

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
NextEra Energy Seabrook, LLC)	Docket No. 50-443-LR
)	
(Seabrook Station, Unit 1))	ASLBP No. 10-906-02-LR-BD01

NRC STAFF'S ANSWER TO PETITIONS TO INTERVENE AND
REQUESTS FOR HEARING FILED BY (1) FRIENDS OF THE
COAST AND NEW ENGLAND COALITION AND (2) BEYOND NUCLEAR,
SEACOAST ANTI-POLLUTION LEAGUE, AND NEW HAMPSHIRE SIERRA CLUB

Mary B. Spencer
Maxwell C. Smith
Catherine E. Kanatas
Megan A. Wright
Emily Monteith
Counsel for NRC Staff

November 15, 2010

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INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(h)(1), the Staff of the U.S. Nuclear Regulatory Commission ("NRC Staff" or "Staff") hereby files its answer to petitions for leave to intervene and requests for hearing filed by (1) Friends of the Coast and New England Coalition ("FOTC/NEC")¹ and (2) Beyond Nuclear, Seacoast Anti-Pollution League, and New Hampshire Sierra Club ("Beyond Nuclear").²

In the following discussion, the Staff provides, first, a brief description of the background

¹ See Friends of the Coast and New England Coalition Petition for Leave to Intervene, Request for Hearing, and Admission of Contentions (dated Oct. 20, 2010) (Agency Documents Access and Management System ("ADAMS") Accession No. ML102940545) ("FOTC/NEC Petition"). Due to difficulties with the electronic filing system, FOTC/NEC initially filed its Petition via e-mail early on October 21, 2010. FOTC/NEC completed filing via the electronic filing system on October 21, 2010. On October 22, 2010, FOTC/NEC filed a request to file late, i.e. on October 21 instead of October 20. See Friends of the Coast/New England Coalition Request for Extension of Time (ADAMS Accession No. ML102950286). The Staff did not oppose the request. NextEra reserved the right to reply but did not do so. No order has been issued on FOTC/NEC's request.

² See Beyond Nuclear, Seacoast Anti-Pollution League and New Hampshire Sierra Club Request for Public Hearing and Petition to Intervene (Oct. 20, 2010) (ADAMS Accession No. ML102930267) ("Beyond Nuclear Petition").

of this license renewal proceeding; second, a discussion of each petitioner's standing to intervene in the proceeding; and, third, a discussion of the admissibility of each petitioner's proposed contentions. As more fully set forth below, both FOTC/NEC and Beyond Nuclear have submitted sufficient information to support standing to intervene, but neither has submitted an admissible contention.

BACKGROUND

This proceeding concerns the May 25, 2010, application of NextEra Energy Seabrook, LLC ("NextEra" or "Applicant") to renew its operating licenses for Seabrook Station, Unit 1 ("Seabrook") for an additional 20 years from the current expiration date of March 15, 2030.³ The Seabrook site is located in Rockingham County, New Hampshire, 13 miles south of Portsmouth, New Hampshire. Seabrook employs a four-loop pressurized water reactor ("PWR") nuclear steam supply system ("NSSS").

Notice of receipt of the License Renewal Application ("LRA" or "Application") was published in the *Federal Register* on June 16, 2010.⁴ The NRC accepted the LRA for review, and on July 21, 2010, published a *Federal Register* Notice providing a Notice of Opportunity for Hearing.⁵ On August 18, 2010, six organizations, including FOTC/NEC and Beyond Nuclear, filed a joint petition for rulemaking ("Rulemaking Petition") under 10 C.F.R. § 2.802 requesting a rulemaking to amend 10 C.F.R. § 54.17 such that license renewal applications may not be

³ Letter from Paul O. Freeman, Site Vice President dated May 25, 2010, transmitting application for license renewal for Seabrook Station, Unit 1 (ADAMS Accession No. ML101590099) ("LRA").

⁴ See NextEra Energy Seabrook, LLC; Notice of Receipt and Availability of Application for Renewal of Seabrook Station, Unit 1 Facility Operating License No. NPF-86 for an Additional 20-Year Period, 75 Fed. Reg. 34180 (June 16, 2010).

⁵ See Notice of Acceptance for Docketing of the Application and Notice of Opportunity for Hearing Regarding Renewal of Facility Operating License No. NPF-86 for an Additional 20-Year Period; NextEra Energy Seabrook, LLC; Seabrook Station, Unit 1, 75 Fed. Reg. 42462 (July 21, 2010).

submitted earlier than 10 years before expiration of the existing license and that the Commission suspend all license renewal reviews pending resolution of the Rulemaking Petition. On September 27, 2010, the NRC published notice of receipt and opportunity to comment on the Rulemaking Petition in the *Federal Register*.⁶ The Commission has not yet taken action on the Rulemaking Petition's request to suspend license renewal proceedings.

The period for filing a petition for intervention or request for hearing was to be closed on September 20, 2010;⁷ however, on September 17, 2010, the Secretary to the Commission granted the New Hampshire Attorney General, Beyond Nuclear, and FOTC/NEC a 30-day extension to file petitions to intervene.⁸ On September 20, 2010, the Secretary to the Commission granted the same extension to the New Hampshire Sierra Club, and Seacoast Anti-Pollution League.⁹

On October 20, 2010, FOTC/NEC and Beyond Nuclear filed the instant petitions.

An Atomic Safety and Licensing Board ("Board") was convened by Order dated October 26, 2010. Establishment of Atomic Safety and Licensing Board (Oct. 26, 2010) (ADAMS Accession No. ML102990281).

⁶ Earth Day Commitment/Friends of the Coast, Beyond Nuclear, Seacoast Anti-Pollution League, C-10 Research and Education Foundation, Pilgrim Watch, and New England Coalition; Notice of Receipt of Petition for Rulemaking, 75 Fed. Reg. 59158 (Sept. 27, 2010).

⁷ See *supra* note 5.

⁸ See Order NextEra Energy Seabrook, LLC, Docket No. 50-443-LR (Seabrook Station) (Sept. 17, 2010) (unpublished) (ADAMS Accession No. ML102600347).

⁹ See Order NextEra Energy Seabrook, LLC, Docket No. 50-443-LR (Seabrook Station) (Sept. 20, 2010) (unpublished) (ADAMS Accession No. ML102630577).

DISCUSSION

I. Standing to Intervene

A. Applicable Legal Requirements

The Commission's rules of practice provide:¹⁰ "[a]ny person¹¹ 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 which the person seeks to have litigated in the hearing." 10 C.F.R. § 2.309(a). In accordance with the regulations, the Board "will grant the request/petition if it determines that the requestor/petitioner has standing under the provisions of [10 C.F.R. § 2.309(d)] and has proposed at least one admissible contention that meets the requirements of [10 C.F.R. § 2.309(f)]." *Id.* 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] 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).¹²

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

¹¹ "Person" is defined as "(1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency other than the Commission . . . any State or any political subdivision of, or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and (2) any legal successor, representative, agent, or agency of the foregoing." 10 C.F.R. § 2.4.

¹² Any state, local governmental body (county, municipality or other subdivision), or any affected (continued. . .)

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.”

Sequoyah Fuels Corp. & Gen. Atomics (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 71 (1994) (citation and quotation omitted). The Commission explained that in order to determine whether a petitioner has demonstrated a personal stake in the outcome,

the Commission applies contemporaneous judicial concepts of standing. Accordingly, a 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.”

Id. at 71-72 (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992)).

In license renewal proceedings, standing may be based upon on a petitioner’s proximity to the facility at issue. *See, e.g., Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 & 3), LBP-08-13, 68 NRC 43, 60 (2008). Accordingly, “a petitioner is presumed to have standing to intervene without the need specifically to plead injury, causation, and redressability if the petitioner lives within 50 miles of the nuclear power reactor.” *Id.* (citing *Florida Power and Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 & 4), LBP-01-06, 53 NRC 138, 146 (2001), *aff’d on other grounds*, CLI-01-17, 54 NRC 3 (2001)).

An organization may establish its standing to intervene based on organizational standing (showing that its own organizational interest could be adversely affected by the proceeding), or representational standing (based on the standing of its members). *Florida Power and Light Co.*

(. . .continued)

Federally-recognized Indian Tribe that desires to participate as a party in a proceeding must submit a request for hearing/petition to intervene that meets the requirements of 10 C.F.R. § 2.309. In lieu of participating as a party, an interested state, local governmental body, or affected Federally-recognized Indian Tribe, may seek to participate pursuant to 10 C.F.R. § 2.315(c).

(Turkey Point Nuclear Generating Plant, Units 3 & 4), CLI-91-13, 34 NRC 185, 187 (1991). To show “organizational standing,” an organization must show a discrete institutional injury to itself, not just general environmental and policy interests. *Int’l Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001). When 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-00-06, 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, LLC* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999) (citing *Hunt v. Wash. State Apple Advertising Comm’n*, 432 U.S. 333, 343 (1977)).

B. FOTC/NEC’s Standing to Intervene

FOTC/NEC seeks representational standing.¹³ FOTC/NEC Petition at 3. FOTC is a non-profit corporation incorporated in Maine. *Id.* at 2. NEC is a non-profit corporation

¹³ FOTC/NEC also asserts that it qualifies for discretionary intervention under 10 C.F.R. § 2.309(e). Given that FOTC/NEC has provided sufficient information to establish standing under 10 C.F.R. § 2.309(d), there is no need to consider discretionary intervention.

incorporated in Vermont. *Id.* FOTC/NEC states that the purpose of both FOTC and NEC is to “oppose nuclear hazards and advocate sustainable energy alternatives to nuclear.” *Id.* at 3. FOTC/NEC states that both organizations have members who reside in the vicinity of Seabrook and attached affidavits from members to its Petition. *Id.* Five of the attached affidavits are from members of FOTC that authorize FOTC to represent them.¹⁴ One is from a member of NEC that authorizes NEC to represent her.¹⁵ Each individual's affidavit provides a home address and states the approximate distance from his or her home to Seabrook. All of the individuals represent that they reside within 50 miles of the plant, and that three of the five individuals reside 10 miles or less from Seabrook. Each affidavit also states health, safety and/or environmental concerns with relicensing of Seabrook. Accordingly, FOTC/NEC has provided sufficient information to establish representational standing in this proceeding.

C. Beyond Nuclear's Standing to Intervene

Beyond Nuclear, the Seacoast Anti-Pollution League and the New Hampshire Sierra Club seek representational standing in this proceeding. Beyond Nuclear Petition at 4. Beyond Nuclear states that it is a non-profit organization based in Takoma Park, Maryland, with members who live, work, and recreate within 50 miles of Seabrook. *Id.*

The Seacoast Anti-Pollution League states that it is a non-profit corporation incorporated in New Hampshire, with members residing within 50 miles of Seabrook, whose purpose is to “protect the health, safety and general well-being of the New Hampshire Seacoast community from nuclear pollution.” *Id.*

The New Hampshire Sierra Club is a non-profit corporation incorporated in New

¹⁴ See Attachments 1-5 to FOTC/NEC Petition.

¹⁵ See Attachment 6 to FOTC/NEC Petition.

Hampshire. *Id.* Sierra Club members “are working together to protect our environmental quality, and working for clean renewable energy for our communities in New Hampshire and beyond.” *Id.* at 5.

Each organization submitted affidavits from members. Two affidavits were submitted by members of Beyond Nuclear,¹⁶ one by a member of the New Hampshire Sierra Club,¹⁷ and seven by members of Seacoast Anti-Pollution League.¹⁸ Each affiant provides the address of his or her residence and states that his or her home is located within the “Emergency Planning Zone” for Seabrook. The affiants do not expressly authorize Beyond Nuclear, the Seacoast Anti-Pollution League, or the New Hampshire Sierra Club to represent them in the proceeding. However, an intent of the affiants to authorize one of these organizations to represent him or her may reasonably be inferred from the statement, “my interests will not be adequately represented without this action to intervene and without the opportunity of the Petitioner [referring to one of the three organizations] to participate as a full party in the proceeding on my behalf.” The affiants all state that they believe Seabrook’s application is inadequate; that if the safety and environmental concerns raised on their behalf are not addressed, the plant may pose an unacceptable risk to public health and safety and the environment; and that if an accident occurred at Seabrook, they “might [be] killed, injured or sickened by the radioactive releases.” Accordingly, Beyond Nuclear, Seacoast Anti-Pollution League, and the New Hampshire Sierra Club have provided sufficient information to show representational standing.

¹⁶ Declaration of Christopher Nod; Declaration of Kristie Conrad.

¹⁷ Declaration of Kurt Ehrenberg.

¹⁸ Declarations of Phyllis Killem-Abell, Patricia L. Warren, Douglas K. Bogan, Herbert S. Moyer, Virginia S. Cole, Lee Roberts, and David Diamond.

II. Admissibility of the Petitioners' Proposed Contentions

A. Legal Requirements for Contentions

1. General Requirements for Admissibility

The legal requirements governing the admissibility of contentions are well-established and set forth in 10 C.F.R. § 2.309(f) of the Commission's Rules of Practice.¹⁹ Specifically, in order to be admitted, a contention must satisfy the following requirements:

(f) Contentions. (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

¹⁹ These requirements substantially reiterate the requirements stated in former § 2.714, published in revised form in 1989. See Changes to Adjudicatory Process, 69 Fed. Reg. 2,182, 2,217 (Jan. 14, 2004); Statement of Considerations, "Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168 (Aug. 11, 1989), as corrected, 54 Fed. Reg. 39,728 (Sept. 28, 1989). Further, while § 2.714 was revised in 1989, those revisions did not constitute "a substantial departure" from then existing practice in licensing cases. 54 Fed. Reg. at 33,170-71; see also *Louisiana Energy Serv., L.P.* (Claiborne Enrichment Center), LBP-94-11, 39 NRC 205-07 (1994). Thus, while the 1989 amendments superseded, in part, the prior standards governing the admissibility of contentions, those standards otherwise remained in effect to the extent they did not conflict with the 1989 amendments. *Arizona Public Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 & 3), LBP-91-19, 33 NRC 397, 400 (1991).

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 petition 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).²⁰

The requirements governing the admissibility of contentions are "strict by design."

Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 249, 358 (2001), *petition for reconsideration denied*, CLI-02-01, 55 NRC 1 (2002).

Thus, they have been strictly applied in NRC adjudicatory proceedings, including license renewal proceedings. For example, in a recent license renewal decision, the Commission stated:

The requirements for admissibility set out in 10 C.F.R. § 2.309(f)(1)(i)-(vi) are "strict by design," and we will reject any contention that does not satisfy these requirements. Our rules require "a clear statement as to the basis for the contentions and

²⁰ Similarly, long-standing Commission precedent establishes that contentions may only be admitted in an NRC licensing proceeding if they fall within the scope of issues set forth in the *Federal Register* notice of hearing and comply with the requirements of former § 2.714(b) (subsequently restated in § 2.309(f)), and applicable Commission case law. See, e.g., *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Power Station, Units 1 & 2), CLI-02-14, 55 NRC 278, 289-90 (2002).

the submission of . . . supporting information and references to specific documents and sources that establish the validity of the contention.” Mere ‘notice pleading’ does not suffice.”

Contentions must fall within the scope of the proceeding – here, license renewal – in which intervention is sought.

AmerGen Energy Company, LLC (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 118-19 (2006) (footnotes omitted). In short, the contention admissibility rules require “a detailed, fact-based showing that a genuine and material dispute of law or fact exists.” *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-14, 55 NRC 278, 289 (2002).

