The environmental impacts of . . . indefinite [spent fuel] storage must be evaluated before a Combined Operating License can be granted." *Id*. at 75.

*Staff Response*: The NRC staff opposes admission of Proposed Contention 14 [NEPA-L] as an impermissible attack on the Commission's regulations. *See* 10 C.F.R. § 2.335; *Vermont Yankee* and *Pilgrim*, CLI-07-3, 65 NRC at 17-18 and n.15; *Millstone*, CLI-01-24, 54 NRC at 364; *see also Dominion Nuclear North Anna, LLC* (Early Site Permit [ESP] for the North Anna ESP site), LBP-04-18, 60 NRC 253, 268-70 (2004) (holding inadmissible an essentially identical set of contentions in the North Anna ESP proceeding, as impermissibly challenging the NRC's regulations). As explained by the Board in the North Anna ESP proceeding, "[t]he matters the Petitioners seek to raise have been generically addressed by the Commission through the Waste Confidence Rule, the plain language of which states:

> [T]he Commission believes there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century, and sufficient repository capacity will be available within 30 years beyond the licensed life for operation of *any* reactor to dispose of the commercial high-level waste and spent fuel originating in such reactor and generated up to that time.

10 C.F.R. § 51.23(a) (emphasis added). Furthermore, when the Commission amended this rule in 1990, it clearly contemplated and intended to include waste produced by a new generation of reactors." *North Anna ESP Site*, LBP-04-18, 60 NRC at 269 (also *citing* 55 Fed. Reg. 38,474, 38,504 (Sept. 18, 1990) ("The availability of a second repository would permit spent fuel to be shipped offsite well within 30 years after expiration of [the current fleet of] reactors' [operating

licenses]. The same would be true of the spent fuel discharged from any new generation of reactor designs."); *see also id.* at 38,501-04.).[22] Accordingly, Proposed Contention 14 [NEPA-L] impermissibly attacks the Commission's regulations and is inadmissible.[23] *See North Anna ESP Site*, LBP-04-18, 60 NRC at 269.

Furthermore, with respect to the Petitioners' request for reconsideration of the Waste Confidence Rule, that request also is not within the scope of this proceeding and is an impermissible attack on the Commission's regulations. *See* 10 C.F.R. § 2.335; *Vermont Yankee* and *Pilgrim*, CLI-07-3, 65 NRC at 17-18 and n.15; *Millstone*, CLI-01-24, 54 NRC at 364; *North Anna ESP Site*, LBP-04-18, 60 NRC at 269. The Commission's rules provide as follows:

> [W]ithin the scope of the generic determination in [§ 51.23(a)], no discussion of any environmental impact of spent fuel storage in reactor facility storage pools or independent spent fuel storage

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[22] Although the Petitioners cite *Minnesota v. NRC*, 602 F.2d 412, 416-17 (D.C. Cir. 1979), to support their argument that TVA's ER is "fatally deficient" for failing to address ultimate disposal of spent reactor fuel, Petition at 69, the reference is inapposite. In *Minnesota v. NRC*, the Court of Appeals for the D.C. Circuit remanded to the Commission the issue of ultimate disposal of spent fuel in a case involving two license amendments. *Minnesota,* 602 F.2d at 419. The D.C. Circuit, however, did not reverse the agency's determination that the amendments should be issued. *Id.* at 418. Rather, the court held that the petitioners were not entitled to an adjudicatory proceeding on issues related to the disposal of spent fuel and that the NRC "could properly consider the complex issue of nuclear waste disposal in a 'generic' proceeding such as a rulemaking, and then apply its determinations in subsequent adjudicatory proceedings." *Id.* at 416. Since the NRC has engaged in the rulemaking envisioned by the D.C. Circuit in the *Minnesota* decision, the reference to the case by the Petitioners is misplaced. In fact, the case envisions that the NRC would apply 10 C.F.R. § 51.23(a) in future proceedings such as the instant adjudicatory proceeding.

[23] In Proposed Contention 14 [NEPA-L], the Petitioners also cite a statement in the ER and conclude that it is "false" because it asserts that "no release to the environment is expected to be associated with" disposal of high-level and transuranic wastes at a repository. *See* Petition at 70-71, citing ER at Section 5.7.6. To explain this claim, Petitioners refer to the U.S. Environmental Protection Agency's proposed Yucca Mountain radiation protection standards. Petition at 70. However, the Petition fails to note that the Application discusses those same EPA standards in the paragraphs following the cited statement and concludes that impacts under the EPA's standards do not change the Applicant's determination that uranium fuel cycle impacts from waste disposal associated with the proposed Bellefonte facility would be small. ER at 5.7-7, 5.7-8. In light of that discussion, the Petition fails to explain why its characterization of the cited statement represents a material dispute of law or fact, and thus fails to meet the requirements of § 2.309(f)(1)(vi).

> installations (ISFSI) for the period following the term of the . . . reactor combined license . . . for which application is made, is required in any environmental report [or] environmental impact statement. . . prepared in connection with the issuance . . . of a combined license for a nuclear power reactor under [part 52].

10 C.F.R. § 51.23(b). Since no discussion of this matter is required in this proceeding pursuant to § 51.23(b), this aspect of Contention 14 is not within the scope of this proceeding, and Petitioners fail to satisfy the contention standards of § 2.309(f)(1)(iii).

The Commission has provided litigants in an adjudicatory proceeding subject to 10 C.F.R. Part 2 the opportunity to request that a Commission rule or regulation "be waived or an exception made for the particular proceeding." 10 C.F.R. § 2.335(b). The Commission has specified that "[t]he sole ground for petition of waiver or exception is that special circumstances with respect to the subject matter of the particular proceeding are such that the application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted." *Id.* The Commission requires that any request for such waiver or exception "be accompanied by an affidavit that identifies . . . the subject matter of the proceeding as to which application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted." *Id.* Additionally, "[t]he affidavit must state with particularity the special circumstances alleged to justify the waiver or exception requested." *Id.*

The Petitioners have failed to establish that they meet any of the requirements imposed by the Commission on litigants wishing that a rule be waived or an exception be granted. *See* Petition at 75-78. They have failed to establish that application of the Waste Confidence Rule in this particular proceeding would not serve the purpose for which the rule was adopted. To the contrary, 10 C.F.R. § 51.23 reflects, on its face, that the rule was designed to dispense with the need for NRC adjudications to address the impacts associated with the ultimate disposal of spent fuel and high-level waste.

In view of the foregoing, the contention and its supporting bases raise a matter that is not within the scope of the proceeding and impermissibly seek to challenge a Commission regulatory requirement. *See* 10 C.F.R. §§ 2.309(f)(1)(iii), 2.335; *Vermont Yankee* and *Pilgrim*, CLI-07-3, 65 NRC at 17-18 and n.15; *Millstone*, CLI-01-24, 54 NRC at 364. Absent a showing of "special circumstances" under 10 C.F.R. § 2.335(b), which the Petitioners have not made, this matter must be addressed through Commission rulemaking. *See North Anna ESP Site*, LBP-04-18, 60 NRC at 269-270.

O. PROPOSED CONTENTION FIFTEEN [FSAR-C]: Global Warming Impacts Are Omitted from TVA License Application – Severe Weather and Carbon Footprint. (Petition at 78).

As this contention is presented in two parts that raise different issues, the NRC Staff discusses them separately.[24]

> Contention Part A
>
> BASIS:
>
> A. Severe Weather Impacts Resulting from Global Warming [footnote: "A basis for raising this contention is found in *The US Economic Impacts of Climate Change and the Costs of Inaction, A Review and Assessment* by the Center for Integrative Environmental Research (CIER) at the University of Maryland, October 2007 [Available on-line at: http://www.cier.umd.edu/documents/US%20Economic%20Impacts%20of%20Climate%20Change%20and%20the%20Costs%20of%20Inaction.pdf]"] [Petition at 79.]
>
> […]

[24] Although the Petitioners have designated this contention as a challenge to safety issues in the FSAR (*see* Petition Supplement at 5), the NRC staff considers the second part of the contention to be clearly NEPA-related, as it alleges that "TVA failed to analyze the carbon footprint of the construction and operation of Bellefonte 3 and 4 in its environment [sic] report." Petition at 81. The NRC staff has responded accordingly to that portion of the contention. *See infra*, Section III.O, Contention Part B.