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

- (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, ALAB-216, 8 AEC at 20-21.

The Commission has explained that it “toughened its contention rule in a conscious effort to . . . obviate serious hearing delays caused in the past by poorly defined or supported

contentions.” *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999). The Commission observed that prior to the revision of the rule, “[l]icensing Boards had admitted and litigated numerous contentions that appeared to be based on little more than speculation. Indeed, in practice, intervenors could meet the rule’s requirements merely by copying contentions from another proceeding involving another reactor.” *Id.* (internal quotation omitted). The petitioner in *Oconee* submitted a contention based on the fact that the Staff had requested additional information from the applicant. The petitioner submitted no documents, expert opinion, or fact-based argument in support of the contention, and the *Oconee* Board ruled the contention inadmissible. In upholding the Board, the Commission wrote:

It is surely legitimate for the Commission to screen out contentions of doubtful worth and to avoid starting down the path toward a hearing at the behest of Petitioner who themselves have no particular expertise – or expert assistance – and no particularized grievance, but are hoping something will turn up later as a result of NRC staff work.

Id. at 342.

An expert’s affidavit is not required to support every contention. The regulation governing admissibility requires an intervenor to present “a concise statement of the alleged facts or expert opinion” supporting the contention and “references to the specific sources and documents on which [the intervenor] intends to rely.” 10 C.F.R. § 2.309(f)(1)(v). For some contentions, materiality, specificity, and concreteness can be demonstrated by factual analysis or documentary evidence and no expert affidavit is required.

However, some contentions must be supported by an expert’s affidavit. Where a contention is based on a conclusory allegation, speculation or opinion, and the allegation, speculation, or opinion is not supported by an expert’s affidavit, boards have ruled those contentions inadmissible. *E.g., Private Fuel Storage, LLC* (Indep. Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 139-140 (2004). Similarly, where a contention seeks to

connect a set of facts with a specific result and that result is not self-evident, expert analysis is needed to bridge the gap. *E.g., Nuclear Mgmt. Co., LLC* (Palisades Nuclear Plant), LBP-06-10, 63 NRC 314, 352 (2006), *aff'd* CLI-06-17, 63 NRC 727 (2006). As the Board in *Georgia Tech* recognized, “it is the petitioner who is obligated to provide the analyses and expert opinion showing why its bases support its contention.” *Georgia Inst. of Tech.* (Georgia Tech Research Reactor), LBP-95-6, 41 NRC 281, 305 (1995). And that obligation must be satisfied when the petition is filed.

[T]he mere possibility . . . that Petitioner might in the future find an expert who could provide the assistance necessary to define clearly the issues in question and effectively litigate them, does not warrant admitting the contention at this stage of the proceeding, when we must rule on such questions of admissibility based on what has been provided to this point.

Nuclear Mgmt. Co., LLC (Palisades Nuclear Plant), CLI-06-17, 63 NRC 314, 352 n. 152 (2006).

2. Scope of License Renewal Proceedings

The Commission’s regulations in 10 C.F.R. Part 54²¹ limit the scope of a license renewal proceeding to the specific matters that must be considered for the license renewal application to be granted. Pursuant to 10 C.F.R. § 54.29, the Commission considers the following standards in determining whether to grant a renewed license:

A renewed license may be issued by the Commission up to the full term authorized by § 54.31 if the Commission finds that:

- (a) Actions have been identified and have been or will be taken with respect to the matters identified in Paragraphs (a)(1) and (a)(2) of this section, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB, and that any changes made to the plant’s CLB in order to comply with this paragraph are

²¹ See generally Nuclear Power Plant License Renewal, 56 Fed. Reg. 64,943 (Dec. 13, 1991) (“1991 License Renewal Rule”); Nuclear Power Plant License Renewal; Revisions, 60 Fed. Reg. 22,461 (May 8, 1995) (“1995 License Renewal Rule”).

in accord with the Act and the Commission's regulations. These matters are:

- (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under § 54.21(a)(1); and
 - (2) time-limited aging analyses that have been identified to require review under § 54.21(c).
- (b) Any applicable requirements of Subpart A of 10 C.F.R. Part 51 have been satisfied.
- (c) Any matters raised under § 2.335 have been addressed.

These standards, along with other regulations in 10 C.F.R. Part 54, and the environmental regulations related to license renewal set forth in 10 C.F.R. Part 51 and Appendix B thereto, establish the scope of issues that may be considered in a license renewal proceeding. A proposed contention must demonstrate that the issue it raises is within the scope of the proceeding or there are grounds for its dismissal. 10 C.F.R. § 2.309(f)(1)(iii); *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-05-24, 62 NRC 551, 567 (2005).

The Commission has provided guidance for license renewal adjudications regarding which safety and environmental issues fall within or beyond its license renewal requirements. See *Turkey Point*, CLI-01-17, 54 NRC at 6. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-14, 71 NRC __, __ (June 17, 2010) (slip op. at 4-8). With respect to the safety review, the Commission provided significant guidance on the structures, systems, components, within the scope of license renewal, as well as the intended functions of those structures, systems, and components that require aging management review in CLI-10-14. See *id.* Therein, the Commission stated, “aging management review for license renewal does not focus on all aging-related issues” *Id.* (slip op. at 5). The Commission explained that aging management review “focuses on

structures and components that perform ‘passive’ intended functions—with no moving parts or changes in configuration or properties—such as maintaining pressure boundary or structural integrity.” *Id.* Aging management review focuses on “passive” intended functions because the “[d]etrimental effects of aging on passive functions of structures and components are less apparent than aging effects on active function of structures and components.” *Id.* Not only is aging management review limited to the “passive” intended functions of structures and components, it is limited to structures, systems, and components of “principle importance to safety.” *Id.* Continuing, the Commission explained, that 10 C.F.R § 54.4(a)(1)-(3) defines the general scope of license renewal safety review; it defines the structures, systems, and components within the “initial focus” of license renewal review. *Id.* (slip op. at 7). Section 54.21, in turn, “provides the standards for determining which structures, systems, and components require aging management review.” *Id.* It limits aging management review to structures, systems, and components, that perform intended functions, as defined in § 54.4(a)(1)-(3) without moving parts or changes in configuration or properties. “For each structure or component requiring an aging management review [under § 54.21(a)(1)(i)] the license renewal application must demonstrate that the ‘effects of aging will be adequately managed so that the *intended function(s)* [as defined in § 54.4(a)(1)-(3)] will be maintained” *Id.* (slip op. at 8). Section § 54.4(b) also “makes clear that the ‘intended functions’ that [structures, systems, and components] ‘must be shown to fulfill’ in the aging management review required by § 54.21 ‘*are those functions . . . specified in paragraphs (a)(1)-(3) of § 54.4.*” *Id.* (slip op. at 16) (quoting 10 C.F.R. 54.4(b)) (emphasis and ellipses in original). Finally, the Commission expressly stated that 10 C.F.R. § 54.29, which lists the standards for issuance of a renewed license, does not expand the scope of license renewal aging management review beyond the intended functions outlined in § 54.4. *Id.* (slip op. at 17 n.71).

Furthermore, regardless of whether a license renewal application has been filed for a facility, the Commission has a continuing responsibility to oversee the safety and security of ongoing plant operations. It routinely oversees a broad range of operating issues under its statutory responsibility to assure the protection of public health and safety for operations under existing operating licenses. Therefore, for license renewal, the Commission has found it unnecessary to include a review of issues already monitored and reviewed in the ongoing regulatory oversight processes. *Id.* at 8-10.

The Commission has clearly indicated that its license renewal safety review focuses on “plant systems, structures, and components for which current [regulatory] activities and requirements *may* not be sufficient to manage the effects of aging in the period of extended operation.” *Id.* at 10 (quoting 60 Fed. Reg. at 22,469). Further, the Commission stated that: “Adjudicatory hearings in individual license renewal proceedings will share the same scope of issues as our NRC Staff review; for our hearing process (like our Staff’s review) necessarily examines only the [safety] questions our safety rules make pertinent.” *Id.* at 10.

In addition to its safety review, the NRC performs an environmental review pursuant to 10 C.F.R. Part 51 to assess the potential environmental impacts of twenty additional years of operation. *Turkey Point*, CLI-01-17, 54 NRC at 6-7. Contentions raising environmental issues in a license renewal proceeding are similarly limited to those issues which are affected by license renewal and have not been addressed by rulemaking or on a generic basis. *Turkey Point*, CLI-01-17, 54 NRC at 11-12. In 10 C.F.R. Part 51, the Commission divided the environmental requirements for license renewal into generic and plant-specific components. *Id.* at 11. The Generic Environmental Impact Statement (“GEIS”) contains “Category 1” issues for

which the NRC has reached generic conclusions.²² *Id.* Applicants for license renewal do not need to submit analyses of Category 1 issues in their Environmental Reports, but instead may reference and adopt the generic findings. *Id.* Applicants, however, must provide a plant-specific review of the non-generic "Category 2" issues. *Id.* Category 1 issues "are not subject to site-specific review and thus fall beyond the scope of individual license renewal proceedings." *Id.* at 12;²³ see 10 C.F.R. § 51.53(c)(3)(i)-(ii).

The Commission recently reiterated this principle, and specified that the GEIS Category 1 conclusions generally may not be challenged in a license renewal proceeding:

In 1996, the Commission amended the environmental review requirements in 10 C.F.R. Part 51 to address the scope of environmental review for license renewal applications. The regulations divide the license renewal environmental review into generic and plant-specific issues. The generic impacts of operating a plant for an additional 20 years that are common to all plants, or to a specific subgroup of plants, were addressed in a 1996 GEIS. Those generic impacts analyzed in the GEIS are designated "Category 1" issues. A license renewal applicant is generally excused from discussing Category 1 issues in its environmental report. Generic analysis is "clearly an appropriate method" of meeting the agency's statutory obligations under NEPA.

The license renewal GEIS determined that the environmental effects of storing spent fuel for an additional 20 years at the site of nuclear reactors would be "not significant." Accordingly, this finding was expressly incorporated into Part 51 of our regulations. Because the generic environmental analysis was incorporated into a regulation, the conclusions of that analysis may not be challenged in litigation unless the rule is waived by the Commission for a particular proceeding or the rule itself is suspended or altered in a rulemaking proceeding.

²² See NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," Final Report, (May 1996) (ADAMS Accession No. ML040690705) ("GEIS").

²³ In *Turkey Point*, the Commission recognized that "even generic findings sometimes need revisiting in particular contexts. . . . In the hearing process, for example, Petitioner with new information showing that a generic rule would not serve its purpose at a particular plant may seek a waiver of the rule." *Turkey Point*, CLI-01-17, 54 NRC at 12.

Entergy Nuclear Vermont Yankee, LLC & Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear Power Station), *Entergy Nuclear Generation Co. & Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-07-03, 65 NRC 13, 17 (2000) (footnotes omitted), *reconsidered*, CLI-07-13, 65 NRC 211, 214 (2007).

B. Admissibility of FOTC/NEC Contentions

The FOTC/NEC Petition contains four proposed contentions. The following summarizes those contentions and provides the Staff's response to each contention.

FOTC/NEC CONTENTION 1

1. Contention 1 Does Not Show a Genuine Dispute with the Application

FOTC/NEC Contention 1 states:

The license renewal application for Seabrook Station fails to comply with the requirements of § 54.21(a) and 54.29 because the applicant has not proposed an adequate or sufficiently specific plan for aging management of non-environmentally qualified inaccessible electric cables and wiring for which aging management is required. Without an adequate plan for aging management of non-environmentally-qualified inaccessible electric cables protection of public health and safety cannot be assured.

FOTC/NEC Petition at 10-11. In support of its contention, FOTC/NEC asserts that NextEra has failed to identify the location and extent of non-environmentally qualified inaccessible cable in use at Seabrook; failed to provide access to referenced documents ("EPRI TR-103834-P1-2" and "EPRI TR-109619"); failed to provide a copy of "Non-EQ Insulated Cables and Connections Program"; failed to address the recommendations from the referenced Sandia Report ("SAND96-0344"); and failed to address the recommendations in NUREG/CR 7000, "Essential Elements of an Electric cable Condition Monitoring Program." *Id.* at 12. FOTC/NEC alleges that there is no technical basis to support the life extension of existing cables without an aging management plan, and that there is no technical justification for differentiating between aging management for accessible cables and aging management of inaccessible cables. *Id.*

FOTC/NEC further alleges that the program description of NextEra's "Non-EQ Insulated Cables and Connections Program" is "impermissibly vague" and its limitation to "cables energized at the system voltage for more than 25% of the time" "defies engineering logic." *Id.* at 14-15. As explained below, Contention 1 is inadmissible because it does not show a genuine dispute with the application on a material issue of fact or law as required by 10 C.F.R. § 2.309(f)(1)(vi), and the October 29, 2010 supplement to the LRA submitted by NextEra²⁴ moots many of FOTC/NEC's claims.

a. LRA Supplement 1

On October 29, 2010, NextEra submitted a supplement to the Seabrook LRA. See LRA Supplement 1. NextEra amended Seabrook's "Inaccessible Medium-Voltage Cables Not Subject to 10 C.F.R 50.49 EQ Requirements" program to include in-scope inaccessible 400 volt or greater cables regardless of frequency of energization. See LRA Supplement 1 at Enclosure 2. In so doing, NextEra renamed the program the "Inaccessible Power Cables not Subject to 10 C.F.R. § 50.49 EQ Requirements" program. NextEra also increased the frequency of inspections such that the maximum time between inspections will be one year instead of two and increased the frequency of testing from once every ten years to once every six. *Id.* at 5, 6. NextEra clarified that the frequency of inspections will be based on plant-specific operating experience; that is, inspections will be performed based on operating experience as well as in response to events such as heavy rain or flooding. *Id.* at 6. Also in LRA Supplement 1, NextEra stated that Seabrook has tested all in-scope safety-related inaccessible cables of 400 volts or greater and the non-safety-related medium voltage cables. *Id.* at 9. All cables met the applicable test acceptance criteria. *Id.* As explained below, LRA Supplement 1 moots many of

²⁴ Letter from Paul Freeman, Site Vice President, to NRC (Oct. 29, 2010) (ADAMS Accession No. ML103060022)("LRA Supplement 1").

FOTC/NEC's claims.

b. Contention 1 Does Not Show a
Genuine Dispute with the Application

In order to show a genuine dispute with the application on a material issue, a petitioner must identify specific portions of the application where information is lacking and must provide *supporting reasons* for its belief that a material omission exists. 10 C.F.R. § 2.309(f)(1)(vi). A contention that fails to controvert the application or that mistakenly asserts the application does not address a relevant issue is subject to dismissal. *Sacramento Mun. Util. Dist.* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), *review declined*, CLI-94-2, 39 NRC 91 (1994); *Texas Utilities Elec. Co.* (Comanche Peak Steam Electric Station, Unit 2), LBP-92-37, 36 NRC 370, 384 (1992)).