The risks to nuclear power plants associated with severe weather are not only direct damage to the site and reduced operation and therefore capacity – the risks also originate from the impact of severe weather on the transmission grid and the overall probability of loss of offsite power, and the subsequent duration of such loss. These risks form the base of the calculated risk of station blackout – the primary source of risk of a major reactor accident and have not been addressed by the applicant. [footnote: "U.S. Nuclear Regulatory Commission, "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants," NUREG-1150, 1990"]

The applicant references the Design Control Document for the AP1000 and adopts the contents of chapters where modeling is applied to severe weather impacts such as high winds and water levels. Pages 19.58-1 – 19.58-3 of the Design Control Document for the AP1000 focus on severe weather impacts. The presentation of raw meteorological data is useful, but does not provide commentary on trends or future projections. Reliance on the DCD in the sections discussing structures, components and systems are devoid of any discussion of the acceleration in severe weather impacts.

The increasing frequency and impact of severe weather-related events is well documented in government agency reports:

> "Since 1980, the United States has witnessed 70 natural disasters – including hurricanes, floods, heat waves, and droughts – each causing over $1 billion in damages. Fifty-eight of these events have occurred since 1990 and 29 have been in the Southeast. Total estimated damages from all of the billion-dollar events are more than $540 billion." [footnote: "Lott, N. and T. Ross. 2006. *Tracking and Evaluating U.S. Billion Dollar Weather Disasters, 1980-2005.* National Climatic Data Center (NCDC) Available online at http://www1.ncdc.noaa.gov/pub/data/papers/200686ams1.2nlfree.pdf"]
>
> "Hurricanes and tropical storms are by far the most frequent and destructive of the natural disasters documented by the National Climatic Data Center at NOAA. Other disasters include non-tropical floods, heatwaves and drought, severe weather, fires, freezes, blizzards, ice storms and nor'easters, accounting for 24 of the 70 events and $308 billion in damages. The Southeast states were hit hardest by these natural disasters, with each state, except Kentucky, experiencing at least 16 events that caused over $1 billion in damages each. Texas, Alabama, Georgia, Florida, and North Carolina each experienced 21-25 natural disasters from 1980-2006. [footnote: "U.S. Nuclear Regulatory Commission, "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants," NUREG-1150, 1990"] (emphasis added)

It is laudable that the Probabilistic Risk Assessment analysis recognizes that loss of off-site power should be considered in

> analysis of severe weather, and further that a worst-case-scenario is analyzed. What is not provided is any analysis that describes the basis for judging the probability of either frequency or intensity of a weather event such that it is possible to assess what data-set is being used. Since other areas of the PRA do give citations, and most of these are from work done in the 1980's it is possible that new models based on a changing and destabilized climate have not been incorporated into the findings of the PRA. This could lead to a false sense of security since Bellefonte 3 & 4 will not even come on-line for another decade, and would operate well into the 21st century, during which time even "conservative" climate change models predict significant destabilization of weather patterns. A leading climatologist, Dr. Kerry Emanuel has found significant correlation between the warming of ocean waters and the intensity of storms. [footnote: "Dreifus, Claudia. "With Finding on Storms, Centrist Recasts Warming Debate." The New York Times, January 10, 2006 Posted at: http://www.nytimes.com/2006/01/10/science/10conv.html?_r=1&scp=2&sq=intensity+of+hurricanes&st=nyt&oref=slogin"]
>
> Conclusion TVA fails to update its probabilistic risk assessments to reflect an upsurge in severe weather in the Southeast region, including Alabama.

Petition at 79-81 (footnotes incorporated into text). The Petition also lists several sections of the Applicant's FSAR that, according to the Petitioners, "need to address the increase in severity of weather in the region of the proposed site[.]" Petition at 79-80.

*Staff Response*: The NRC staff opposes the admission of Part A of Proposed Contention 15 [FSAR-C] because, as explained below, the Petitioners fail to provide sufficient information to explain the supporting reasons for their dispute with the Application and fail to provide a concise statement of the facts that support their position. Accordingly, Part A of the contention fails to meet the requirements of § 2.309(f)(1)(v) and (vi), and thus it is not admissible.

1. Petitioners fail in Part A of Proposed Contention 15 [FSAR-C] to present the reasons supporting their concerns with the Application.

The Petition identifies several sections of the Applicant's FSAR that, according to the Petitioners, "need to address the increase in severity of weather in the region of the proposed site[.]" Petition at 79. The Petitioners argue that the "increasing frequency and impact of

severe weather-related events is well documented in government agency reports[.]" *Id.* at 80. To support this claim, the Petition quotes two sources that mention a number of "natural disasters" since 1980, including several "in the Southeast," and mentions figures for the economic damages such events have caused. Petition at 80.

However, the Petition fails to explain how the cited statements are directly relevant to any weather-related characteristics with safety significance for nuclear facilities in general, much less at Bellefonte in particular. More specifically, the Petition does not explain how the number of events cited, trends in the frequency of such events, or the dollar damages associated with them demonstrate that any of the severe-weather-related values for Bellefonte identified in the Application, such as wind speed, are inaccurate, much less inadequate. Relatedly, the Petition fails to make clear why the types of events it identifies have any present or future significance with respect to the adequacy of the associated AP1000 design or operating basis values. Similarly, the Petition does not explain how the cited statements provide support for the Petition's concern with "impacts on the transmission grid and the overall probability of loss of offsite power," or with "the calculated risk of station blackout." Petition at 79. Consequently, Petitioners' broad statements concerning natural disasters and severe weather in the Southeast fail to provide supporting reasons for the Petitioners' concern with any particular portion of the FSAR for Bellefonte.

Petitioners also mention a "significant correlation between the warming of ocean waters and the intensity of storms," referencing a newspaper interview with Dr. Kerry Emanuel. Petition at 81. However, Petitioners again omit any explanation of how the source supports a dispute

with the Application concerning any weather-related characteristics with safety significance for Bellefonte (or even nuclear facilities in general).[25]

Likewise, with respect to the Probabilistic Risk Assessment (PRA), the Petitioners appear to generally criticize the PRA analysis in the AP1000 DCD as referenced by the Applicant in the Application. Petition at 80, 81. Pursuant to 10 C.F.R. 52.79(d)(1), the plant-specific PRA information in the Application is required to use the PRA information that supported the design certification, and this information must be updated to account for site-specific design information and any design changes or departures.[26] *See also* FSAR at 19.59-1, 19.59-3 (discussing the PRA update performed prior to fuel load as well as the schedule for maintenance and upgrades of the PRA). Relatedly, a holder of a combined license is required to maintain and upgrade its PRA, which must cover certain initiating events and modes of operation; this PRA must be upgraded at specified intervals until the cessation of operations. *See* 10 C.F.R. § 50.71(h)(2). Consequently, the relevance of the Petition's suggestion that the PRA could "lead to a false sense of security" because Bellefonte "will not even come on-line for another decade," Petition at 81, is unclear in light of the PRA update that would occur no later than the scheduled date for initial loading of fuel, as well as the periodic upgrades that would be required pursuant to § 50.71 if a COL is issued.

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[25] The NRC staff also notes that the cited article focuses on trends involving hurricanes and identifies Dr. Emanuel as a hurricane specialist; the Petition does not provide information to support any specific dispute with any aspect of the Application concerning hurricane-related characteristics.

[26] As the Petition acknowledges, the Applicant has incorporated by reference the PRA analysis from the DCD. Petition at 80. The Applicant also has stated that Bellefonte's site-specific PRA is consistent with that of the DCD, an assertion that the Petition does not appear to challenge. *See* FSAR at 19.59-1.

Furthermore, Petitioners do not explain the supporting reasons for their concerns with the PRA analysis referenced by the Applicant, but just suggest that "it is possible that new models based on a changing and destabilized climate have not been incorporated into the findings of the PRA." Petition at 81. The Petition fails to specify what "new models" it believes should be incorporated, or why doing so is necessary or even preferable. Indeed, the contention states as "laudable" that the PRA analysis "recognizes that loss of off-site power should be considered in analysis of severe weather, and further that a worst-case-scenario is analyzed." Petition at 81. The Petition's argument that the potential omission of unspecified "new models" from the PRA "could lead to a false sense of security" references no supporting facts or documents, nor is there any support provided for the Petition's reference to "'conservative' climate change models [that] predict significant destabilization of weather patterns." Petition at 81. The Petition thus does not assert any specific supporting reasons for concluding that the PRA analysis in the DCD or the Application is inadequate.