FOTC/NEC does not show a genuine dispute with the application on a material issue of fact or law when it argues that NextEra's LRA: (1) fails to consider the recommendations in certain guidance documents referenced in the GALL Report and the GALL Report itself; (2) lacks specificity; (3) fails to include a copy of Seabrook's Non-EQ Insulated Cables and Connections Program; and (4) lacks an adequate technical basis.²⁵ NextEra's LRA contains two new aging management programs that address inaccessible electric cables: "Electric Cables

²⁵ For its part, the Blanch Affidavit, which accompanies and supports the FOTC/NEC Petition, mistakenly asserts, "A diligent review of the LRA and the NRC Staff's SER find no such Time Limited Aging Analysis (TLAA) or Aging Management Program (AMP); thus I am led to conclude that the LRA is inaccurate and incomplete with respect to TLAA or AMP for below-grade, buried, underground, or otherwise inaccessible safety-related electrical cable." Blanch Affidavit at ¶ 19. This assertion is incorrect because NextEra's LRA does include AMPs for electric cables and the Staff SER has not yet been issued. The statement is also directly contradicted by the petition it is intended to support, which quotes the description of NextEra's "Inaccessible Medium-Voltage Cables not Subject to 10 C.F.R. § 50.49 Environmental Qualification Requirements Program." FOTC/NEC Petition at 13-14. This inaccuracy, in addition to the Affidavit's references to the Indian Point LRA, the Vermont Yankee LRA, and the Staff's SER for Vermont Yankee (NUREG-1907) (*see, e.g.,* Blanch Affidavit at ¶ 7, 21) suggests that little if any weight should be given to the views expressed in the affidavit with respect to the sufficiency of NextEra's LRA.

and Connections Not Subject to 10 C.F.R. § 50.49 Environmental Qualification Requirements Program,” described in section B.2.1.32 of the LRA, and “Inaccessible Power Cables not Subject to 10 C.F.R. § 50.49 Environmental Qualification Requirements Program,” described in section B.2.1.34 and updated in LRA Supplement 1. The LRA states that both of these programs are consistent with programs described in the GALL Report (NUREG-1801) XI.E1 and XI.E2, respectively. See LRA at B-176, LRA Supplement 1 Enclosure 2 at 6.

The Commission has stated that a license renewal application may reference the GALL Report to demonstrate that the targeted aging effect will be adequately managed, and such a reference provides the requisite reasonable assurance for license renewal. *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23, 68 NRC 461, 468 (2008); *Entergy Vermont Yankee, LLC & Entergy Nuclear Operations, Inc.*, (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC __, __ (Jul. 8, 2010) (slip op. at 44-45). In other words, reference to the GALL provides an adequate technical basis for the program. The Commission clarified in *Vermont Yankee*, CLI-10-17, that a statement in the application that the program will be consistent with the GALL Report provides sufficient detail of what the program will entail to allow intervenors to challenge the adequacy of the applicant’s program. *Vermont Yankee*, CLI-10-17, 72 NRC__ (slip op. at 46).²⁶ Therefore, to the extent that FOTC/NEC is asserting that NextEra’s AMP lacks specificity because it does not discuss the recommendations in certain guidance documents referenced in the GALL Report and the GALL Report itself, does not include a copy of NextEra’s Non-EQ Insulated Cables and Connections Program, and lacks an adequate technical basis, FOTC/NEC has not shown a genuine dispute with the application on

²⁶ The Staff does not simply take the applicant’s word that its program is consistent with GALL. Instead, the Staff comes to its own independent conclusion based upon audits and responses to requests for additional information. See *id.* at __ (slip. op at 45-46).

a material issue of fact or law. The Commission has determined that such specificity is not required when an applicant references the GALL Report. Moreover, FOTC/NEC has not challenged the adequacy or technical basis of the AMPs described in the GALL Report. Rather, FOTC/NEC quotes substantially from the GALL Report. *Compare* FOTC/NEC Petition at 18-19 *with* GALL Report, Section XI.E3 at XI E-7. Therefore, FOTC/NEC has not shown a genuine dispute with the application on a material issue with respect to these claims.²⁷

FOTC/NEC also does not demonstrate contention admissibility when it argues that the LRA is deficient because it does not include documents referenced in the LRA that are not publicly available and fails to identify the location and extent of non-environmentally qualified inaccessible cables.²⁸ FOTC/NEC has provided no basis for its assertion that these “omissions” are material or that they show that NextEra failed to address a relevant issue. FOTC/NEC Petition at 12. Additionally, as discussed above, an applicant’s reference to the GALL Report and statement that its program will be consistent with the GALL Report provides sufficient detail.

²⁷ A contention nearly identical to this contention was filed in the *Indian Point* license renewal proceeding by the State of New York. *Compare* FOTC/NEC Petition at 10-19 and Blanch Affidavit *with* New York State Notice of Intention to Participate and Petition to Intervene, at 92-100 (Nov. 30, 2007) (ADAMS Accession No. ML073400187) (“NYS Petition”) and Attached Declaration of Paul Blanch (Nov. 28, 2007) (ADAMS Accession No. ML073400205). The *Indian Point* Board admitted the contention on the grounds that the applicant’s statement that it would implement an AMP consistent with the GALL Report was inadequate to demonstrate that aging will be adequately managed during the period of extended operation, as required by 10 C.F.R. § 54.21(a). *Indian Point*, LBP-08-13, 68 NRC at 85-86. The *Indian Point* Board ruling, however, was prior to the Commission’s decisions in *Oyster Creek*, CLI-08-23 and *Vermont Yankee*, CLI-10-17, discussed in the text above. Furthermore, a comparison of Indian Point’s license renewal application and Seabrook’s shows that Seabrook’s application, particularly in light of LRA Supplement 1, provides substantially greater detail with respect to aging management of inaccessible non-environmentally qualified cables than Indian Point’s application. *Compare* Indian Point License Renewal Application at B.1.23 and B.1.25 (ADAMS Accession No. ML071210523) *with* Seabrook LRA at B.2.1.34, as updated in LRA Supplement 1, Enclosure 2.

²⁸ The Staff notes that FOTC/NEC’s claim of having made a “diligent search” is identical to the State of New York’s claim of having made the same diligent search in its petition. See NYS Petition at 93-94. EPRI TR-109619 has been publicly available at ADAMS Accession No. ML003727052 since August 9, 2000. This fact was noted in the Indian Point applicant’s answer to the NYS Petition. See Answer of Entergy Nuclear Operations, Inc. Opposing New York State Notice of Intention to Participate and Petition to Intervene (Jan. 22, 2008) at 67 (ADAMS Accession No. ML080300149).

See *Vermont Yankee*, CLI-10-17, 72 NRC at ___ (slip op. at 46); *Oyster Creek*, CLI-08-23, 68 NRC at 468. FOTC/NEC's belief that having these documents would make its review of the LRA easier does not support an admissible contention.

FOTC/NEC also incorrectly argues that NextEra's AMP for non-environmentally qualified medium voltage cables is insufficient because it does not include testing. See FOTC/NEC Petition at 17-19. This argument is incorrect based on either the original LRA (which contained a program for testing inaccessible medium voltage cables) or LRA Supplement 1 (which expanded the program to include inaccessible cables with voltages of 400 volts or more). NextEra's description of its AMP for non-environmentally qualified inaccessible electric cables explicitly states that in addition to inspections (which will occur at least every year), testing of cables will be performed prior to the period of extended operation and at least every six years during the period of extended operation using a proven method for detecting deterioration, such as power factor, partial discharge, or polarization index, as described in EPRI-TR-103834-P1-2. LRA Supplement 1, Enclosure 2 at 6; LRA at B-181.²⁹ In other words, NextEra's AMP does not rely on in-service testing, but on testing procedures designed to detect deterioration of cable insulation. FOTC/NEC's inaccurate assertion does not show a genuine dispute with the application.

Next, FOTC/NEC's quotations from Generic Letter (GL) 2007-01 "Inaccessible or Underground Cable Connections that Disable Accident Mitigation Systems or Cause Plant Transients" and NUREG/CR 7000 do not show a genuine dispute with the application on a

²⁹ In addition, FOTC/NEC's Petition incorrectly claims that the LRA states, "Experience indicates that not all inaccessible cables are capable of inspection via 'manholes.'" Such a statement does not appear in the LRA. This assertion is identical to an assertion made by the State of New York in support of a nearly identical contention submitted in the Indian Point proceeding, but with a specific reference to Indian Point's license renewal application. See NYS Petition at 94.

material issue. Neither FOTC/NEC's Petition nor the Blanch Affidavit explains how either GL-2007-01 or NUREG/CR-7000 shows that NextEra's AMPs are insufficient.³⁰ In fact, NextEra describes its response to GL 2007-01 in the LRA, including the fact that Seabrook has not had any failures of cables within the scope of the maintenance rule. See LRA at B-183; LRA Supplement 1 Enclosure 2 at 9. Moreover, NextEra's expansion of its "Inaccessible Power Cables Not Subject to 10 CFR 50.49 EQ Requirements" program in LRA Supplement 1 to include in-scope inaccessible cables of 400 volts or greater for inspection and testing without regard to whether the cables are exposed to system voltage is consistent with proposed revisions to the GALL Report, which explicitly consider licensee responses to GL 2007-01. See NUREG-1801 Rev. 2—Draft Report for Comment at XI.E3 (April 2010) (ADAMS Accession No. ML101320104). Therefore, NextEra's expansion of this AMP moots FOTC/NEC's assertion that the AMP is insufficient because it is limited to cables energized at system voltage at least 25% of the time or because it does not consider the recommendations of GL 2007-01.

Finally, FOTC/NEC does not demonstrate a genuine dispute with the application with its assertion that Seabrook "must replace all cables (and splices) that have been exposed to moisture or develop a comprehensive plan to preclude moisture and adequately test all cables that have been exposed to moisture." FOTC/NEC's assertion is not supported by the documents cited in the Petition or the attached Blanch Affidavit, and bare assertions without documentary or expert support are insufficient to support a contention. See, e.g., *Private Fuel*

³⁰ Although cables are within the scope of license renewal, wetting and submergence of electric cables is also a current operating issue. GL 2007-01, NUREG/CR 7000, and Draft Regulatory Guide DG-1240 "Condition Monitoring Program for Electric Cables Used in Nuclear Power Plants" (June 2010) (ADAMS Accession No. ML100760364) all reflect that wetting and submergence of cables are current operating issues. Each document outlines that, in accordance with requirements in 10 C.F.R. Part 50, licensees must test and maintain safety-related electric cables to ensure that they can perform their intended functions, and the NRC's ongoing oversight of licensee operations verifies licensee compliance. See 10 C.F.R. § 50.63(a)(1), 10 C.F.R. Part 50 Appendix B, Criterion XI and XVI.

Storage, CLI-04-22, 60 NRC at 139-140. Moreover, conclusory assertions, even by experts, are insufficient to support an admissible contention, and this assertion is not even made by FOTC/NEC's expert. See *USEC Inc. (American Centrifuge Plant)*, CLI-06-10, 63 NRC 451, 472 (2006) (stating that expert opinions must provide a reasoned basis and opinions that merely state a conclusion do not support an admissible contention). Finally, NextEra's AMP for inaccessible cables, as described in LRA Supplement 1, includes testing at least every six years, and inspection of inaccessible cables, with inspection frequencies based on operating experience as well as in response to events such as heavy rain or flooding to minimize the exposure of cables to moisture. LRA Supplement 1 Enclosure 2 at 6. LRA Supplement 1 also states that NextEra has tested all in-scope safety-related inaccessible cables of 400 volts or greater and the non-safety-related medium voltage cables, and has never had failure of cable within the scope of the maintenance rule. *Id.* at 9. Thus, FOTC/NEC's assertion does not support admission of Contention 1.

FOTC/NEC CONTENTION 2

2. Contention 2 Is Outside the Scope of this Proceeding, Lacks an Adequate Basis, and Does Not Establish a Genuine Dispute With the Application

FOTC/NEC Contention 2 reads:

The LRA for Seabrook violates 10 C.F.R. §§ 54.21(a) and 54.29 because it fails to include an aging management plan for each electrical transformer whose proper function is important for plant safety.

FOTC/NEC Petition at 20. In support of its contention, FOTC/NEC states that “[t]ransformers function without moving parts or without a change in configuration or properties as defined in that regulation” and that there are “numerous electrical transformers” that perform a function described in § 54.4(a). *Id.* FOTC/NEC further asserts it is “well known that many transformers perform functions described in 10 C.F.R. Part 54 and are passive devices in that they contain no moving parts and do not undergo a change of properties or state.” *Id.* at 22. In the very next

sentence, however, FOTC/NEC states, “transformers are active devices within the scope of 10 C.F.R. 54.4.” *Id.*

FOTC/NEC asserts that because transformers are within the scope of 10 C.F.R. § 54.4, they require aging management, and NextEra failed to include an AMP for transformers. In support of this assertion, FOTC/NEC states that “Appendix A, Page A-35 of the UFSAR supplement” describes a Structures Monitoring Program that includes “transformer/switchyard support structures” and notes that the program does not include transformers.” *Id.* at 21. FOTC/NEC also asserts that the LRA discusses the need for an AMP for “transformer support structures.” *Id.*

For the reasons discussed below, Contention 2 is inadmissible because it is outside the scope of this proceeding, lacks an adequate basis, and does not show that a genuine material factual dispute exists with the Application.³¹

a. Contention 2 Is Outside the Scope of License Renewal

Contention 2 is inadmissible because it is outside the scope of the license renewal proceeding. As previously noted, the standards under 10 C.F.R. § 54.29, along with other

³¹ The Staff recognizes that Contention 2 is similar to a contention submitted by the State of New York in the *Indian Point* proceeding. Compare FOTC/NEC Petition at 20 with NYS Petition at 103. Contention 2 is also similar to a contention submitted by the Prairie Island Indian Community in the *Prairie Island* proceeding, which appears to have been based on the contention submitted in *Indian Point*. See Prairie Island Indian Community’s Notice of Intent to Participate and Petition to Intervene, at 36 (Aug. 18, 2008) (ADAMS Accession No. ML0823910380). In *Prairie Island*, the Petitioner withdrew the contention in acknowledgement of the Staff’s established position that transformers are active components. *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 & 2), LBP-08-26, 68 NRC 905, 945-46 (2008). The *Indian Point* Board admitted the contention. *Indian Point*, LBP-08-13, 68 NRC at 89. In doing so, the Board noted that neither the applicant nor the NRC Staff had adequately justified their position that transformers are excluded from AMR, nor had they “provided any explanation on how a transformer changes its configuration or properties in performing its functions.” *Id.* Additionally, the contention itself was supported by references to specific portions of the *Indian Point* application. See NYS Petition at 104. The Board admitted the contention only “to the extent that it questions the need for an AMP for safety-related electrical transformers that are required for compliance with 10 C.F.R. §§ 50.48 and 50.63.” *Indian Point*, LBP-08-13, 68 NRC at 89.

regulations in 10 C.F.R. Part 54, and the environmental regulations related to license renewal set forth in 10 C.F.R. Part 51 and Appendix B thereto, establish the scope of issues that may be considered in a license renewal proceeding. A proposed contention must demonstrate that the issue it raises is within the scope of the proceeding, or there are grounds for its dismissal. 10 C.F.R. § 2.309(f)(1)(iii); *Millstone*, CLI-05-24, 62 NRC at 567.

Contention 2 is based on the false premise that “[t]ransformers function without moving parts or without a change in configuration or properties as defined in [§ 54.4].”³² FOTC/NEC Petition at 20. FOTC/NEC offers no factual support beyond bare assertion to support the claim that transformers function without a change in configuration or properties. While § 54.4(a)(1)-(3) identify structures, systems, and components (“SSCs”) within the scope of Part 54, 10 C.F.R. § 54.21(a)(1) narrows the scope of aging management review to SSCs that perform their § 54.4(a)(1)-(3) functions *without* moving parts or a change in configuration or properties. SSCs that perform their § 54.4(a)(1)-(3) intended functions *with* moving parts or a change in function require no aging management review. See *Pilgrim*, CLI-10-14, 71 NRC at ___ (slip op. at 5-8).

In its revisions to the License Renewal Rule, the Commission discussed what it meant when it used the terms “active” and “passive.” *1995 License Renewal Rule*, 60 Fed. Reg. at 22,477. In response to industry confusion regarding the meaning of the term “passive,” the Commission developed a description of “passive” characteristics of structures and components.

³² FOTC/NEC’s reference to 10 C.F.R. § 54.4 is incorrect; that regulation does not define or discuss functioning without moving parts, changing properties, or changing configuration. The regulation that discusses these attributes is 10 C.F.R. § 54.21(a)(1). It states that structures and components subject to an aging management review shall encompass those structures and components that perform an intended function, as defined in § 54.4(a)(1)-(3), without moving parts or without a change in configuration or properties. A component that performs an intended function, as defined in § 54.4(a)(1)-(3), but does so with moving parts or with a change in configuration or properties, is not subject to aging management review. In other words, components within the scope of license renewal review, pursuant to § 54.4, may be screened out by § 54.21(a)(1).

Id. To be passive, the structure or component must: (1) have no means of readily monitoring its degradation, and (2) perform its intended function without moving parts or without a change in configuration or properties. *Id.* For example, the Commission considered a battery *not* to be a passive component because it changes its electrolyte properties during the performance of its intended function and because the performance of a battery (supplying DC electric current and voltage) is readily monitored. *Id.* The Commission concluded that a change in configuration or properties should be interpreted to include a change in state, even though the term “change of state” is sometimes used as relating to “passive.” *Id.* In another example, the Commission concluded that a transistor³³ can change its state and is therefore not passive even though it has no moving parts and does not chemically change. *Id.* The Commission identified power inverters and power supplies as additional examples of non-passive electrical items. *Id.*; see also *Pilgrim*, CLI-10-14, 71 NRC at ___ (slip op. at 5 n.17) (“Examples of structures or components that perform “active” functions are pumps and valves (which have moving parts), an electrical relay (which can change its configuration), and a battery (which changes its electrolyte properties when discharging)).

Consistent with the Commission’s statements of consideration, the Staff has provided guidance to the industry on distinguishing between active and passive components. In Regulatory Guide 1.188, “Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses,” the Staff discussed the information required in an application for renewal of a nuclear power plant operating license. Reg. Guide 1.188 at 1.188-2 (July 2001) (ADAMS Accession No. ML012010322). Therein the Staff documented its review and

³³ A transistor is defined as “(1) an active semiconductor device with three or more terminals. It is an analog device. (2) A semiconducting device for controlling the flow of current between two terminals, the emitter and the collector, by means of variations in the current flow between a third terminal, the base, and the other two.” EEE 100, *Authoritative Dictionary of IEEE Standard Terms* 125 (7th ed. 2000).

acceptance of the industry guideline Nuclear Energy Institute (NEI) NEI 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 – The License Renewal Rule," Rev. 3 (Mar. 2001) (ADAMS Accession No. ML0111100576). *Id.* at 1.188-3. As documented in NEI 95-10, Appendix B "Typical Structure, Component, And Commodity Groupings And Active/Passive Determinations For The Integrated Plant Assessment," transformers (*e.g.*, instrument transformers, load center transformers, small distribution transformers, large power transformers, isolation transformers, coupling capacitor voltage transformers) are not part of a commodity group subject to an aging management review in accordance with 10 C.F.R. § 54.21(a)(1)(i). NEI-95-10, Appendix B at B-14.

The Staff explained why transformers are not passive components:

Transformers perform their intended function through a change in state by stepping down voltage from a higher to a lower value, stepping up voltage to a higher value, or providing isolation to a load. Transformers perform their intended function through a change in state similar to switchgear, power supplies, battery chargers, and power inverters, which have been excluded in §54.21(a)(1)(i) from an aging management review. Any degradation of the transformer's ability to perform its intended function is readily monitorable by a change in the electrical performance of the transformer and the associated circuits. Trending electrical parameters measured during transformer surveillance and maintenance such as Doble test results, and advanced monitoring methods such as infrared thermography, and electrical circuit characterization and diagnosis provide a direct indication of the performance of the transformer. Therefore, transformers are not subject to an aging management review.

Letter from Christopher I. Grimes, NRC, to Douglas J. Walters, Nuclear Energy Institute (Sept. 19, 1997) *in* NEI 95-10, Appendix C, "References" at C-11.³⁴ This interpretation is consistent with the Statements of Consideration that accompanied the promulgation of the license renewal

³⁴ C-9 to C-14 provided the NRC's Determination Of Aging Management Review For Electrical Components. Letter from Christopher I. Grimes, NRC, to Douglas J. Walters, Nuclear Energy Institute (Sept. 19, 1997). In the letter from C. Grimes to D. Walters, the NRC Staff recommended revising in part Appendix B of NEI 95-10 to indicate that transformers do not require an aging management review. NEI 95-10 Rev. 3 at App. C-14. NEI 95-10 captures this recommendation. NEI 95-10, Appendix B at B-14.

rule. NEI 95-10, Appendix C at C-10 (citing 60 Fed. Reg. at 22,477). Consequently, consistent with the Commission's statements of consideration for the 1995 rulemaking and long-standing NRC Staff policy, transformers are active components as described in 54.21(a)(i), and thus no aging management review and no aging management program is required.

Furthermore, under the NRC's well-established rules, contentions that advocate stricter requirements than agency rules impose, or that otherwise seek to litigate a generic determination established by a Commission rulemaking, are inadmissible. *See, e.g., Southern Nuclear Operating Co. (Early Site Permit for Vogtle ESP Site), LBP-07-03, 65 NRC 237, 252 (2007)*. The Statement of considerations for the 1995 revisions to the license renewal rule and Staff guidance indicate that, pursuant to 10 C.F.R. § 54.21(a)(1)(i), transformers are not subject to an aging management review. Accordingly, contrary to the unsupported assertion of FOTC/NEC, there is no requirement for the Application to list transformers as a commodity group subject to an aging management review, or to develop an AMP for transformers. Therefore, Contention 2 is inadmissible because it seeks to litigate an issue that is outside the scope of this license renewal proceeding.

b. Contention 2 Lacks an Adequate Factual Basis

Contention 2 is also inadmissible because its conclusion that NRC regulations require an AMP for electrical transformers is unsupported by adequate facts or expert opinion. As noted above, to present an admissible contention, a petitioner must:

[p]rovide 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[.]

10 C.F.R. § 2.309(f)(1)(v). The Commission has stated that “[m]ere ‘notice pleading’ is insufficient under these standards.” *Fansteel, Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)*. A petitioner meets its pleading burden by providing “plausible and

adequately supported claims.” *Id.* While the Commission does not “expect a petitioner to prove its contention at the pleading stage,” the Commission does require a petitioner to “show a genuine dispute warranting a hearing.” *Private Fuel Storage*, CLI-04-22, 60 NRC at 139. Thus, a petitioner, and its expert, must demonstrate how the relied-upon facts support its contention. *See id*; *see also USEC Inc. (American Centrifuge Plant)*, CLI-06-09, 63 NRC 433, 442-43 (2006) (dismissing as inadequate support expert testimony that merely outlined future research and did not describe any facts on a project’s impacts to support an “impacts” contention); *S. Carolina Elec. & Gas Co. (Virgil C. Summer Nuclear Station, Units 2 & 3)*, CLI-10-01, 71 NRC __, __ (Jan. 7, 2010) (slip op. at 22 n.84) (finding an expert opinion offering “unsupported assertions” and failing to provide a specific challenge to the applicant’s analysis insufficient for admissibility purposes).

FOTC/NEC asserts that the LRA is deficient because it fails to include an aging management plan for electrical transformers. FOTC/NEC Petition at 20. However, to demonstrate a deficiency in the LRA, FOTC/NEC and the Blanch Affidavit offered in support of the contention provide nothing beyond bare assertions that transformers function without a change in configuration or properties, so as to require an aging management plan. FOTC/NEC and the Blanch Affidavit simply assert that “[t]ransformers function without moving parts or without a change in configuration or properties,” and declare that it is “well known” that transformers are “passive devices in that they contain no moving parts and do not undergo a change of properties or state.” *Id.* at 20, 22; Blanch Affidavit at 11-12. The very next sentences of both the FOTC/NEC Petition and the Blanch Affidavit, however, acknowledge that transformers are “active devices.” FOTC/NEC Petition at 22; Blanch Affidavit at 12.

The only supporting evidence for FOTC/NEC’s position that transformers require aging management is an unidentified determination by “the staff” that discusses subjecting to aging management review the passive structures and components of the plant system portion of the

offsite power system. *Id.* Although no source is cited for this passage, it appears to be taken verbatim from a summary of a September 21, 2007 conference call regarding Indian Point Nuclear Generating Station.³⁵ FOTC/NEC offers this excerpt without explaining its relevance to this proceeding or how it might serve to demonstrate that electrical transformers themselves are passive devices subject to the requirement of an AMP. Furthermore, this passage does not even stand for the proposition that Indian Point's safety-related electrical transformers required an AMP. The excerpt was first quoted in a pleading related to the license renewal application submitted by Entergy Nuclear for Indian Point.³⁶ In its response to the pleading, the NRC Staff noted that the New York Attorney General had selectively quoted from the conference call summary and had misunderstood the question proposed by the Staff in the RAI.³⁷ The RAI did not ask whether an aging management review ("AMR") is required for "each electrical transformer whose proper function is important for plant safety," but instead sought information on what components in the fire protection systems were out of the scope of license renewal. The remainder of the draft RAI shows that the Staff did not imply or assert that an AMP for a transformer was needed.³⁸ Here, FOTC/NEC's and its expert's mere opinion that transformers

³⁵ See Summary of Telephone Conference Call Held on September 21, 2007, between The U.S. Nuclear Regulatory Commission And Entergy Nuclear Operations, Inc., Concerning Draft Requests for Additional Information Pertaining to The Indian Point Nuclear Generating Unit Nos. 2 & 3, License Renewal Application, at 10 (Oct. 16, 2007) (ADAMS Accession No. ML072770605) ("Draft RAI").

³⁶ See NYS Petition at 105.

³⁷ NRC Staff's Response to Petitions for Leave to Intervene Filed by (1) Connecticut Attorney General Richard Blumenthal, (2) Connecticut Residents Opposed to Relicensing of Indian Point, and Nancy Burton, (3) Hudson River Sloop Clearwater, Inc., (4) the State of New York, (5) Riverkeeper, Inc., (6) the Town of Cortlandt, and (7) Westchester County, at 44-45 (Jan. 22, 2008) (ADAMS Accession No. ML080230543) (internal citations omitted).

³⁸ *Id.* The draft RAI went on to say:

(continued. . .)

function without moving parts or without a change in configuration as defined in the regulation does not support an admissible contention. This is particularly the case when, as discussed above, the petitioner is challenging a long-standing NRC Staff position that is supported by the statement of considerations of the regulation.

Finally, as the above discussion shows, the Blanch Affidavit does not actually serve to support the contention. Contentions based on conclusory allegations or opinions, and lacking expert support, are inadmissible. See, e.g., *Private Fuel Storage*, CLI-04-22, 60 NRC at 139-140. Moreover, when a contention seeks to connect a set of facts with a specific result and that result is not self-evident, expert analysis is needed to bridge the gap. See, e.g., *Palisades Nuclear Plant*, LBP-06-10, 63 NRC at 352, *aff'd* CLI-06-17, 63 NRC 727 (2006). As the Board in *Georgia Tech* recognized, "it is the petitioner who is obligated to provide the analyses and expert opinion showing why its bases support its contention." *Georgia Tech*, LBP-95-6, 41 NRC at 305. This obligation must be satisfied at the time the petition is filed. See *Palisades*, LBP-06-10, 63 NRC at 352 n.152.

The Blanch Affidavit adds no meaningful information to what is already contained in the FOTC/NEC Petition itself.³⁹ The declaration repeats word-for-word the language contained in

(. . .continued)

According to the above, both paths, from the safety-related 480 Volt (V) buses to the first circuit breaker from the offsite line, used to control the offsite circuits to the plant should be age managed. The guidance does not specify that the switchyard is not part of the plant system nor that the switchyard does not need to be included in the scope of license renewal. Explain in detail which high voltage breakers and other components in the switchyard will be connected from the startup transformers up to the offsite power system for the purpose of SBO recovery.

Draft RAI at 10.

³⁹ Mr. Blanch's declaration on Contention 2 differs from the FOTC/NEC's proposed Contention 2 (continued. . .)

FOTC/NEC Contention 2. See Blanch Affidavit at 11-13. As the Commission has stated, “an expert opinion that merely states a conclusion (e.g., the application is ‘deficient,’ ‘inadequate,’ or ‘wrong’) without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion” *USEC Inc.*, CLI-06-10, 63 NRC at 472. Here, the Blanch Affidavit merely parrots the conclusory statements contained in FOTC/NEC’s Petition. Compare Blanch Affidavit at 11, 12 with FOTC/NEC Petition at 20, 22. Mr. Blanch does not provide any explanation or reasoned basis for his statement that electrical transformers function without moving parts or a change in state as defined in the regulation, nor does he offer an opinion as to why transformers are considered passive devices within the meaning of 10 C.F.R. § 54.21(a)(1). See *id.*

Taken together, FOTC/NEC’s and the Blanch Affidavit’s assertions that transformers are passive components do not “set forth the necessary technical analysis to show why the proffered bases support its contention.” See *Calvert Cliffs 3 Nuclear Project* (Calvert Cliffs Nuclear Power Plant, Unit 3), LBP-09-4, 69 NRC 170, 216 (2009) (quoting *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), LBP-06-23, 64 NRC 257, 355 (2006)). FOTC/NEC has not provided any meaningful facts or analysis demonstrating that NRC regulations require an AMP for safety-related transformers, and the information provided is general and nonspecific to the Seabrook plant.⁴⁰ Furthermore, FOTC/NEC has not provided

(. . .continued)

in only one respect: the addition of a paragraph describing NextEra’s practice of characterizing cables by commodity grouping and the LRA’s failure to include drawings of the locations of these cables. Blanch Affidavit at 11-13. Needless to say, this paragraph does not provide any information relevant to the FOTC/NEC’s proposed Contention 2, as it was presumably intended to support FOTC/NEC’s proposed Contention 1 on inaccessible cables.

⁴⁰ See *Palisades*, LBP-06-10, 63 NRC at 352 (finding a contention deficient for lacking expert support for allegations specific to the Palisades plant, failing to refer to documents or sources on which (continued. . .)

references to any regulation or Commission decision that would invalidate the Staff's long-standing position, based on the Commission's statement of considerations for the 1995 revision to Part 54, that 10 C.F.R. § 54.21(a)(1)(i) does not require aging management review of transformers. Therefore, Contention 2 does not meet the requirements for admissibility set forth in 10 C.F.R. § 2.309(f)(1)(v).

c. Contention 2 Does Not Establish a Genuine Dispute With the Application

Finally, Contention 2 is inadmissible because FOTC/NEC's references to the incorrect UFSAR supplement and LRA do not provide information to show that a genuine dispute exists with the application on a material issue of law or fact. Previous Boards have recognized that "a contention that fails directly to controvert the license application at issue or that mistakenly asserts the application does not address a relevant issue is subject to dismissal." *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-07, 47 NRC 142, 181 (1998); *see also Indian Point*, LBP-08-13, 68 NRC at 64. A petitioner must refer to the specific portions of the application that are in dispute, or, if alleging that the application omits relevant information as required by law, must identify each failure and the supporting reasons for that belief. 10 C.F.R. § 2.309(f)(1)(vi).