In sum, Petitioners fail to explain the supporting reasons for their stated concerns with the Application. Consequently, this basis fails to meet the requirements of § 2.309(f)(1)(vi).

2. Petitioners fail in Part A of Proposed Contention 15 [FSAR-C] to provide a concise statement of the facts that support their position.

The Petition also does not explain how certain documents provide any factual support for its contention. Following the title of this portion of Proposed Contention 15 [FSAR-C], the Petitioners include a footnote stating only that "[a] basis for raising this contention is found in" the referenced document. Petition at 79 n.25. Attaching a document in support of a contention without any explanation of its significance does not provide an adequate basis for a contention. *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 23 (2007), *citing Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 204-05 (2003); *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-10, 47 NRC 288, 298-99 (1998). As noted above, the Petition also fails to explain its references

either to "new models" it believes should be incorporated into the PRA analysis, or to "climate change models" predicting "significant destabilization of weather patterns." Petition at 81. In short, Petitioners provide no facts or sources to support a claim regarding a safety concern specific either to the AP1000 design or the Bellefonte application.

Consequently, these bases fail to state the facts on which the Petition relies, along with references to specific sources and documents, and thus fail to meet the requirements of § 2.309(f)(1)(v).

For the reasons stated above, Part A of Proposed Contention 15 [FSAR-C] fails to meet the requirements of § 2.309(f) and is not admissible.

> Contention Part B
>
> BASIS:
>
> TVA failed to analyze the carbon footprint of the construction and operation of Bellefonte 3 and 4 in its environment report. [Petition at 81.] […]
>
> The COL Applicant fails to include an analysis of the emission of Greenhouse gases in the process of the production of raw materials and components, and the transportation of these materials and components and the construction processes required to build Bellefonte 3 & 4.
>
> A further analysis of greenhouse gas emissions, associated with each step in the uranium fuel chain is similarly lacking. The mining of uranium is accomplished using fossil fuels. The many transportation links in the 6 (mining, milling, conversion, enrichment, re-conversion, fuel fabrication) uranium processing steps prior to shipment to the Bellefonte site have not been analyzed for Greenhouse gas emissions and associated climate impacts. Today there are sometimes additional steps when down-blending and other feedstock sources are utilized in uranium fuel production. Each and every one of the 6 uranium processing steps requires power—and most are currently powered with fossil fuels. The back-end of the nuclear fuel chain also involves transportation and therefore combustion of fossil fuels in moving the so-called low-level waste and someday the high-level waste. Any plans for additional steps of storage or processing of these wastes will increase the associated transportation generated greenhouse gas emissions. In addition, the reprocessing of nuclear fuel generates

> large quantities of gaseous emissions, all of which need to be evaluated for whether they contribute to climate destabilization.
>
> Many nuclear energy advocates, including those in the Administration and Congress potentially supplying funding for Bellefonte 3 and 4, claim that nuclear power offers a solution to global warming. It is important that all public investment in climate crisis solutions rest on scientifically solid ground. Therefore, Intervenors believe that it is important to include the "carbon-footprint" of construction and operation and dealing with the wastes of Bellefonte 3 and 4 in the consideration of environmental impact. [footnote: An excellent resource for conducting such an analysis is the work of Phillip Smith and Willem Storm van Leeuwen, in their report entitled Nuclear Power -- Energy Balance, newly updated in 2008 and posted at: http://www.stormsmith.nl/. Their findings include the determination that a key limiting variable in the nuclear fuel cycle impacts on Greenhouse Gas emissions is the relative ease with which uranium is obtained – the harder the rock, the deeper the deposits, the greater the Greenhouse gas emissions.] [Petition at 82-83, footnote incorporated into text.]

The Petition refers to "Greenhouse gases" and claims that "[t]hese emissions from many sources in aggregate are contributing to the destabilization of climate on planet Earth." Petition at 82. The Petition lists several sections of the Applicant's ER where, according to the Petitioners, "[t]he relevant discussion would rightly be included[.]" Petition at 82. The Petitioners argue that the Applicant "fails to include any discussion of Green House Gas emissions or 'Carbon Foot-print' in its environmental report," Petition at 82, and conclude therefore that "the review of environmental impacts of Bellefonte 3 and 4 is not complete." Petition at 84.

*Staff Response*: The NRC staff opposes admission of Part B of Proposed Contention 15 [FSAR-C]. As explained below, the Petitioners fail to provide sufficient information to demonstrate a genuine factual dispute with the Application and to provide a concise statement of the facts that support their position. Accordingly, Part B of the contention fails to meet the requirements of § 2.309(f)(1)(v), and (vi), and thus it is not admissible.

1. Petitioners fail in Part B of Proposed Contention 15 [FSAR-C] to provide a concise statement of the facts that support their position.

The Petitioners identify no factual support or references for their generalized assertions concerning greenhouse gases "contributing to the destabilization of climate on planet Earth," or for their vague references to emissions from any of the steps in uranium fuel production. Petition at 82, 83. The Petitioners also fail to explain what they mean by "plans for additional steps of [sic] storage or processing of these wastes," Petition at 83, or what "reprocessing of nuclear fuel" is referenced and why such activities should be anticipated; the Petitioners also completely fail to explain what emissions increases would be likely from either of these sources or what their environmental significance would be. *Id.* In fact, Petitioners cite only a single source in all of Part B, and the Petitioners fail to explain how that report supports any of their assertions concerning the environmental significance of greenhouse gases that would be attributable to the proposed Bellefonte facility.[27] Therefore, this basis fails to meet the requirements of § 2.309(f)(1)(v).

2. Petitioners fail in Part B of Proposed Contention 15 [FSAR-C] to identify a genuine dispute with the Application on a material issue of law or fact.

As noted above, the contention is devoid of factual support for its assertions and conclusions concerning the significance of greenhouse gas emissions, whether from the uranium fuel cycle or otherwise. As such, the contention identifies no specific dispute with the Application other than to argue generally that sections of the ER should contain such a discussion. Yet having failed to present a sufficiently specific or supported argument concerning the importance of greenhouse gases for environmental impacts analyses generally,

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[27] The Petition states only that the findings in the cited report "include the determination that a key limiting variable in the nuclear fuel cycle impacts on Greenhouse Gas emissions is the relative ease with which uranium is obtained[.]" Petition at 83. The Petition completely fails to explain how this determination relates to or supports any of the broad statements in the main text of the contention.

the Petitioners have not articulated any support for an argument that such an analysis is appropriate or significant with respect to the Bellefonte Application or that any significant impacts have not been disclosed in the ER. Accordingly, this basis fails to meet the requirements of § 2.309(f)(1)(vi).

For the reasons stated above, Part B of Proposed Contention 15 [FSAR-C] fails to meet the requirements of § 2.309(f)(1)(v) and (vi), and thus is not admissible.

P. PROPOSED CONTENTION SIXTEEN [NEPA-N]: Environmental Report's Inadequate Cost Estimates and Cost Comparisons. (Petition at 84).

BASIS:

> [TVA's] cost comparison is inadequate to satisfy the National Environmental Policy Act ("NEPA") or NRC regulations at 10 C.F.R. § 51.45(c) because it fails to provide reasonably up-to-date and accurate information regarding the costs of nuclear power, the costs of alternative energy sources, and the financial risks posed by the election of nuclear power as an energy source. TVA also presents internally contradictory costs of nuclear energy[.] [Petition at 84.] […]
>
> [C]areful estimates of the costs of nuclear energy, based on industry and government data, indicate far higher costs than the range of $36 to $83 per MWh shown in the Environmental Report. [Petition at 87.] […]
>
> Costs of renewable energy sources are not properly evaluated. [Petition at 88.] […]
>
> The Environmental Report does not consider several financial risk factors … When all of these financial risks are taken into account, the cost of nuclear power is significantly higher than estimated by TVA. It is also higher than the cost of renewables or is expected to be before the proposed nuclear plant comes on line. [Petition at 89, 92.]