Here, with respect to Contention 2, FOTC/NEC has only cited to specific portions of the Indian Point license renewal application – not the Seabrook Application – and so the FOTC/NEC Petition has not actually controverted the license application *at issue*. *See Private Fuel Storage*, LBP-98-07, 47 NRC at 181. FOTC/NEC claims that "Appendix A, Page A-35 of

(. . .continued)

petitioners planned to rely at hearing, and providing only facts that were "general and nonspecific to the Palisades plant").

the UFSAR supplement describes a Structures Monitoring Program that includes a program for monitoring ‘transformer/switchyard support structures’, and contends that “there is no APM [sic] described for transformers” in the Applicant’s application. FOTC/NEC Petition at 21. However, neither the cited pages, nor NextEra’s LRA for Seabrook as a whole, contain the information purportedly identified by FOTC/NEC. FOTC/NEC further asserts that “[t]he LRA also discusses the need for an AMP for ‘transformer support structures’ based on the criterion of 10 C.F.R. § 54.4(a)(3).” *Id.* Again, NextEra’s LRA for Seabrook does not reveal the language quoted by FOTC/NEC or any such discussion regarding the need for a transformer support structures AMP.

Notably, these statements correspond to those made by the New York State Attorney General in response to a license renewal application submitted for Indian Point Units 2 and 3. See NYS Petition at 103-05. Statements in the NYS Petition also refer to “Appendix A, Page A-35 of the UFSAR supplement,” which “describes a Structures Monitoring Program that includes a program for monitoring ‘transformer/switchyard support structures,’ that “there is no APM [sic] described for transformers” in the Indian Point application, and that the Indian Point LRA “also discusses the need for an AMP for ‘transformer support structures’ based on the criterion of 10 C.F.R. § 54.4(a)(3).” NYS Petition at 104. These statements and references are identical to those in FOTC/NEC’s contention. *Compare* NYS Petition at 103-105; FOTC/NEC Petition at 20-22.

As previously discussed, the requirements governing the admissibility of contentions are “strict by design.” *Millstone*, CLI-01-24, 54 NRC at 358. The Commission promulgated the current strict contention admissibility standards as a response to the prior common practice of merely “copying contentions from another proceeding involving another reactor” to ensure that “only intervenors with genuine and particularized concerns” participate in NRC hearings. *Oconee*, CLI-99-11, 49 NRC at 334. The copying of the Indian Point contention’s references to

the Indian Point LRA may have been inadvertent, but the effect is to render the present contention without reference to the Seabrook application at issue. See *id.* at 335. Because FOTC/NEC has not provided sufficient information to show that a genuine material factual dispute exists with the Applicant, Contention 2 does not meet the requirements for admissibility under 10 C.F.R. § 2.309(f)(1)(vi).

FOTC/NEC Contention 3

3. Contention 3 is Overly Broad, Out of Scope, Unsupported, and Does not Demonstrate a Genuine Dispute with the Application

FOTC/NEC Contention 3 reads:

The aging management plan contained in the license renewal application violates 10 C.F.R. §§ 54.21 and 54.29(a) because it does not provide adequate inspection and monitoring for corrosion, structural failure, degradation, or leaks in all buried systems, structures, and components that may convey or contain radioactively-contaminated water or other fluids and/or may be important to plant safety.

FOTC/NEC Petition at 22-23.

In support of Contention 3, FOTC/NEC asserts that NextEra's license renewal application is inadequate because: (1) it does not provide for adequate inspection of structures, systems, and components, that may contain or convey water, radioactive water, and/or fluids; (2) there is no adequate leak prevention or detection program designed to replace such systems, structures, and components before leaks occur; (3) there is no adequate monitoring system to determine if and when leakage from these systems occurs; and (4) the application does not specify the piping systems and tanks covered by this AMP. *Id.* at 23. As explained below, Contention 3 is inadmissible because it is overly broad, outside the scope of the proceeding, lacks an adequate factual basis, and does not raise a genuine dispute with the application on a material issue of fact or law.

a. Contention 3 is Overly Broad and Lacks Reasonable Specificity

Contention 3 is inadmissible because it is overly broad and lacks the "reasonable

specificity” required by 10 C.F.R. § 2.309(f)(1)(i). The contention does not identify a single specific structure, system, or component at Seabrook, but rather purports to encompass “all buried systems, structures, and components that may convey or contain radioactively-contaminated water or other fluids and/or may be important to plant safety.” FOTC/NEC Petition at 22-23. In its supporting discussion and in the attached Blanch Affidavit, FOTC/NEC refers to buried piping and tanks, seven systems containing piping, the refueling cavity, the spent fuel pool, and transfer canals. *Id.* at 24. From this it is unclear which systems, structures, or components FOTC/NEC believes are within the scope of this contention. Thus, in attempting to encompass all SSCs that may or may not convey radioactively contaminated water and may or may not be important to plant safety, FOTC/NEC does not provide the requisite specificity required by 10 C.F.R. § 2.309(f)(1)(i), which requires intervenors to “provide a specific statement of fact or law to be raised or controverted.”

b. Contention 3 is Outside the Scope of this Proceeding

Section 2.309(f)(1)(iii) requires the petitioner to demonstrate that its contention is within the scope of the proceeding. Contentions that are not within the scope of the proceeding must be rejected. *Millstone*, CLI-05-24, 62 NRC at 567 (2005). Contrary to § 2.309(f)(1)(iii), FOTC/NEC does not demonstrate that Contention 3 is within the scope of the license renewal proceeding. As discussed above, the scope of license renewal review is limited, and the scope of admissible contentions is limited to the scope of license renewal review. *See Turkey Point*, CLI-01-17, 54 NRC at 10. Section 54.4(a)(1)-(3) lists three categories of SSCs within the “initial focus” of license renewal review. *Pilgrim*, CLI-10-14, 71 NRC __ (slip op. at 6). The three categories are: (1) SSCs “relied upon to remain functional during and following design basis events” to ensure (a) the integrity of the reactor coolant pressure boundary, (b) the capability to shut down the reactor and maintain it in a safely shutdown condition, or (c) the capability to prevent or mitigate the consequences of accidents; (2) all non-safety related SSCs whose

failure could prevent accomplishment of (a), (b), or (c), above; (3) all SSCs relied upon to demonstrate compliance with 10 C.F.R. §§ 50.48, 50.49, 50.61, 50.62, and 50.63. Section 54.21, in turn, provides the standard for determining which SSCs performing “an intended function, described in 54.4” require aging management review. *Id.* (slip op. at 7).

Pursuant to § 54.21, the license renewal application must demonstrate that SSCs “will perform such that the *intended functions*, as delineated in § 54.4, are maintained consistent with the CLB.” *Id.* (slip op. at 17). Recognizing that most SSCs have more than one function that could be considered a “required function,” the demonstration required by § 54.21 is limited to the aging management of the SSCs’ function(s) that fall within the § 54.4(a)(1)-(3). *See id.* (slip op. at 16-17 & n.71);⁴¹ *1995 License Renewal Rule*, 60 Fed. Reg. at 22,467, 22,469 (May 8, 1995). In other words, § 54.21 is limited by § 54.4(a)(1)-(3) such that only the § 54.4(a)(1)-(3) functions of an SSC must receive aging management review, not *every* function of an SSC. *See Pilgrim*, CLI-10-14, 71 NRC at ___ (slip op. at 16).⁴²

Although FOTC/NEC does not explicitly address the requirement in 10 C.F.R. § 2.309(f)(1)(iii) that it demonstrate that Contention 3 is within the scope of the proceeding, FOTC/NEC appears to believe that Contention 3 is within scope because it raises an issue with respect to SSCs specifically listed in § 54.21, and thus is within the scope of the license renewal, regardless of whether the issue involves the intended function of the SSC as delineated in § 54.4(a)(1)-(3). *See FOTC/NEC Petition* at 23-24; *Blanch Affidavit* at 14-15. This argument is flawed because it presumes *all* functions of SSCs within the scope of the license

⁴¹ CLI-10-14 also specifically rejects any argument that 10 C.F.R § 54.29 expands the scope of license renewal beyond the “intended functions” outlined in § 54.4. *Pilgrim*, CLI-10-14, 71 NRC at ___ (slip op. at n.71).

⁴² It should be noted that § 54.4(b) plainly states that the intended functions SSCs must be shown to fulfill in the aging management review pursuant to § 54.21 are those functions specified in § 54.4(a)(1)-(3).

renewal require aging management. As discussed above, the Commission's decision in CLI-10-14 clearly states that it is not enough that the contention address an SSC within the scope of license renewal; the contention must address an intended function of the SSC that falls within § 54.4(a)(1)-(3). See *Pilgrim*, CLI-10-14, 71 NRC __ (slip op. at 6-8, 13-19). Like the contention on buried piping addressed by the Commission in CLI-10-14, FOTC/NEC Contention 3 focuses on preventing leaks of radioactive water, and asserts that the LRA must include steps to detect and prevent such leaks from occurring. See *id.* at 8-14; FOTC/NEC Petition at 24-30.

FOTC/NEC does not assert or provide any supporting documents, evidence, or expert opinion indicating that leakage of buried pipes and tanks could be large enough to result in the loss of an intended safety function as defined in § 54.4(a)(1)-(3). As the Commission explained in CLI-10-14, the key functions that are the focus of license renewal review under Part 54 do *not* include preventing inadvertent leakage from buried pipes and tanks. See *Pilgrim*, CLI-10-14, 71 NRC __ (slip op. at 15); *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), LBP-08-26, 68 NRC at 945 (“[M]onitoring and leak prevention programs have no relevance to aging management and are therefore beyond the scope of this [licensing renewal] proceeding”). Instead, monitoring and leak prevention programs are part of the NRC's ongoing regulatory process. Through that process, “which includes plant inspections, notices and guidance to licensees, and enforcement actions, the NRC takes a host of measures to improve the ability to timely detect and correct inadvertent leaks to assure compliance with public dose limits.” *Pilgrim*, CLI-10-14, 71 NRC __ (slip op. at 15, 18 & n.76) (detailing recent actions to review and address leakage from buried piping, tanks, and spent fuel pools as part of the NRC's on-going regulatory process). Because the issue raised by Contention 3 is not the ability of SSCs to perform an intended function, as defined by

§ 54.4(a)(1)-(3), it is outside the scope of this proceeding.⁴³

c. Contention 3 Lacks an Adequate Factual Basis

As discussed above, for each contention a petitioner seeks to admit, the petitioner must “provide a concise statement of the alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue.” 10 C.F.R. § 2.309(f)(1)(v). Simply referencing or attaching material without explaining its significance is insufficient to provide a factual basis. See *Fansteel, Inc.*, CLI-03-13, 58 NRC at 204-05; *Palisades*, LBP-06-10, 63 NRC at 352 (rejecting a contention founded upon general facts that were not specific to the plant).

Even assuming that Contention 3 is within the scope of this proceeding, it is inadmissible because it impermissibly relies on generalized allegations and vague references to alleged events at other plants and similarly unparticularized portions of general studies to provide a factual basis. See *Millstone*, CLI-01-24, 54 NRC at 363. First, FOTC/NEC generically refers to “recent events around the United States and the world—as well as at the Seabrook Nuclear Power Station” to demonstrate that “aging piping systems have experienced leaks and/or corrosion.” FOTC/NEC Petition at 24. FOTC/NEC does not, however, provide evidence that

⁴³ The Staff recognizes that Contention 3 is essentially identical to a contention submitted by the State of New York in the *Indian Point* License Renewal Proceeding. Compare FOTC/NEC Petition at 22-33 with NYS Petition at 89-101. Contention 3 is also similar to a contention submitted in the *Prairie Island* license renewal proceeding, which was also based upon a contention submitted in the *Indian Point* proceeding. See *Prairie Island* Indian Community’s Notice of Intent to Participate and Petition to Intervene (Aug. 18, 2008). The *Prairie Island* Board found that the contention was outside the scope of the proceeding. *Prairie Island*, LBP-08-26, 68 NRC at 943-45. The *Indian Point* Board admitted the contention, but it did not have the benefit of the Commission’s decision in CLI-10-14, which clarified that license renewal applicants are not required to provide reasonable assurance that *all* functions of an SSC within the scope of § 54.4 and § 54.21 will be maintained consistent with the CLB; rather, the license renewal applicant “must provide reasonable assurance that structures and components ‘will perform such that their *intended functions*, as delineated in § 54.4 are maintained consistent with the CLB.’” *Pilgrim*, CLI-10-14, 71 NRC __ (slip op. at 16-17) (quoting 60 Fed. Reg. at 22,479). Also, even in *Indian Point*, the contention submitted by New York was only admitted “to the extent that it pertains to the adequacy of Entergy’s AMP for buried pipes, tanks, and transfer canals that contain radioactive fluid which meet 10 C.F.R. § 54.4(a) criteria.” *Indian Point*, LBP-08-13, 68 NRC at 81.

leaks and corrosion have occurred or will occur in the future at Seabrook. In fact, later in the petition, FOTC/NEC acknowledges that it has no evidence that leaks of the type addressed by its contention have actually occurred at Seabrook, but rather that its contention is based on industry experience. See *id.* at 26. FOTC/NEC then lists a number of events at other facilities involving leaks in various SSCs, including buried pipes, spent fuel pools, tanks, and other SSCs that may or may not even be within the scope of license renewal review. See *id.* at 26-30. FOTC/NEC does not explain how these events relate to buried SSCs at Seabrook or demonstrate inadequacies in NextEra's AMPs. Furthermore, none of these events compromised the ability of the affected systems to perform their intended safety functions. Thus, reference to those events does not provide a factual basis for FOTC/NEC's assertion that the LRA is insufficient.

Second, FOTC/NEC makes a number of assertions based on references to various documents without explaining the significance of the document, attaching the document to the petition or, in some cases, providing enough identifying information for parties to locate the document. FOTC/NEC asserts, "reports have also confirmed that leaks of underground pipes and tanks can result in release of significant amounts of radioactive materials into the groundwater or atmosphere." FOTC/NEC Petition at 24. FOTC/NEC does not, however, identify the referenced reports or explain how they demonstrate an inadequacy in NextEra's AMPs. Second, FOTC/NEC and the Blanch Affidavit suggest that the LRA is deficient because NextEra has not committed to complying with National Association for Corrosion Engineers (NACE) corrosion standards. FOTC/NEC Petition at 25; Blanch Affidavit at 17. Neither FOTC/NEC's Petition nor the Blanch Affidavit explains either the significance of the NACE

standards or their relevance to the proffered contention.⁴⁴

Thus, FOTC/NEC has not provided a sufficient basis, beyond bare assertions and speculation, to demonstrate any deficiency in the LRA with respect to buried SSCs. See *USEC*, CLI-06-10, 63 NRC at 472 (stating that expert opinions must provide a reasoned basis or explanation to support an admissible contention); *Fansteel, Inc.*, CLI-03-13, 58 NRC at 203 (“bare assertions” are insufficient to support an admissible contention). Therefore, Contention 3 is inadmissible.

d. Contention 3 Does Not Show a Genuine Dispute With the Application

FOTC/NEC does not show that Contention 3 raises a genuine dispute with the application regarding a material issue of fact or law. The regulations require petitioners to identify “specific portions of the application . . . that the petitioner disputes *and the supporting reasons* for each dispute,” or to identify specific omissions “and the *supporting reasons* for the petitioner’s belief.” 10 C.F.R. § 2.309(f)(1)(vi) (emphasis added).