In Proposed Contention 16 [NEPA-N], Petitioners challenge the consistency and accuracy of the ER's cost estimates for nuclear energy generation, including with respect to capital costs as well as fuel costs. Petition at 85-87. Petitioners also challenge the ER's evaluation of renewable energy sources and the ER's comparison of nuclear energy generation against those alternatives. *Id.* at 88-89. Petitioners also argue that the ER overlooks certain financial risks,

including those relating to changes in costs of alternative energy sources. *Id.* at 90-92. Petitioners conclude that TVA underestimates the cost of nuclear power, including relative to the cost (or projected cost) of renewable energy sources. *Id.* at 92.

*Staff Response*: The NRC staff opposes the admission of Proposed Contention 16 [NEPA-N]. For the reasons stated below, the Petitioners fail to provide factual support, including references to specific sources and documents, for central aspects of the contention. The Petitioners also fail to provide sufficient information to show that a genuine dispute exists with the Applicant on a material issue of law or fact. Accordingly, Proposed Contention 16 [NEPA-N] fails to meet the requirements of § 2.309(f)(1)(v) and (vi), and thus it is not admissible.

With respect to nuclear energy cost data in the ER, the Petition does identify specific cost estimates for nuclear generation that the Petition describes as "internally contradictory." Petition at 84, 86 n.32. The Petition also criticizes the ER's reliance on MIT and University of Chicago studies from 2003 and 2004, arguing that there have been "serious escalations in the real capital cost of nuclear power since that time." Petition at 85. The Petition accordingly disputes the reasonableness of TVA's cost estimates for nuclear generation, relying on information associated with a Florida Power & Light (FP&L) project as well as a "Keystone Center Joint Fact Finding" on nuclear energy. Petition at 85-86. The Petition argues that the ER's values for "fuel costs and operation and maintenance costs are also unreasonably low." Petition at 86. While it provides no source for the claim of higher operation and maintenance costs, the Petition cites an Energy Information Administration Source to assert that uranium costs are much higher than the values used in the ER. Petition at 86-87.

The central reason the Petition claims to dispute the ER's cost estimates for nuclear power generation – i.e., why Petitioners argue that their dispute with the Application's cost analysis is on a material issue - is because the Petitioners characterize those estimates as "an

incorrect and misleading *basis for comparison with the alternatives*." Petition at 85 (emphasis added). However, as discussed below, the Petition fails to provide factual support for its own assertions concerning the cost of alternative energy sources relative to nuclear. Accordingly, the Petitioners fails to demonstrate why their challenges to the ER's cost estimates concerning nuclear generation ultimately represent a genuine dispute with the ER's analysis and conclusions concerning cost comparison.

1. The Petitioners fail in Proposed Contention 16 [NEPA-N] to reference sources and documents to support their position.

With respect to the costs of solar energy, the Petitioners fail to provide sources and documents to support key assertions in the contention. Subpart 2 of the contention focuses on the claim that "Costs of renewable energy sources are not properly evaluated." Petition at 88. However, the Petition acknowledges that the ER's cost estimates for solar energy "are fairly realistic representation [sic] of large or (in the case of solar PV) intermediate- and large-scale installations at present." Petition at 88. The Petition then claims that "costs of solar-generated electricity have been declining rapidly," Petition at 88, but it gives no source for this assertion. The Petition also states that "a static cost comparison with solar is an incorrect basis for making a decision in favor of nuclear" because "the lead time for building solar capacity is much shorter than nuclear," Petition at 88, but again provides no facts or expert opinions to support this assertion.

The Petition's subsequent assertions concerning the viability and costs of solar power either are made without citation or rely on speculation about future conditions. The Petition states, without citation, that "Solar voltaics built on commercial rooftops and parking lots can be built in modules of one to a few MW and have construction times on the order of a year or even less. Hence, new capacity can be closely tailored to rising demand[.] … Solar thermal power plants can be built in modules of a few tens of megawatts to a few hundred megawatts. The

lead time for such power plants is about three years." Petition at 90. Similarly, the Petition cites two DOE sources indicating that costs of photovoltaic (PV) or concentrating solar thermal power (CSP) generation could drop to "competitive" levels by 2015 or 2020, but indicates that those projections are "if [PV] capacity increase goals are achieved" or "if there are sufficient orders for [CSP] plants," respectively.[28] Petition at 90, 91. The Petition relatedly asserts that there has been "a spate of orders" for new solar plants in California, but again provides no reference. Petition at 89. Consequently, the Petition's dispute with what it concedes is the "fairly realistic representation of [solar energy costs] at present," Petition at 88, depends either on assertions lacking reference support or on contingent future conditions. Neither is sufficient to demonstrate material facts that are contrary to the ER's present estimates of solar energy costs.

Similarly, with respect to the costs of wind energy, the Petitioners fail to provide sources and documents to support relevant assertions in the contention. The Petition argues that costs of wind generation actually should be higher than is stated in the ER, because the range of costs is "low compared to current costs of wind turbine installations." Petition at 88. Petitioners state that "[t]hese capital costs of wind power have also escalated in the past few years" and that a "more reasonable range for wind generated electricity costs would be $80 to $120 per MWh. Petition at 88. However, the Petition does not identify its basis for these estimates,

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[28] The Petition argues that even assuming costs at "the higher end" of the cited DOE-projected costs of PV generation, the cost would be lower than costs of new nuclear plants or than costs of new coal generation. Petition at 90-91. Even ignoring the aforementioned contingent nature of the DOE PV generation projections, the Petition's comparison to coal generation relies on a statement, without citation, that "significant costs are likely to be imposed for CO2 emissions in the coming years. For instance, a CO2 emissions cost of $50 per metric ton corresponds to a cost of about $50 per MWh for pulverized coal-fired power plants." Petition at 91. Without any explanation of the factual basis for this essentially speculative policy projection, the Petitioners have not demonstrated any source or document they would rely on to support their argument. § 2.309(f)(1)(v).

though it characterizes this cost as still "generally lower than the presently estimated costs of electricity from AP1000 units." Petition at 88.

Finally, the Petition's discussion in Subsection 3 concerning "financial risk factors" also fails to provide sources and documents to support key assertions. After discussing the viability of solar and wind power, the Petitioners identify several general financial risks that they claim "are not considered in the Environmental Report[.]" Petition at 91. According to the Petitioners, these risks include "[i]nterest rate risks, since rates could increase at a time when inflationary pressures are on the rise," "[r]eal cost escalation – costs of raw materials such as steel and cement may continue to rise for a variety of reasons, presenting a risk of cost escalation," and "[f]oreign exchange risks, since the dollar has been declining for a variety of reasons, and since critical heavy forgings will be imported." Petition at 92. The Petition provides no references to support these general assertions, either with respect to the significance or magnitude of these risks, the existence of the asserted trends or their likelihood of continuing, or their practical impact on any estimates in the Application. The Petition also refers to financial "[r]isks of delays," pointing again to a Florida Power and Light official's projection of possible significant costs (in interest charges and otherwise) that might result from a six month delay on an FP&L reactor project at Turkey Point in Florida. Petition at 92. However, the Petition fails to present any factual support for inferring why it is reasonable to assume such delays or their associated costs will occur. More importantly, the Petition does not explain why it is reasonable to infer that such costs at an FP&L project in Florida would be similar for delays at Bellefonte, or how addressing such a possibility would even change the ER's estimates. Consequently, the Petition does not identify why TVA's existing cost estimates are inadequate without incorporating such risks.

In short, for several key assertions in Proposed Contention 16 [NEPA-N], the Petitioners fail to provide the facts and references to support them, contrary to the requirements of § 2.309(f)(1)(v).

2. The Petitioners fail in Proposed Contention 16 [NEPA-N] to demonstrate a genuine and material dispute with the Application's analysis of renewable energy alternatives.

In part because of the absence of factual support for key assertions discussed above, the Petition fails to demonstrate that Proposed Contention 16's [NEPA-N's] challenges to the ER's cost estimates or cost comparisons constitute a material dispute with the Application.

As explained above, the Petition fails to provide support for its assertions about the projected costs of solar energy. However, the Petition also does not explain why it is reasonable to compare or scale the costs of small solar generation projects ("modules of one to a few MW") against the baseload generation project proposed in the ER. Petition at 90.

Likewise, the Petition's discussion of wind energy costs does not clearly raise a dispute with the Application. Without cited support, it suggests a higher value for wind energy costs than used in the ER, and then argues that this cost is "generally lower" than the estimated costs from AP1000 units. Petition at 88. The Petition subsequently suggests that "[t]aken at face value, wind energy should be preferred to nuclear based on the costs cited in the Environmental Report." Petition at 88. The Petition also states that the "intermittency of wind-generated electricity can be overcome by increasing standby capacity," and references a study for the Minnesota Public Utilities Commission for the argument that "[o]nly modest increases in standby capacity are required even if wind energy contributes as much as 15 to 20 percent of total electricity generation." Petition at 88. However, the Petitioners do not explain why this comparison to wind energy in Minnesota is applicable to Bellefonte or why this argument is in any way contrary to the Applicant's discussion of wind generating alternatives in the ER.

In any event, the Application does not rely solely on considerations of cost or "intermittency" for comparing nuclear generation with alternative energy sources (including wind). *See, e.g.,* ER Section 9.2.2.1 (identifying, *inter alia*, capacity factor, aesthetics, and regional wind speeds as considerations in whether wind energy generation is a reasonable alternative at Bellefonte). For example, the ER states that "due to the limited availability of areas having suitable wind speeds, daily and seasonal variability of wind in the region, and aesthetic impacts, wind generation is not a reasonable alternative for baseload power in the Southeast." ER at 9.2-11. Accordingly, even if the cost differential the Petition identifies were accurate or if the "standby capacity" for wind generation at Bellefonte could be increased, the Petition thus does not explain why the ER's conclusion with respect to the viability of those alternatives is unreasonable or inadequate.[29] The Petition thus has not demonstrated a genuine dispute with the Application with respect to the ER's comparison of alternative energy sources to the proposed action.

3. The Petitioners fail in Proposed Contention 16 [NEPA-N] to demonstrate a genuine and material dispute with the Application's analysis of the proposed action in comparison to alternatives.

In sum, the Petition criticizes the ER's cost estimates used for comparing nuclear generation to alternatives, but it fails to make a supported claim that its alternative cost estimates reveal an inadequacy in the ER. Particularly because the Petition does not make

[29] More generally, the Petition does not explain how its cost projections are valid for alternative energy projects of baseload capacity. For example, the Petition fails to discuss whether the cost estimates it posits for alternative energies (solar, wind) take into account the same cost increases and "risk factors" - such as "interest rate risks" or "real cost escalation" – that it claims are misleading in the ER's discussion of nuclear energy generation. Petition at 91-92. The Petition states that costs of wind power have gone up, see Petition at 88, 90, but does not explain whether those increases are due to the financial risks it identifies later in the contention.

clear whether its alternative estimates reflect the same "financial risk" criteria that the Petition advocates, the Petition does not explain why its criticism would constitute a material dispute.

Consequently, without having provided supporting sources and documents to demonstrate that the ER's current solar or wind estimates are invalid, and without having clearly disputed the ER's argument that renewable energy alternatives to the proposed action would need to be capable of providing baseload power, the Petition's challenges regarding cost estimates do not identify a genuine dispute with the Application. For the same reason, the Petition has not demonstrated that any "inconsistencies" it has asserted concerning the cost estimates in the Application constitute genuine disputes on an issue material to the ER's conclusions about alternatives.

For the reasons stated above, Proposed Contention 16 [NEPA-N] fails to meet the requirements of 2.309(f)(1)(v) and (vi), and thus it is not admissible.

Q. PROPOSED CONTENTION SEVENTEEN [NEPA-O]: Inadequacy of Environmental Report's Analysis of Human Health Impacts of Irradiated Fuel Disposal. (Petition at 92).

BASIS:

In Chapter 5 of the Environmental Report, TVA addresses the impacts of the uranium fuel cycle, relying on Table S-3 as required by 10 C.F.R. § 51.51. ER at 5.7-1. Table S-3, however, fails to assess the impacts to human health of burying high level waste in a repository. […] While TVA claims to have addressed human health impacts and found that they are "SMALL" (Environmental Report, Section 5.7.6 at 5.7-8), TVA's conclusions are not reasonable or supported by credible evidence. [Petition at 92.] […]

[Using an annual dose of 350 millirem,] TVA has not represented the full range of doses that would be experienced by the most exposed people at the time of peak dose in the period between 10,000 years and one million years after disposal. [Petition at 93.]

DOE's 2002 Environmental Impact Statement estimates a 95 percentile value of peak dose to be about 600 millirem per year. [citation omitted] […] A 95 percentile dose of 600 millirem per year means that five percent of the exposed women would have a

> lifetime risk of getting cancer equal to or greater than one in 16, and a lifetime fatal cancer risk of equal to or greater than one in 33. This level of risk is completely outside the bounds of any acceptable risks that we impose on our own generation and there is no legal or moral basis for imposing it on generations far into the future. [Petition at 94.]

*Staff Response*: The NRC staff opposes the admission of Proposed Contention 17 [NEPA-O]. For the reasons stated below, the Petition fails to demonstrate that the concern it raises is within the scope of this proceeding. In addition, Petitioners fail to provide factual support, including references to specific sources and documents, for any of the key stated bases for the contention. Petitioners also fail to provide sufficient information to show that a genuine dispute exists with the Applicant on any material issue of law or fact. Accordingly, Proposed Contention 17 [NEPA-O] fails to meet the requirements of § 2.309(f)(1)(iii), (v), and (vi), and thus it is not admissible.

1. Petitioners fail to demonstrate that Proposed Contention 17 [NEPA-O] is within the scope of this proceeding, because their attack on the proposed EPA standards regulating offsite releases from radioactive materials in repositories is necessarily an attack on the NRC's own proposed rulemaking.

According to Petitioners, TVA assumes that effluents from high-level waste buried in a repository will comply with the regulatory standards proposed by the EPA for offsite releases from radioactive material in repositories. Petition at 93. Petitioners claim that by relying on future compliance with the EPA's proposed dose standards, the Application inaccurately concludes that compliance with those standards would result in SMALL human health impacts. Petition at 92-93. Consequently, Petitioners' argument in Proposed Contention 17 [NEPA-O] is necessarily based on Petitioners' assertion that the dose standards currently proposed by the EPA are not in fact adequately protective of human health and that "the impacts envisaged in the standard [are] LARGE and not SMALL." Petition at 94. As a result, as explained below, Petitioners' contention amounts to an attack both on the EPA's proposed rulemaking and,

necessarily, on the NRC's current proposed rulemaking that would adopt the EPA's standards. However, neither of these challenges is within the scope of this proceeding and cannot be an admissible basis for a contention in an NRC proceeding.

To begin with, Petitioners ignore a relevant portion of the ER's discussion of the background of this issue:

> In response to the Court's decision [the U.S. Court of Appeals decision vacating EPA's radiation protection standards, which required compliance with certain dose limits over a 10,000 year period, as well as NRC's licensing criteria for the candidate repository in 10 C.F.R. Part 63], EPA issued proposed revised standards on August 22, 2005. … As required by the Nuclear Waste Policy Act of 1982 … and in order to be consistent with EPA's revised standards, NRC proposed revisions to 10 CFR Part 63 on September 8, 2005. The proposed standards are 0.15 mSv/yr (15 mrem/yr) for 10,000 years following disposal and 3.5 mSv/yr (350 mrem/yr) after 10,000 years through 1 million years after disposal.

ER Section 5.7.6 at 5.7-8. As the ER acknowledges, the NRC is currently engaged in a rulemaking to revise its dose standards to be consistent with those proposed by EPA. Significantly, the regulatory consistency intended by the NRC's rulemaking is statutorily required by the Nuclear Waste Policy Act of 1982, as amended [Pub. L. 97-425, 96 Stat. 2201 (1983), as amended] (NWPA).