FOTC/NEC’s Petition makes only one specific reference to NextEra’s LRA,⁴⁵ and that is to NextEra’s program for inspection of buried pipes and tanks. FOTC/NEC quotes the description of NextEra’s Buried Piping and Tanks Inspection program and then makes some generalized observations about the program. FOTC/NEC Petition at 33.⁴⁶ As discussed above, FOTC/NEC cannot rely on a list of leaks that occurred at other facilities, bare assertions, and

⁴⁴ As discussed below, NextEra has submitted a supplement to its LRA, in which it addresses compliance with the recommendations in NACE SP0169-2997.

⁴⁵ Other references to the LRA in support of Contention 3 are incorrect. See FOTC/NEC Petition at 32. That is, there is no Section 3.1.5 in Appendix A of NextEra’s LRA nor does Appendix A of NextEra’s Application contain a page A-46. Appendix A has only 43 pages.

⁴⁶ As clearly stated in the description of the AMP, Seabrook does not have any buried tanks. Thus, to the extent FOTC/NEC is challenging the adequacy of aging management of buried tanks, FOTC/NEC has not and cannot demonstrate a genuine dispute with the application.

unexplained references to documents to demonstrate a genuine dispute with the application on a material issue of law or fact.⁴⁷

To the extent FOTC/NEC's Petition alleges deficiencies in NextEra's Application,⁴⁸ LRA Supplement 1 submitted by NextEra on October 29, 2010 addresses those alleged deficiencies, rendering them moot. LRA Supplement 1 revised NextEra's Buried Piping and Tanks Inspection Program. The revision clarified that NextEra's Buried Pipes and Tanks Inspection Program includes:

buried and underground piping (and bolting) made of steel, stainless steel and polymeric material;

preventive measures (wrapping and/or coating of steel piping, cathodic protection that "meets the recommendations in NACE SP0169-2007,⁴⁹" and backfill quality specifications);

inspections before and during the period of extended operation (including provision for hydrostatic testing per 49 C.F.R. Part 195 and internal inspections in lieu of external visual inspections); and

trending of inspection and testing results.

LRA Supplement 1 Enclosure 1 at 4-18. LRA Supplement 1 clearly identifies the systems, type of piping, and different environments in which piping within the scope of the program is found. LRA Supplement 1 Enclosure 1 at 5-7, 12-18. Thus, LRA Supplement 1 moots FOTC/NEC's claims that NextEra's LRA is inadequate because it does not specify the piping within the scope

⁴⁷ The Blanch Affidavit's assertion that NextEra's Application is incomplete because it fails to provide drawings is incorrect. The color-coded schematic drawings referenced in the LRA are publicly available at ADAMS Accession No. ML101620340.

⁴⁸ Although FOTC/NEC identifies what it believes are deficiencies in the LRA, FOTC/NEC does not provide supporting reasons for its belief as required by 10 C.F.R. § 2.309(f)(1)(vi). Thus, notwithstanding submission of LRA Supplement 1, FOTC/NEC is inadmissible.

⁴⁹ Steel piping control building air handling, instrument air, fire protection, and service water systems are cathodically protected. LRA Supplement 1 Enclosure 1 at 8. Stainless steel piping in the diesel generator and condensate systems are also cathodically protected. *Id.*

of the program; is limited to steel piping and external surfaces; does not discuss preventive measures (e.g., cathodic protection); does not consider the “current revision” to GALL;⁵⁰ and makes no commitment to comply with NACE standards. Consequently, Contention 3 must be rejected.

FOTC/NEC CONTENTION 4

4. Adequacy of NextEra’s Seabrook SAMA Analysis

a. SAMA Overview

Contention 4 states,

The Environmental Report is inadequate because it underestimates the true cost of a severe accident at Seabrook Station in violation of 10 C.F.R. § 51.53(c)(3)(ii)(L) and further analyses by the applicant is called for.

FOTC/NEC Petition at 34. Pursuant to 10 C.F.R. § 51.53(c)(3)(ii)(L), the ER must provide “a consideration of alternatives to mitigate severe accidents.” “Mitigation alternatives or ‘SAMAs’ refer to safety enhancements such as a new hardware item or procedure intended to reduce the risk of severe accidents.” *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC __ (Mar. 26, 2010)(slip op. at 3). The SAMA review ensures “that any plant changes — in hardware, procedures, or training — that have a potential for significantly improving severe accident safety performance are identified and assessed.” *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-17, 56 NRC 1, 5 (2002).

In discussing another SAMA contention, the Commission noted that it has “long stressed that NRC adjudicatory hearings are not EIS editing sessions.” *Entergy Nuclear Generation Co.*

⁵⁰ A revised draft GALL Report was published for comment on May 18, 2010 (75 Fed. Reg. 27838). The revision has not been finalized.

& Entergy Nuclear Operations (Pilgrim Nuclear Power Station), CLI-09-11, 69 NRC 529, 533 (2009) (quotations omitted). “Under NEPA, mitigation (and the SAMA issue is one of mitigation) need only be discussed in ‘sufficient detail to ensure that environmental consequences [of the proposed project] have been fairly evaluated.’” *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2, Catawba Nuclear Station, Units 1 & 2), CLI-03-17, 58 NRC 419, 431 (2003) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 353 (1989) (alteration in original)). Thus, the Commission has stated that the “ultimate concern” for a SAMA analysis “is whether any additional SAMA should have been identified as potentially cost beneficial, not whether further analysis may refine the details in the SAMA NEPA analysis.” *Pilgrim*, CLI-09-11, 69 NRC at 533.

The SAMA analysis “evaluates a number of potential accident progression sequences (scenarios) and the possible safety enhancements that may reduce the risk of those accident scenarios.” *Pilgrim*, CLI-10-11, 71 NRC ___ (slip op. at 3). The analysis determines “whether particular SAMAs would sufficiently reduce risk – e.g., by reducing frequency of core damage or frequency of containment failure – for the SAMA to be cost-effective to implement.” *Id.* Thus, the analysis is inherently probabilistic. *Id.* “If the cost of implementing a particular SAMA is greater than its estimated benefit, the SAMA is not considered cost-beneficial to implement.” *Id.*

In *Pilgrim*, the Board explained, “The underlying analyses require modeling of extremely complex time and physical condition dependent phenomena, which all those familiar with the field know are generally not amenable to accurate modeling. Therefore, this Agency has wisely determined that these effects and potential benefits of mitigation be examined using ‘probability weighted consequences.’” *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), LBP-07-13, 66 NRC 131, 142 & n.12 (2007). In this approach, the SAMA analysis “compute[s] hundreds of scenarios which [a]re then weighted according to their probabilities[,] and then [develops] a distribution of probabilities of the consequences and risks.” *Id.* The “wide variation

in code input [leads to] a set of results with statistical significance.” *Id.* at n.12.

After the SAMA analysis, “The NRC Staff’s obligation regarding SAMAs under NEPA and Part 51 is met by taking a hard look at those SAMAs identified as potentially cost beneficial.” *Entergy Nuclear Operations Inc.* (Indian Point Nuclear Generating Units 2 & 3), LBP-10-13, 71 NRC __ (Jun. 30, 2010)(slip op. at 5). Only those SAMAs that are cost-beneficial and “bear on adequately managing the effects of aging” “need be implemented as part of the license renewal safety review, pursuant to 10 C.F.R. Part 54.” *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 7 n.28).

Therefore, the NRC’s SAMA analysis does not need to predict the results of any single severe accident scenario with absolute accuracy. That exercise would be of limited value given the wide range of possible conditions that may accompany a severe accident. *Pilgrim*, LBP-07-13, 66 NRC at 142 n.12. Rather, because the analysis rests on the statistically-significant consequences of thousands of varied scenarios, the SAMA analysis for any given set of scenarios provides a reasonable and sufficient model to satisfy NEPA’s hard look requirement. *Id.* This is especially true in light of the limited purpose of the SAMA analysis: to identify potentially cost-beneficial SAMAs. Consequently, only errors in the SAMA analysis that could impact the aggregate computation with sufficient magnitude to result in a potential SAMA becoming cost-beneficial will raise a material dispute with the application and hence support an admissible contention. *See Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 39) (“Unless it looks genuinely plausible that inclusion of an additional factor or use of other assumptions or models may change the cost-benefit conclusions for the SAMA candidates evaluated, no purpose would be served to further refine the SAMA analysis, whose goal is only to determine what safety enhancements are cost-effective to implement.”).

b. Contention 4 is Not Material

Contention 4 consists of several discrete challenges to the SAMA analysis. The NRC

Staff will respond to each challenge in turn. But, all of these challenges share a common defect: none raise a material issue. To meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) and (vi), FOTC/NEC must “demonstrate that the issue raised is material to the findings the NRC must make to support the action” and “provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact.” As discussed above, the Commission has indicated that the limited purpose of the SAMA analysis is to identify potentially cost-beneficial SAMAs. *Pilgrim*, CLI-09-11, 69 NRC at 533; *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 39). Thus, to raise a material issue, FOTC/NEC must demonstrate that its challenges to the SAMA analysis would be likely to result in identification of an additional potentially cost-beneficial SAMA. FOTC/NEC cannot simply claim that “further analysis may refine the details in the SAMA NEPA analysis.” *Id.*

Other intervenors who have sponsored admissible contentions have provided at least some support for concluding that, if proven, their contention could result in the identification of a potentially cost-beneficial SAMA. For example, in *McGuire/Catawba*, the petitioner produced information that showed a significantly greater possibility of containment failure than that assumed in the applicant’s SAMA analysis. *McGuire/Catawba*, CLI-02-17, 56 NRC at 6-8. This information demonstrated that the SAMA analysis underestimated the potential benefit at “possibly a large enough magnitude to justify one or more of these [SAMA] alternatives.” *Id.* at 8. Likewise, in *Pilgrim*, the intervenor specifically challenged whether a particular SAMA, installation of a torus vent filter, would be cost beneficial. Request for Hearing and Petition to Intervene by Pilgrim Watch, 45-48 (May 25, 2006) (ADAMS Accession No. ML061630125).⁵¹

⁵¹ While other Boards have admitted SAMA contentions that did not explicitly address whether they would result in identification of an additional cost-beneficial SAMA, e.g. *Indian Point*, LBP-08-13, 68 NRC at 102; *Prairie Island*, LBP-08-26, 68 NRC at 926, these Boards ruled before the Commission’s (continued. . .)

In this case, FOTC/NEC claims that “[b]y underestimating the cost of a severe accident in its SAMA analysis NextEra incorrectly discounts possible mitigation alternatives.” FOTC/NEC Petition at 36. However, FOTC/NEC concedes, “Petitioners do not offer examples of how this cost benefit equation might have been skewed in favor of no mitigation.” *Id.* at 76. Instead, FOTC/NEC only asserts, “The dramatic minimization of costs by NextEra are such that it should be obvious that *many* SAMAs would be cost effective if the described defects in the analysis were addressed.” *Id.* at 76-77 (emphasis in original).

This mere assertion that it should be “obvious” that the contention is material does not satisfy the requirements of the regulations that a would-be-intervenor “[d]emonstrate that the issue raised in the contention is material” and “provide sufficient information to show that a genuine dispute exists with the applicant/license on a material issue.” 10 C.F.R. §§ 2.309(f)(1)(iv) and (vi). Instead, contrary to Commission precedent discussing SAMA contentions, this contention seeks to use this hearing as an “EIS editing session” to further refine a SAMA analysis without any demonstration that such refinement is needed to identify cost-beneficial SAMAs. *Pilgrim*, CLI-09-11, 69 NRC at 533. Consequently, FOTC/NEC Contention 4 is inadmissible because FOTC/NEC has not made any demonstration, beyond pure assertion, that it is material to the findings the NRC must make.

FOTC/NEC notes that the Commission rejected an argument in *McGuire/Catawba* that a SAMA contention was not material because the only remedy available would be more analysis under NEPA. FOTC/NEC Petition at 77 (*citing McGuire/Catawba*, CLI-02-17, 56 NRC at 10). The Commission found that “further analysis . . . is a valid and meaningful remedy under

(. . .continued)

pronouncement in *Pilgrim* that refinement of a SAMA analysis for its own sake is not a valid subject for a contention. *Pilgrim*, CLI-09-11, 69 NRC at 533; *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 37-39).

NEPA.” *McGuire/Catawba*, CLI-02-17, 56 NRC at 10. The Staff agrees that further analysis can be a meaningful result under NEPA, but with respect to a SAMA analysis, the Commission has stated that an analysis that is adequate to identify potential cost-beneficial SAMAs is sufficiently meaningful to satisfy NEPA. *Pilgrim*, CLI-09-11, 69 NRC at 532-33. A request that the NRC refine a SAMA analysis beyond that level invites this Board to undertake precisely the type of “EIS editing session” the Commission found would not meaningfully add to the NRC’s NEPA review and SAMA analysis in *Pilgrim*. *Id.*

c. Contention 4-A: NextEra’s Use of Probabilistic Modeling Underestimates the True Consequences of a Severe Accident

Contention 4-A states, “NextEra’s use of probabilistic modeling underestimated the true consequences of a severe accident.” FOTC/NEC Petition at 37. Specifically, Contention 4-A claims that NextEra’s SAMA analysis inappropriately relied on probabilistic modeling and ignored the possibility of a terrorist attack. *Id.* at 38-40. In addition, Contention 4-A challenges the Commission’s generic findings regarding environmental impacts from severe accidents. *Id.* at 38 n.6. Contention 4-A is a generic challenge to the Commission’s regulations and the use of probabilistic risk assessment and the MACCS2 code in a SAMA analysis and is therefore outside the scope of the proceeding. In addition, as discussed above, while FOTC/NEC offers several arguments for why NextEra’s use of probabilistic modeling underestimated the deaths, injuries, and economic impact likely from a severe accident, none of the arguments raise a material issue. Specifically, FOTC/NEC does not demonstrate that a different analysis or definition of risk could result in the identification of potentially cost beneficial SAMAs. Further, Contention 4-A lacks an adequate factual basis. Consequently, the Board should not admit Contention 4-A pursuant to 10 C.F.R. § 2.309(f)(1)(iii), (iv), (v), and (vi).