Pursuant to the NWPA, EPA is required to promulgate by rule "generally applicable standards for protection of the general environment from offsite releases from radioactive material in repositories." 42 U.S.C.A. § 10141 (2008) (NWPA § 121). Correspondingly, the NWPA requires the NRC to promulgate technical requirements and criteria applicable to repository licensing, and such requirements and criteria "shall not be inconsistent" with the standards set by the EPA. *Id.* The EPA has explained that its revised proposed standards are designed to be "[p]rotective of public health and safety." *See* Public Health and Environmental

Radiation Protection Standards for Yucca Mountain, Nevada (Proposed Rule), 70 Fed. Reg. 49,014, 49,029 (Aug. 22, 2005).[30]

Accordingly, the Petitioners' attack on TVA's reliance on the proposed EPA standards is necessarily an attack not only on the adequacy of the EPA standards themselves, but also on the NRC's own pending rulemaking to adopt those standards. *See* Implementation of a Dose Standard After 10,000 Years (Proposed Rule), 70 Fed. Reg. 53,313 (Sept. 8, 2005). The Commission in *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328 (1999) rejected a contention because the subject matter was the subject of a pending NRC rulemaking. The Commission stated, "[i]t has long been agency policy that Licensing Boards 'should not accept in individual proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission.'" *Id.* at 345, *citing Potomac Elec. Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 86 (1985); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179 (1998). Accordingly, because the Petitioners' challenge implicates a dose standard that the NRC is proposing to adopt as part of an NRC rulemaking, the Petitioners have not demonstrated that their contention is within the scope of this proceeding.

Even if Petitioners' challenge to the EPA standard were not thereby an attack on a Commission's own pending rulemaking, it still would not be within the scope of this proceeding because it depends on a challenge to the substantive provisions of a rulemaking that is the

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[30] The NWPA identifies one of the statute's primary purposes as establishing "a schedule for the siting, construction, and operation of repositories that will provide a reasonable assurance that the public and the environment will be adequately protected from the hazards posed by high-level radioactive waste and such spent nuclear fuel as may be disposed of in a repository[.]" 42 U.S.C.A. § 10131 (2008) (NWPA § 111(b)(1)).

responsibility of another agency. A petitioner cannot base a contention on matters properly before other regulatory bodies. *See Louisiana Energy Servs., L.P.* (National Enrichment Facility), LBP-06-8, 63 NRC 241, 280 n.32 (2006), citing *Hydro Resources, Inc.* (2929 Coors Rd., Suite 101, Albuquerque, NM 87120), CLI-98-16, 48 NRC 119, 121-22 (1998).[31] Here, the Petitioners attack on the Application is in fact a challenge to the substantive adequacy of the provisions of the EPA rulemaking; the determination of those standards is under the EPA's authority and thus not litigable in this proceeding.

2. Petitioners fail to provide references to the specific sources and documents on which they intend to rely, and to explain why their statements provide supporting reasons that demonstrate a dispute with the Application.

In addition to failing to demonstrate that their contention is within the scope of the proceeding, Petitioners have not provided a concise statement of asserted facts or expert opinion on which they intend to rely at hearing, together with references to the specific sources and documents on which they intend to rely to support their position. *See* 10 C.F.R. § 2.309(f)(1)(v). The Petitioners rely on "Declaration By Dr. Arjun Makhijani in Support of Blue Ridge Environmental Defense League's Contentions" (Makhijani Declaration). Petition at 93. However, the Makhijani Declaration merely recites Dr. Makhijani's academic credentials and experience, and concludes that he is responsible for the factual content and expert opinions expressed in this contention. Makhijani Declaration at 1-3. The Makhijani Declaration itself does not identify any sources or references that support the Petitioners' position or on which Dr. Makhijani intends to rely.

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[31] In *LES,* a Licensing Board noted that compliance with EPA drinking water standards was an issue beyond the Board's jurisdiction and outside the scope of the proceeding. *LES*, LBP-06-8, 63 NRC at 280 n32. In *Hydro Resources*, the Commission determined that an NRC adjudication has no role in determining whether an applicant must obtain a non-NRC permit. *Hydro Resources*, CLI-98-16, 48 NRC at 121-22. For the same reason, matters within the jurisdiction of other regulatory agencies such as permitting, enforcement, and rulemaking cannot be adjudicated by the NRC.

Moreover, the contention does not explain how the statements and references in the contention provide support for the Petitioners' position that creates a material dispute with the Application. The text of the contention criticizes the EPA's proposed standard for repositories, including that the standard "is actually a probability distribution," Petition at 93, and that "the risks are unacceptably LARGE and far outside the range of current radiation protection norms." Petition at 95. However, neither the contention nor the Makhijani Declaration explains in what way these statements comparing increases in dose or risk mean that TVA's conclusions with respect to human health impacts "are not reasonable or supported by credible evidence." Petition at 92.

Similarly, the contention also states that "[t]he EPA has said that much lower risk … is 'unacceptably high,'" and references a statement by Ramona Trovato of the EPA concerning the NRC's proposed License Termination Rule. Petition at 95. However, the Petitioners do not explain why a statement concerning the proposed License Termination Rule is an appropriate basis for comparison with the EPA standard for repositories that Petitioners criticize in this contention, or why a previous EPA criticism of a proposed NRC rule is significant for the instant contention now that the dose standard for repositories has since been proposed by rule by EPA itself.

Likewise, the Petition refers to comments from the Institute for Energy and Environmental Research (IEER Comments) on EPA's proposed radiation protection standards for the Yucca Mountain repository. Petition at 93. However, the Petition does not explain how the IEER Comments support any challenge to TVA's Application. Incorporating the IEER Comments into the contention without providing any basis for the significance of the IEER

Comments does not provide an adequate basis for the contention.[32] *See PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 23 (2007), *citing Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 204-05 (2003); *Private Fuel Storage, L.L.C.* LBP-98-10, 47 NRC 288, 298 (1998). Thus, the Petitioners fail to provide a concise statement of alleged facts or expert opinion with references in support of this contention, or to provide supporting reasons for why the statements in the contention demonstrate a material dispute with the Application, as required by 10 C.F.R. § 2.309(f)(1)(v) and (vi).

For the above reasons, Proposed Contention 17 [NEPA-O] does not meet the requirements of § 2.309(f), and thus it is not admissible.

R. PROPOSED CONTENTION EIGHTEEN [NEPA-P]: Inadequacy of Environmental Report's Reliance on Table S-3 Regarding Radioactive Effluents From the Uranium Fual [sic] Cycle. (Petition at 95).

BASIS:

In Chapter 5 of the Environmental Report, TVA addresses the impacts of the uranium fuel cycle. In accordance with 10 C.F.R. § 51.51, TVA relies on Table S-3 of 10 C.F.R. Part 51, and concludes that the impacts of radioactive waste are "SMALL." Environmental Report at 5.7-1, 5.7-8. Table S-3, however, fails to make accurate assumptions or estimates about the nature of disposal methods that must be used or the types of radioactive wastes to be disposed of. If accurate information is used about disposal methods and waste types, the environmental impacts of

[32] The IEER Comments appear to contain Dr. Makhijani's analysis of a proposed EPA rule for setting protection standards for a high level waste repository, but neither the Petition nor Dr. Makhijani's declaration contain any explanation concerning the contents of these comments or their relevance to the Application. The report concludes that EPA's proposed rule "should be rejected as insufficiently protective of the public health." IEER Comments at 1.

> the uranium fuel cycle to human health and the environmental [sic] are "LARGE." [Petition at 96.]

The Petitioners elaborate on their challenge to Table S-3 by stating, "Table S-3's assumption that GTCC waste may be disposed of on site in shallow land burial is entirely unfounded." Petition at 100. The Petitioners also state, "Large amounts of DU [depleted uranium] from uranium enrichment plants has [sic] been declared a low-level waste by the NRCommission [sic], but its classification within the low-level waste scheme has yet to be decided." Petition at 101.

*Staff Response*: The NRC staff opposes the admission of Proposed Contention 18 [NEPA-P] because, pursuant to 10 C.F.R. § 2.335, it is an impermissible attack on a rule. The NRC staff further opposes the admission of Proposed Contention 18 [NEPA-P] because it is not within the scope of the proceeding and it does not raise a genuine dispute on a material issue of law or fact under 10 C.F.R. § 2.309(f)(1)(iii) and (vi).

1. Petitioners' challenge amounts to an impermissible attack on 10 C.F.R. § 51.51.

The Commission has provided litigants in an adjudicatory proceeding subject to 10 C.F.R. Part 2 the opportunity to request that a Commission rule or regulation "be waived or an exception made for the particular proceeding." 10 C.F.R. § 2.335(b). The Commission has specified that "[t]he sole ground for petition of waiver or exception is that special circumstances with respect to the subject matter of the particular proceeding are such that the application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted." *Id.* The Commission requires that any request for such waiver or exception "be accompanied by an affidavit that identifies . . . the subject matter of the proceeding as to which application of the rule or regulation . . . would not serve the purposes for which the rule or

regulation was adopted." *Id.* Additionally, "[t]he affidavit must state with particularity the special circumstances alleged to justify the waiver or exception requested." *Id.*

The Petitioners have failed to establish that they meet any of the requirements imposed by the Commission on litigants wishing that a rule be waived or an exception be granted. *See* Petition at 97-98. They have failed to establish that application of 10 C.F.R. § 51.51 in this particular proceeding would not serve the purpose for which the rule was adopted. To the contrary, 10 C.F.R. § 51.51 reflects, on its face, that the rule was designed to dispense with the need for NRC adjudications to address the impacts associated with the uranium fuel cycle.

In support of their attack on Table S-3, the Petitioners next state that Table S-3 assumes that greater than Class C (GTCC) waste may be disposed of on site in shallow land burial. Petition at 100. However, there is no such statement in Table S-3, and Petitioners do not provide a basis to support an assertion that any GTCC waste would not be disposed of in accordance with NRC regulations. *See* 10 C.F.R. § 61.55(a)(2)(iv). The Petitioners also state, "Large amounts of DU [depleted uranium] from uranium enrichment plants has [sic] been declared a low-level waste by the NRCommission, but its classification within the low-level waste scheme has yet to be decided." Petition at 101. However, this argument is also incorrect; the Commission specifically confirmed in a recent proceeding that DU is Class A waste. *See Louisiana Energy Services, L.P.* CLI-05-20, 62 NRC 523, 535 (2005);[33] *Louisiana Energy Servs.,* LBP-06-8, 63 NRC at 267.[34]

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[33] Indeed, Dr. Makhijani served as an expert for the intervenors in that proceeding. *See* CLI-05-20, 62 NRC at 534 n.51.

[34] The Board in LBP-06-8, citing the Commission determination in CLI-05-20, stated, "In fact, such a classification ruling by this Board is entirely unnecessary because the Commission has unequivocally stated that, under a plain reading of section 61.55(a), depleted uranium is Class A waste [citation omitted]." *Id.* at 267. While the Petition notes that the Commission has directed the NRC staff to (continued. . .)

Therefore, the Petitioners do not show that 10 C.F.R. § 51.51 would not serve the purposes for which it was adopted, and do not provide the required affidavit specifying the aspect of this proceeding that the rule would not serve, or state with particularity the special circumstances alleged to justify the waiver or exception as required by 10 C.F.R. § 2.335.

2. Petitioners fail to raise a genuine dispute on a material issue of law or fact and fail to demonstrate that the alleged shallow waste disposal issue is within the scope of this proceeding as required by 10 C.F.R. § 2.309(f)(1)(iii) and (vi).

The Petitioners in Proposed Contention 18 [NEPA-P] assume that there would be a high peak dose resulting from shallow land burial of GTCC waste and from disposal of large amounts of DU from fuel processing. However, GTCC waste is currently required to be disposed of in a deep geologic repository pursuant to 10 C.F.R. § 61.55(a)(2)(iv). Further, the Petitioners cite the notice of intent to prepare an environmental impact statement for GTCC and thus are aware that the DOE is currently examining disposal options for GTCC waste.[35] Petition at 101. Moreover, as the NRC staff has noted, shallow disposal of large amounts of DU would need to comply with 10 C.F.R. Part 61 performance objectives. *See Louisiana Energy Services,* LBP-06-8, 63 NRC at 277. Accordingly, the Petitioners have failed to explain the basis for their assumptions of a high peak dose from GTCC and DU disposal and thus have failed to explain

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(. . .continued)

consider whether amendments to Part 61 with respect to DU are warranted, the Petition does not explain why that action disturbs the Commission's existing precedent on DU's waste classification status.

[35] "Section 3(b)(1)(D) of the Low-Level Radioactive Waste Policy Amendments Act of 1985 (LRWPAA, Public Law 99-240) assigned the Federal Government responsibility for the disposal of GTCC LLW that results from activities licensed by the U.S. Nuclear Regulatory Commission (NRC) and Agreement States. The LLRWPAA also directed that such waste be disposed in a facility licensed by the NRC. There are no facilities currently licensed by NRC for disposal of GTCC LLW. DOE is the Federal agency responsible for the disposal of GTCC LLW and intends to evaluate a range of reasonable alternatives for its disposal in the upcoming EIS." *See* Greater-Than-Class C Low-Level Radioactive Waste EIS Information Center, Background Information, at http://www.gtcceis.anl.gov/ (Accessed June 25, 2008).

why these assertions raise a genuine dispute with the Applicant on a material issue of law or fact as required by 10 C.F.R. § 2.309(f)(1)(vi). The Petitioners likewise do not demonstrate how their assumptions regarding shallow disposal of GTCC or DU relate to this proceeding, and have failed to show that this argument is within the scope of this proceeding as required by 10 C.F.R. § 2.309(f)(1)(iii).

3. Petitioners have not shown that they qualify for the relief described in 10 C.F.R. § 2.802(d).

Petitioners acknowledge that their Proposed Contention 18 [NEPA-P] raises a challenge to the generic assumptions and conclusion in Table S-3 of 10 C.F.R. § 50.51 and declare their intent to submit a rulemaking petition to seek revision of Table S-3. Petition at 97. They state that they seek admission of the proposed contention to protect their right to ensure that "any generic resolution of [their] concerns is made in a timely way and 'plugged in' to the licensing decision in this particular case." *Id.* They cite *Baltimore Gas and Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 101 (1983) and *Commonwealth of Massachusetts v. NRC*, 522 F.3d 115 (1st Cir. 2008), in support of their argument. Petition at 97.

Petitioners' reliance on *Baltimore Gas* is misplaced. In that decision, the Supreme Court overturned a Court of Appeals decision and upheld the NRC's Table S-3. In doing so, the Court addressed the NRC's decision that its licensing boards should assume for purposes of NEPA that the permanent storage of certain nuclear wastes would have no significant environmental impact and, thus, should not affect the decision whether to license a particular nuclear power plant. The Court found that this determination was within the bounds of reasoned decision-making required by the Adminstrative Procedure Act. *Baltimore Gas*, 462 U.S. at 104-105. The Court also held that NRC's instruction complied with NEPA's requirements of consideration and disclosure of environmental impacts of licensing decisions. *Id.* at 106-07.

*Baltimore Gas* does not concern the matter Petitioners raise here. The Court used the expression "plugged in" in the context of addressing the Court of Appeals decision on which the Court had granted certiorari:

> The Court of Appeals recognized that the Commission has discretion to evaluate generically the environmental effects of the fuel cycle and require that these values be 'plugged into' individual licensing decisions. The court concluded that the Commission nevertheless violated NEPA by failing to factor the uncertainty surrounding long-term storage into Table S-3 and precluding individual licensing decisionmakers from considering it.

462 U.S. at 101. In the quoted passage, the Court was reciting the posture of the case. "Plugged into" refers to reliance on Table S-3 in individual licensing proceedings. It does not concern what Petitioners are seeking here, which is to hold a particular contention "in abeyance" (i.e., as a placeholder).

Petitioners properly characterize *Commonwealth of Massachusetts* as stating that although NRC may make generic determinations regarding the significance of environmental impacts and prohibit challenges to those generic determinations in individual proceedings, the NRC must nevertheless "consider any new and significant information regarding environmental impacts before renewing a nuclear power plant's operating license." Petition at 97, *citing* 511 F.3d at 127. Moreover, while the NRC "may 'channel' into a generic rulemaking the challenging party's concerns about the effects of new and significant information on an individual licensing decision, the NRC may not refuse to provide 'at least one path by which the [challenging party] may establish a connection between the rulemaking and the licensing proceeding, thereby ensuring that the result of the rulemaking proceeding will be applied in the individual licensing case.'" Petition at 97-98, *citing* 511 F.3d at 128. Petitioners request that their Proposed Contention 18 [NEPA-P] be admitted and held in abeyance pending the outcome of the generic proceeding. Petition at 98.