- i. FOTC/NEC's Claims Challenging Probabilistic Modeling, Alleging that Terrorist Attacks Must be Examined, and Challenging Table B-1, Are Outside the Scope of the Proceeding
- aa. FOTC/NEC's Generic Challenge to Probabilistic Modeling and the MACCS2 Code for SAMA Analysis Is Outside the Scope of this Proceeding

FOTC/NEC argues that NextEra underestimated the true consequences of a severe accident by following standard industry and NRC practice by using "the Probabilistic Safety Analysis (PSA) Model and a Level 3 model developed by the MACCS2 code"⁵² in their SAMA analysis.⁵³ While NRC regulations do not require applicants to use a PSA model developed by the MACCS2 code, the Commission has stated that "NRC guidance documents conclude that the MACCS2 code . . . is acceptable for performing SAMA analyses."⁵⁴ Moreover, the Commission noted that the SAMA analysis requires an examination of the "probability-weighted consequences of the analyzed severe accident [scenarios]." *Pilgrim*, CLI-10-11, 71 NRC__ (slip op. at 3). Quite simply, the Commission has unequivocally stated that SAMA analysis "is a probabilistic risk assessment analysis." *Id.*

Moreover, the NRC's regulations note that "the probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to ground water, and societal

⁵² FOTC/NEC Petition at 38.

⁵³ See NEI 05-01, Severe Accident Mitigation Alternatives Analysis, Guidance Document, Rev. A (Nov. 2005) (ADAMS Accession No. ML060530203). See also NRC Supplement I to Regulatory Guide 4.2. The MACCS2 computer code calculates the "probability-weighted" cumulative dose and economic impacts from a severe accident for a 50-mile radial region over a 30-year period. The ATMOS module is integral to this model, and is used to predict atmospheric transport and dispersion of radionuclides released by a postulated severe accident. Like the entire MACCS2 model, ATMOS analyzes scores of data points to assess risks based on *average* impacts to a 50-mile region over a 30-year period.

⁵⁴ *Pilgrim*, CLI-10-11, 71 NRC at __ (slip op. at 4) (citing Staff Guidance for Preparing Severe Accident Mitigation Alternative Analyses, 72 Fed. Reg. 45,466 (Aug. 14, 2007)).

and economic impacts from severe accidents are small for all plants. However, alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives.” 10 C.F.R. Part 51, Appendix B, Table B-1 (emphasis added). Consequently, the NRC regulations specifically envision consideration of severe accident mitigation in a probabilistic manner. Thus, FOTC/NEC’s challenge to NextEra’s probabilistic approach in computing SAMAs is contrary to Commission precedent and outside the scope of the proceeding.

bb. Terrorist Acts Are Outside the Scope of the Proceeding and Not Material

Additionally, FOTC/NEC argues that NextEra’s SAMA analysis did not accurately reflect the consequences of a severe accident at Seabrook because “NextEra failed to model intentional acts of [terrorism] in [the ER’s] analysis of external events.”⁵⁵ This argument is outside the scope of the proceeding. Commission precedent clearly states that NextEra is not required to model intentional malevolent acts in its ER for license renewal, nor is the NRC staff required to do so in its site-specific environmental impact statement.⁵⁶ The Commission noted that “it is sensible not to devote resources to the likely impact of terrorism during the license renewal period, but instead to concentrate on how to prevent a terrorist attack in the near term at the already licensed facilities.” *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-26, 56 NRC 358, 365 (2002). Further, NEPA “imposes no duty on the NRC to consider intentional malevolent attacks in conjunction with

⁵⁵ FOTC/NEC Petition at 40-41 (citing to a report by Dr. Edwin S. Lyman, Chernobyl on the Hudson? The Health and Economic Impacts of a Terrorist Attack at the Indian Point Nuclear Plant, Union of Concerned Scientists, p.16 (Sept. 2004), for the proposition that intentional acts should not be considered using probabilistic methods).

⁵⁶ See *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-08, 65 NRC 124 (2007), *aff’d N.J. Dept. of Env’tl. Prot. v. NRC*, 561 F.3d 132 (3rd Cir. 2009).

commercial power reactor license renewal applications. *Oyster Creek*, CLI-07-08, 65 NRC at 129 (internal citation omitted).

Notwithstanding the Commission's view that NEPA does not impose a duty to consider the environmental effects of intentional malevolent acts, there is a discretionary generic analysis of terrorism in the GEIS.⁵⁷ Section 5.3.3.1 of the GEIS specifically discusses the issue raised by Contention 4-A in "Review of Existing Impact Assessments," which considered the risk from sabotage and beyond design basis earthquakes at existing nuclear power plants and concluded that it is small and that the risks from these and other external events are adequately addressed by a generic consideration of internally initiated severe accidents. In *Oyster Creek*, which involved a SAMA claim,⁵⁸ the Commission affirmed that the environmental impact of intentional acts of terrorism has already been given adequate NEPA consideration in the GEIS.⁵⁹ Thus, NextEra is not required to evaluate terrorism in its ER.

Further, this argument is not material to the findings the NRC must make to support license renewal. Specifically, the Commission stated that "license renewals are not related to any change in the risk of terrorist attack, and the terrorism issue is therefore not material to the decision the Board must make in this proceeding."⁶⁰ Therefore, this argument is inadmissible under 10 C.F.R. § 2.309(f)(1)(iv). For both of the reasons outlined above, this argument does

⁵⁷ See *Pilgrim*, CLI-10-14, 71 NRC ___ (slip op. at 37-38) (reaffirming the Commission's position in *Oyster Creek*, CLI-07-08, 68 NRC 124 (2007)).

⁵⁸ See *Oyster Creek*, CLI-06-24, 64 NRC 111 (2007) (noting that in the petitioner's view, the NRC Staff's environmental analysis ought to have included a more elaborate examination of SAMAs at *Oyster Creek*, including an inquiry into the consequences of a potential aircraft attack on the reactor, the vulnerability of the spent fuel pool to terrorist attack and to "design basis" threats, and long-term compensatory measures to defend against terrorism).

⁵⁹ See *Oyster Creek*, CLI-07-08, 65 NRC at 128, 131-32.

⁶⁰ *Oyster Creek*, CLI-07-08, 65 NRC at 130; *Indian Point*, LBP-08-13, 68 NRC at 186.

not support the admissibility of Contention 4-A.

cc. FOTC/NEC's Challenge to Table B-1's
Determination on Societal and Economic
Impacts is Outside the Scope of the
Proceeding

FOTC/NEC argues that the "small" impact finding for societal and economic impacts in Table B-1 of Appendix B of Part 51, Subpart A ("Table B-1"), as supported by the GEIS, is inaccurate. FOTC/NEC Petition at 38 n. 6. Specifically, FOTC/NEC argues that the societal and economic impacts from severe accidents only appear small "by the use of methods that minimize consequences." *Id.* This argument is a direct challenge to the Commission's regulations in Table B-1 and is therefore not within the scope of this licensing proceeding. 10 C.F.R. § 2.309(f)(1)(iii).

The Commission has limited contentions raising environmental issues in license renewal proceedings to those issues that are affected by license renewal and have not been addressed by rulemaking or on a generic basis. *Turkey Point*, CLI-01-17, 54 NRC at 11, 16. While "severe accident mitigation alternatives" is a Category 2 issue,⁶¹ the impact finding of "small" for societal and economic impacts from severe accidents is a generic determination for all plants. See Table B-1. This generic finding, codified in NRC's regulations, is not subject to challenge absent a waiver. See 10 C.F.R. § 2.335(a). FOTC/NEC has not petitioned the Commission for a waiver. Therefore, this argument is outside the scope of the proceeding and does not support the admissibility of Contention 4-A.

⁶¹ See Table B-1 (citing 10 C.F.R. § 51.53(c)(3)(ii)(L)) and noting that alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives). See also *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 37, 39).

ii. FOTC/NEC's Claims Regarding NextEra's Risk Definition and PRA Uncertainties Lack an Adequate Factual Basis

FOTC/NEC argues that probabilistic modeling underestimates the consequences of a severe accident because it defines risk as “the product of consequence and frequency of accidental release.”⁶² However, this argument lacks the basis required by 10 C.F.R. § 2.309(f)(1)(v). In support of this argument, FOTC/NEC cites a decision in *Indian Point* for the proposition that “the Commission should not ignore the potential consequences of severe-consequence accidents by always multiplying those consequences by low probability values.” FOTC/NEC Petition at 39. But, FOTC/NEC’s discussion of this case is incorrect.

Specifically, the quotation cited from the decision does not reflect the holding in that case. The Board was merely recognizing that due to the high population density near Indian Point, “a low-probability accident at Indian Point may result in greater consequences than the same accident at another site.”⁶³ As such, *Indian Point* is inapposite. In *Indian Point*, the Commission instructed the Board to consider serious accidents with “equal attention” to both probabilities and consequences.⁶⁴ This instruction supports the validity of the definition of risk used by NextEra, which considers both probability and consequences and mirrors the definition the Commission uses in its analyses.⁶⁵ Therefore, there is no basis for the challenge to NextEra’s risk definition and this argument does not support the admission of Contention 4-A.

⁶² FOTC/NEC Petition at 38 (citing ER at 4.20).

⁶³ *Consolidated Edison Co. of N.Y.* (Indian Point, Unit 2), Power Auth. of the State of N.Y. (Indian Point, Unit 3), CLI-85-06, 21 NRC 1043, 1054 (1985).

⁶⁴ See *Consolidated Edison Co. of N.Y.* (Indian Point, Unit 2), Power Auth. of the State of N.Y. (Indian Point, Unit 3), LBP-83-68, 18 NRC 811 (1983), *aff'd* CLI-85-6, 21 NRC 1043 (1985).

⁶⁵ See Attorney General of Massachusetts, Attorney General of California; Denial of Petitions for Rulemaking, 73 Fed. Reg. 46,204, 46,207-08, 46,211-12 (Aug. 8, 2008).

FOTC/NEC also points to an article for the proposition that “[probabilistic risk analysis (“PRA”)] uncertainties are so large and so unknowable that it is a huge mistake to use a single number coming from them for any decision regarding adequate protection.”⁶⁶ However, for several reasons, this article does not support the admissibility of Contention 4-A.

First, the NRC does not use the SAMA analysis to make decisions on adequate protection.⁶⁷ Instead, the SAMA analysis is done pursuant to NRC’s Part 51 regulations implementing NEPA.⁶⁸ Second, as discussed above, under NEPA, the consideration of mitigation alternatives is governed by a “rule of reason.”⁶⁹ This “rule of reason” requires a “reasonably complete discussion of possible mitigation measures,” but does not require “that a

⁶⁶ FOTC/NEC Petition at 40 (citing Kamiar Jamali, *Use of Risk Measures in Design and Licensing Future Reactors*, 95 RELIABILITY ENGINEERING & SYSTEM SAFETY 935-43 (2010) (“Jamali Article”).

⁶⁷ The Jamali Article appears to recognize this in noting that “operating reactors have primarily deterministic licensing basis already in place, which means that the plants were already determined to be safe before applying the results of plant-specific PRAs.” Jamali Article at 936. “NRC regulations require that nuclear reactors be designed to withstand certain postulated events or accidents, called ‘design basis accidents’ or DBAs.” *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 & 2), LBP-09-10, 70 NRC 51, 91 (2009). “Design basis accidents are not intended to be actual event sequences, but instead ‘surrogates to enable deterministic evaluations of a facility’s engineered safety features.’” *Dominion Nuclear Connecticut, Inc.*, CLI-03-14, 58 NRC 207, 209 n. 1 (2003) (*quoting* Regulatory Guide 1.183, “Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors” at 1.183-2 (July 2000)). Thus, existing plants have already undergone a deterministic evaluation to ensure that they will operate safely.

⁶⁸ See 10 C.F.R. § 51.53(c)(3)(ii)(L). See also *Pilgrim*, CLI-10-22, 72 NRC __, __ (Aug. 27, 2010)(slip op. at 9-10); *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 38) (“... the SAMA analysis is a site-specific mitigation analysis. For a mitigation analysis, NEPA “demands ‘no fully developed plan’ or ‘detailed examination of specific measures which will be employed’ to mitigate adverse environmental effects”).

⁶⁹ See *Methow Valley*, 490 U.S. at 346. See also *Hydro Res., Inc.* (P.O. Box 777, Crownpoint, New Mexico, 87313), LBP-04-23, 60 NRC 441, 447-48 (2004) (stating that the “‘hard look’ at environmental consequences mandated by NEPA is subject to a ‘rule of reason,’ meaning that the assessment need not include every environmental effect that could potentially result from the action, but rather may be limited to effects which are shown to have some likelihood of occurring.”).

complete mitigation plan be actually formulated and adopted.”⁷⁰ Instead, a SAMA analysis need only be discussed in “sufficient detail to ensure that environmental consequences [of the proposed project] have been fairly evaluated.”⁷¹ NextEra’s SAMA analysis, which considered onehundred and ninety-one potential SAMAs, is such an evaluation. See Applicant’s Environmental Report Operating License Renewal State, at Attachment F (May 25, 2010) (ADAMS Accession No. ML101590089) (“ER”). Moreover, as FOTC/NEC recognizes, NextEra’s analysis accounted for uncertainties.⁷²

Third, FOTC/NEC appears to cite the Jamali Article for the proposition that a deterministic SAMA analysis should have been done. But, NRC regulations contemplate “the use of probabilistic (as opposed to deterministic) methodology”⁷³ for SAMA analyses. Thus, this argument is contrary to Commission precedent, and outside the scope of this proceeding. As a result, it is inadmissible. 10 C.F.R. § 2.309(f)(1)(iii).

⁷⁰ See *Methow Valley*, 490 U.S. at 352. *Methow Valley* also explains that NEPA is intended to “generate information and discussion on those consequences of greatest concern to the public and of greatest relevance to the agency’s decision, rather than distorting the decisionmaking process by overemphasizing highly speculative harms.” *Id.* at 356.

⁷¹ *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-03-17, 58 NRC 419, 431 (2003) (quoting *Methow Valley*, 490 U.S. at 352).

⁷² FOTC/NEC Petition at 74; ER at 4-40; Attachment F at F-45; F-158. Specifically, NextEra’s ER notes that: “because the inputs to PRA cannot be known with complete certainty, there is the possibility that the actual plant risk is greater than the mean values used in the evaluation of the SAMA described in the previous sections. To consider this uncertainty, a sensitivity analysis was performed in which an uncertainty factor was applied to the frequencies calculated by the PRA.” *Id.* at F-158. See also *infra* Part II.B.4.h.