However, *Commonwealth of Massachusetts v. NRC* does not help Petitioners for two reasons. First, they are not a party to this proceeding at this time and, second, they have not indicated that they have in fact filed a petition for rulemaking. In *Massachusetts*, the court addressed the extent of Massachusetts' ability to invoke 10 C.F.R. § 2.802(d) concerning Petitions for Rulemaking. *Massachusetts*, 522 F.3d at 128. Under that regulation, a rulemaking petitioner "may request the Commission to suspend all or any part of any licensing proceeding *to which the petitioner is a party* pending disposition of the petition for rulemaking." § 2.802(d) (emphasis added). The court accepted NRC's view that although Massachusetts was not a party pursuant to 10 C.F.R. § 2.309, it could become a party by requesting "interested state" status, pursuant to 10 C.F.R. § 2.315(c). *Massachusetts*, 522 F.3d at 128-30. Also, as noted in the court's decision, Massachusetts had indeed filed a petition for rulemaking. *Id.* at 127-28. Thus, Petitioners' circumstances in this proceeding are different from those of Massachusetts in *Massachusetts*, and the rule in that case is not applicable to them.

For the above reasons, Proposed Contention 18 [NEPA-P] does not meet the requirements of § 2.309(f), and thus it is not admissible.

S. PROPOSED CONTENTION NINETEEN [NEPA-Q]: Environmental Report's Improper Characterization of Health Effects from the Uranium Fuel Cycle as Small and Failure to Adequately Compare Them to Health Effects of Alternative Energy Sources. (Petition at 103).

BASIS:

The Environmental Report estimates that the annual population dose from routine operations at the proposed Bellefonte nuclear power plant will be 2,247 rem, including radon and Tc-99. Id at 5.7-19. But the Environmental Report fails to evaluate what this means with respect to the number of cancer illnesses and deaths that are likely to be caused by the plant's operation. Petition at 103.

*Staff Response*: The NRC staff opposes the admission of Proposed Contention 19 [NEPA-Q]. The Petitioners fail to demonstrate that the proposed contention meets the requirements of 10 C.F.R. § 2.309(f)(1)(iii), (iv), (v) and (vi).

Section 2.309 requires Petitioners to demonstrate that their proposed contentions are material to the findings the NRC must make in this proceeding. *See* 10 C.F.R. § 2.309(f)(1)(iv). As an initial matter, Petitioners do not identify any specific requirement pertaining to the comparison of health effects of the uranium fuel cycle to the health effects of alternative energy sources, nor do they specify why such a requirement is material to the findings the NRC must make regarding the Application. Accordingly, the Petition fails to satisfy § 2.309(f)(1)(iv) with respect to proposed Contention 19 [NEPA-Q], and it is inadmissible.

More importantly, the Petitioners do not offer any alleged facts or opinions of their own on which they would rely concerning the human effects of any energy generation alternatives that they believe should be evaluated. Consequently, they have not provided support for an assertion that any particular human health effects should be evaluated in the ER and have not been.[36] Accordingly, the Petitioners have not shown that the contention meets the requirements

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[36] The Petitioners also appear to overlook portions of the ER that do address certain human health effects associated with energy generation from sources other than nuclear generation. Petitioners charge that the ER is deficient because it fails to compare the health effects of operating the proposed plant with the health effects of alternative energy-producing technologies such as wind or solar energy or with the alternative of energy conservation. Petition at 106. In Section 9.2 of the ER, TVA considered a number of alternatives to two new nuclear units at the Bellefonte site. Following the guidance of NUREG-1457, "The Generic Environmental Impact Statement [GEIS] for License Renewal of Nuclear Plants" (1996) ("GEIS"), TVA considered the alternatives of wind, solar, hydro, geothermal, biomass, municipal solid waste, petroleum liquids, fuel cells, pulverized coal, Integrated Gasification Combined Cycle (IGCC), natural gas, and possible combinations of these alternatives. ER at 9.2-9 to -10. The ER addresses the human health effects of coal and gas generation. The ER notes that NUREG-1437 stated that there could be human health impacts (cancer and emphysema) from inhalation of toxins and particulates from a coal-fired plant, but did not identify the significance of these impacts. ER at 9.2-27. The ER adds that the discharges of uranium and thorium from coal-fired plants can potentially produce radiological doses in excess of those arising from nuclear power plant operations. *Id.* The ER concluded that the human health impacts from radiological doses and inhaling toxins and particulates generated by burning coal at a newly constructed coal-fired plant are considered SMALL. *Id.*
(continued. . .)

of § 2.309(f)(1)(v). Relatedly, Petitioners have not explained in what way such a comparison would dispute the analysis or conclusions in the ER or render them inadequate. The Petition thus fails to show that Proposed Contention 19 [NEPA-Q] presents a dispute with the Application on a material issue of fact or law. *See* § 2.309(f)(1)(vi).

Proposed Contention 19 [NEPA-Q] also fails to show that a dispute exists on a material issue of fact or law with respect to the Petition's discussion of uranium fuel cycle impacts. Petitioners apply BEIR-VII risk factors of 1,135 cancers per million rem and 570 cancer deaths per million rem to a dose estimate of 2,247 person-rem (see ER Table 5.7-4), thereby calculating 102 cancers and 51 cancer deaths over 40 years of operation. In the ER, TVA estimated 0.8 cancer deaths per year based on 1,605 person-rem per year (excluding doses from Bellefonte plant effluents and Rn-222 and Tc-99) and a risk estimator (in accordance with NUREG/CR-4214, "Health Effects Models for Nuclear Power Plant Accident Consequence Analysis." (1993)) of 500 cancer deaths per million person-rem. ER at 5.7-6. TVA further estimated 375 person-rem per year from Rn-222 and 268 person-rem from Tc-99,[37] see ER Table 5.7-3 at 5.7-18, and concluded that the additional risk from Rn-222 and Tc-99 doses is quite small compared to the risks from the doses from natural sources of background radiation.

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(. . .continued)

In addressing the human health effects of natural gas generation, the ER again relies on the GEIS for license renewal, stating that the NRC staff identified cancer and emphysema as potential health risks from natural-gas-fired plants. ER at 9.2-33. The ER concluded that human health impacts are not expected to be detectable or would be minor such that they would neither destabilize nor noticeably alter any important attribute of the resource. *Id.* Overall, the ER considered the impacts on human health of newly constructed natural-gas-fired plants to be SMALL. *Id.*

[37] The NRC staff notes that 1,605 + 375 + 268 is approximately equal to 2,247 person-rem, except for the roundoff error from adding a number of conversions from person-sieverts to person-rem.

ER at 5.7-7. Therefore, TVA did evaluate the risk of cancer deaths for 2,247 person-rem in the ER; TVA just presented the results in a different format.

More importantly, Petitioners do not explain why the risk estimators they have used are more appropriate than those used by TVA, much less that the Petitioners' approach is necessary, nor have Petitioners demonstrated why the resulting difference between TVA estimates and those of Petitioners constitutes a material dispute with the Application.[38] § 2.309(f)(1)(vi). Furthermore, Petitioners' opinion that it is "improper" to compare natural sources of risk (background radiation) to involuntarily imposed radiation simply states the Petitioners' philosophical view of what applicable policies should be and does not introduce a controversy that is within the scope of the proceeding. *See Peach Bottom*, ALAB-216, 8 AEC at 20-21. Accordingly, this basis does not meet the requirements of § 2.309(f)(1)(iii).

For the above reasons, Proposed Contention 19 [NEPA-Q] does not meet the requirements of § 2.309(f), and thus it is not admissible.

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[38] That is, Petitioners have not explained the significance of the difference between the risk estimators used by the Petitioners (570 cancer deaths per million person-rem) and by TVA (500 cancer deaths per million person-rem). Moreover, the NRC staff notes that the value of 500 is within the range of values reported for cancer deaths in Table ES-1 of BEIR-VII, the same reference used by the Petitioners to estimate 570 cancer deaths per million person-rem.

CONCLUSION

In view of the foregoing, the NRC staff submits that the Petition should be denied.

Respectfully submitted,

**Executed in Accord with 10 C.F.R. § 2.304(d)**

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Dated at Rockville, Maryland
this 1st day of July 2008

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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| In the Matter of | ) | |
| | ) | |
| | ) | Docket Nos. 52-014, 52-015 |
| Bellefonte Nuclear Power Plant | ) | |
| Units 3 and 4 | ) | |

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF ANSWER TO "PETITION FOR INTERVENTION AND REQUEST FOR HEARING BY THE BELLEFONTE EFFICIENCY AND SUSTAINABILITY TEAM, THE BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE AND THE SOUTHERN ALLIANCE FOR CLEAN ENERGY" have been served upon the following persons by Electronic Information Exchange this 1st day of July, 2008:

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