⁷³ *Pilgrim*, LBP-07-13, 66 NRC 141; *Pilgrim* CLI-10-11, 71 NRC ___ (slip op. at 3) (SAMA analysis is a probabilistic risk assessment analysis). This approach in Part 51 is consistent with NRC policies concerning safety goals and risk assessment. In its Safety Goal Policy Statement, the Commission adopted the use of mean estimates for implementing the quantitative objectives of its safety goal policy. See Safety Goals for the Operation of Nuclear Power Plants; Policy Statement; Correction and Republication, 51 Fed. Reg. 30,028 (Aug. 21, 1986).

d. Contention 4-B: NextEra's SAMA Analysis Minimizes the Potential Amount of Radioactive Release in a Severe Accident

Contention 4-B states, "The SAMA analysis for Seabrook minimizes the potential amount of radioactive release in a severe accident." FOTC/NEC Petition at 41. Specifically, Contention 4-B challenges NextEra's treatment of spent fuel pool ("SFP") accidents and use of the Modular Accident Analysis Progression ("MAAP") code in its SAMA analysis for Seabrook. *Id.* at 41-46. To the extent Contention 4-B challenges the discussion of SFP accidents in the SAMA analysis, it impermissibly challenges the Commission's regulations in Table B-1 and its holding in *Turkey Point* and is therefore outside the scope of the proceeding. In addition, as discussed above, while FOTC/NEC offers several arguments for why NextEra's SAMA analysis minimizes the amount of radioactive release in a severe accident, none of them raise a material issue. Specifically, FOTC/NEC does not demonstrate that use of a different analysis could result in the identification of potentially cost-beneficial SAMAs. Contention 4-B also lacks an adequate factual basis. Thus, the Board should not admit Contention 4-B pursuant to 10 C.F.R. § 2.309(f)(1)(iii), (iv), (v), and (vi).

i. SAMA Analysis of Spent Fuel Risks Is Not Required by NRC Regulations

First, FOTC/NEC argues that "[t]he SAMA analysis for Seabrook minimized the potential amount of radioactive releases in a potential severe accident at Seabrook Station by [not] considering a severe accident in the SFP." FOTC/NEC Petition at 41. In support of this argument, FOTC/NEC asserts that "SAMAs designed to avoid or mitigate conventional accidents may be different than SAMAs designed to avoid or mitigate spent fuel accidents [and] the radiological consequences of a spent-fuel-pool fire are significantly different from the consequences of a core-damage accident." *Id.* at 41-42. This argument is outside the scope of this proceeding. Pursuant to 10 C.F.R. § 51.53(c)(2), NextEra is not required to provide information regarding the storage and disposal of spent fuel, and the Commission has clearly

stated that SAMA considerations apply only to the active fuel in the reactor core, not the SFPs. *Pilgrim*, CLI-10-14, 71 NRC ___ (slip op. at 32); *Turkey Point*, CLI-01-17, 54 NRC at 21-22. Therefore, this portion of FOTC/NEC's argument is inadmissible because it is contrary to Commission precedent and a direct attack on the Commission's regulations.⁷⁴

FOTC/NEC also argues that NextEra's SAMA analysis should have considered a severe accident in the SFP in combination with a reactor core accident. FOTC/NEC Petition at 41-42. Specifically, FOTC/NEC asserts that NextEra should have considered "the potential interactions between the pool and the reactor in the context of severe accidents at Seabrook [because] the [SFP] is located outside but immediately adjacent to the reactor's containment and shares some essential support systems with the reactor." *Id.* at 42. To the extent this argument asserts that a SAMA analysis should include SFPs, it is outside the scope of this proceeding. *Turkey Point*, CLI-01-17, 54 NRC at 6. As discussed above, Part 51's reference to SAMAs applies to nuclear reactor accidents, not spent fuel storage accidents. *Id.* at 21-22.

In arguing that NextEra must examine interactions between the reactor and the SFP in its SAMA analysis, FOTC/NEC cites to (1) a report by Dr. Gordon Thompson⁷⁵ and (2) a Shearon Harris license amendment proceeding. FOTC/NEC Petition at 42. But, in affirming the NRC's findings of low environmental impact from SFP fires, in response to a petition for rulemaking, the Commission explicitly considered both the Thompson report and the Shearon

⁷⁴ Notably, FOTC/NEC has not sought a waiver of the Commission's generally applicable rules, petitioned for a rulemaking, or pointed to any new and significant information that calls into question the Commission's generic findings regarding SFPs. See 10 C.F.R. §§ 2.335, 2.802, and 51.53(c)(iv), respectively.

⁷⁵ FOTC/NEC Petition at 42 (citing to Dr. Gordon Thompson, Risks of Pool Storage of Spent Fuel at Pilgrim Nuclear Power Station and Vermont Yankee, A Report for the Massachusetts Attorney General by IRSS, at 12, 16 (May 2006) (ADAMS Accession No. ML061630088) ("Thompson report")).

Harris proceeding.⁷⁶ The Commission held that the information in the Thompson report and the Shearon Harris proceeding did not undermine the generic conclusions in the GEIS. 73 Fed. Reg. at 46,208. Moreover, the Commission outlined how the Shearon Harris proceeding supported the Commission's environmental finding of low impacts from SFP fires. *Id.* at 46,208-10. The Commission held that these findings, which support the GEIS and Waste Confidence findings, "remain valid." *Id.* at 46,212. Therefore, this portion of the argument amounts to an impermissible challenge of the Commission's regulations. *Pilgrim*, CLI-07-03, 65 NRC at 19-20.

Finally, FOTC/NEC argues that the definition of "severe accidents" includes SFP accidents and, thus, SFPs are within the scope of SAMA analyses for purposes of license renewal. Specifically, FOTC/NEC argues that Section 6 of the GEIS, which supports the Category 1 finding for onsite spent fuel storage during the period of extended operation,⁷⁷ only addresses "normal operations [of SFPs]."⁷⁸ In contrast, FOTC/NEC notes that "[n]othing in Section 5 [of the GEIS, discussing severe accidents], excludes severe accidents involving . . . the spent fuel pool."⁷⁹ FOTC/NEC appears to claim that "because only the environmental impacts of 'normal [spent fuel pool] operations' have been found in the GEIS to be a Category 1 issue, license renewal applicants must provide a SAMA analysis encompassing beyond design

⁷⁶ 73 Fed. Reg. at 46,208 (citing Gordon R. Thompson, "Risks and Risk-Reducing Options Associated with Pool Storage of Spent Nuclear Fuel at the Pilgrim and Vermont Yankee Nuclear Power Plants," May 25, 2006, as an alleged source of new and significant information); *Id.* at 46,209-46,210 (citing the *Shearon Harris* proceeding).

⁷⁷ See *Pilgrim*, CLI-10-14, 71 NRC __ (slip op. at 34).

⁷⁸ FOTC/NEC Petition at 44. In particular, FOTC/NEC cites two sentences in Section 6.1 of the GEIS: "Accidental releases . . . could conceivabl[y] result in releases that would cause moderate or large radiological impacts. *Such conditions are beyond the scope of regulations controlling normal operations . . .*" FOTC/NEC Petition at 44 (emphasis added).

⁷⁹ *Id.* FOTC/NEC asserts that "NextEra confused Section 6 of the GEIS with Section 5." *Id.* at 43.

basis SFP accidents.”⁸⁰

Notably, this argument was raised in the Pilgrim license renewal proceeding⁸¹ and subsequently rejected by the Commission. *Pilgrim*, CLI-10-14, 71 NRC ___ (slip op. at 34-35). In rejecting the argument, the Commission provided the following clarification as to Section 6 of the GEIS and the insignificant impact a consideration of SFPs would have on a SAMA:

Chapter six clearly is not limited to discussing only “normal operations,” but also discusses potential accidents and other non-routine events. For onsite spent fuel pool storage, the GEIS analysis addresses concerns related to expanded spent fuel pool capacity and the risk that “plant life extension could possibly increase the likelihood of criticality through dense-racking or spent fuel handling accidents.” It specifically addresses spent fuel pool accidents and abnormal incidents, both actual events that occurred and the “worst probable cause of a loss of spent-fuel pool coolant (a severe seismic-generated accident causing a catastrophic failure of the pool),” concluding that “the likelihood of a fuel-cladding fire is highly remote,” and that “[i]nadvertent criticality and acute occupational exposure are remote risks of dense-racking.”

The Category 1 finding for onsite spent fuel storage (and chapter six of the GEIS upon which the finding is based) is not limited to routine or “normal operations.” As specified in the Environmental SRP, there are “no Category 2 issues related to the uranium fuel cycle and solid waste management.” The NRC recently reiterated that a “SAMA that addresses [spent fuel pool] accidents would not be expected to have a significant impact on total risk for the site” because the spent fuel pool accident “risk level is less than that for a reactor accident.”

Id. (internal citations omitted).

Thus, FOTC/NEC’s argument regarding Section 5 of the GEIS is contrary to Commission precedent and does not support the admissibility of Contention 4-B. Moreover, the Commission’s decision in *Turkey Point* remains valid: SAMA analyses must only consider reactor accidents. See generally, *Pilgrim*, CLI-10-14, 71 NRC ___. As discussed, FOTC/NEC

⁸⁰ *Pilgrim*, CLI-10-14, 71 NRC ___ (slip op. at 32).

⁸¹ See Pilgrim Watch’s Petition for Review of LBP-06-848, LBP-07-13, LBP-06-23 and the Interlocutory Decisions in the Pilgrim Nuclear Power Station Proceeding, Nov. 12, 2008 (ADAMS Accession No. ML0832405990).

has not sought a waiver of the Commission's generally applicable rules. Thus, this part of FOTC/NEC's argument is contrary to Commission precedent and a direct challenge to the generic environmental findings in Table B-1.⁸²

ii. FOTC/NEC's Claim that MAAP is Inappropriate Does Not Raise a Material Issue

Finally, FOTC/NEC argues that NextEra's SAMA analysis minimizes the potential amount of radioactive release in a severe accident because of NextEra's use of the MAAP code. FOTC/NEC Petition at 44. Specifically, FOTC/NEC argues that the "source terms used by NextEra to estimate the consequences of severe accidents (radionuclide release fractions generated by the [MAAP] code), has not been validated by [the] NRC," *id.*, and "leads to anomalously low consequences when compared to source terms generated by NRC Staff." *Id.* at 45. FOTC/NEC then, appears to argue that NextEra should have used the release fractions and release durations in NUREG-1465.⁸³

The Staff recognizes that FOTC/NEC has provided some support for the argument that MAAP may lead to lower consequences when compared to source terms generated by NRC Staff. *Id.* at 45. Specifically, the studies FOTC/NEC references indicate that MAAP may lead to lower consequences when compared to the source terms in NUREG-1465. *Id.* at 44. FOTC/NEC also notes that "[i]t has been previously observed that MAAP generates lower release fractions than those derived and used by NRC in studies such as NUREG-1150," *id.*, which uses "the Source Term Code Package [NRC's state-of the art methodology for source

⁸² *Pilgrim*, CLI-07-03, 65 NRC at 19-20.

⁸³ FOTC/NEC Petition at 44. Notably, FOTC/NEC did not directly state that the Source Term Code Package (STCP) and MELCOR codes (used in NRC studies that formed the basis for the regulatory source term presented in NUREG-1465) should have been used. Instead, FOTC/NEC argued that NUREG-1465 has source terms generated by NRC staff that had been reviewed by an expert panel and that NextEra should not have used a MAAP-generated source terms. *Id.* at 45-46.

term analysis at the time of NUREG-1150] and MELCOR.” *Id.* at 44-45 (quoting a Brookhaven National Laboratory study that independently analyzed the costs and benefits of one SAMA in the Catawba and McGuire license renewal proceeding).

However, FOTC/NEC has not demonstrated that the use of MAAP is unreasonable or inappropriate in this case. FOTC/NEC is correct that the MAAP code has not been formally reviewed and approved by the NRC. But, the NRC Staff has previously found the use of MAAP reasonable and appropriate for the purposes of the SAMA analysis.⁸⁴ Moreover, FOTC/NEC’s reliance on NUREG-1465 is unavailing. At issue here is the adequacy of NextEra’s analysis of the release of radionuclides to the environment in a severe accident. In contrast, NUREG-1465’s source term only addresses the release of radionuclides into containment; it assumes a “release resulting from ‘substantial meltdown’ of the core into the containment . . . and [assumes] *that the containment remains intact but leaks at its maximum allowable leak rate.*” NUREG-1465, at 1 (emphasis added). Releases into containment and releases into the environment are very different events, with significant differences in sequence progression, release pathways, and fission product deposition and removal mechanisms.⁸⁵ Thus, these events naturally result in different source terms; the disparity between NextEra’s MAAP-based probabilistic source term and the NUREG-1465 source term does not show that NextEra’s source term is deficient.

⁸⁴ See, e.g., Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Regarding Palisades Nuclear Plant - Final Report (NUREG-1437, Supplement 27), Appendix G at G-11.

⁸⁵ NUREG-1150, “Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants,” Dec. 1990, Vol. 2, Sections C-10.1 and C-13.4.1.

In rejecting a similar challenge to the MAAP code,⁸⁶ the *Indian Point* Board noted that the “[p]resentation of an alternative analysis is, without more, insufficient to support a contention alleging that the original analysis failed to meet applicable requirements.”⁸⁷ Here, FOTC/NEC has not established that the use of the MAAP is inadequate or was used improperly by NextEra,⁸⁸ or that the use of another source term would identify additional cost beneficial SAMAs. *Pilgrim*, CLI-09-11, 69 NRC at 533. Instead, FOTC/NEC only argues that an alternative analysis, using different source terms, should have been completed.⁸⁹ Therefore, in this case, as in the *Indian Point* proceeding, the Board should reject this argument for not demonstrating a genuine dispute of law or fact with the application.⁹⁰

e. Contention 4-C: The SAMA Analysis Inappropriately Relies on MACCS2

Contention 4-C states, “The SAMA analysis for Seabrook uses an outdated and inaccurate proxy to perform its SAMA analysis, the MACCS2 computer program.” FOTC/NEC Petition at 46. FOTC/NEC asserts that NextEra’s use of the MACCS2 code in conducting its SAMA analysis was “outdated,” the “wrong choice,” and may “underestimate the costs likely to be incurred as a result of a severe accident.” *Id.* at 46-47. As discussed above, because

⁸⁶ See *Riverkeeper, Inc.’s Request for Hearing and Petition to Intervene in Indian Point License Renewal Proceeding* and attached Exhibits, Nov. 30, 2007, at 68-69 (ADAMS Accession No. ML0734100931); *Riverkeeper, Inc.’s Response to Atomic Safety and Licensing Board Questions Regarding Contention EC-2*, Apr. 7, 2008 (ADAMS Accession No. ML0810804220).

⁸⁷ See *Indian Point*, LBP-08-13, 68 NRC at 187.

⁸⁸ *Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 & 2)*, LBP-03-17, 58 NRC 221, 240 (2003).

⁸⁹ See FOTC/NEC Petition at 44-46 (citing NUREG-1465 and NUREG-1150 and noting that NextEra should not have used a MAAP-generated source terms in its SAMA analysis).

⁹⁰ 10 C.F.R. § 2.309(f)(1)(vi).

FOTC/NEC has not demonstrated that use of a different code could result in the identification of an additional potentially cost-beneficial SAMA, FOTC/NEC has not shown that Contention 4-C is material to a finding the NRC Staff must make. Additionally, Contention 4-C lacks an adequate factual basis. As a result, the Board should not admit Contention 4-C pursuant to 10 C.F.R. § 2.309(f)(1)(iv), (v), and (vi).

FOTC/NEC provides several reasons to support its argument that the MACCS2 code is inaccurate and outdated, but none of those are adequately supported. In support of Contention 4-C, FOTC/NEC relies on an article from David Chanin that describes the development of the MACCS2 code. FOTC/NEC Petition at 46 (*citing* David Chanin, “The Development of the MACCS2: Lessons Learned,” (Dec. 17, 2009) at <http://chaninconsulting.com> (“MACCS2: Lessons Learned”)). In light of that article, FOTC/NEC states that the MACCS2 code was held to lesser quality assurance requirements, the ANSI/ANS 10.4 standard, when it was developed, rather than the higher NQA-a standard. *Id.* But, the author of the article states that the higher quality assurance requirements in the NQA-a standard would be appropriate for a code used to support a “deterministic authorization basis analyses.” MACCS2: Lessons Learned at 2 (emphasis removed). As discussed above, the SAMA analysis is part of the NRC’s NEPA consideration. It is not a deterministic authorization basis analysis. Consequently, the article does not support FOTC/NEC’s assertion that the MACCS2 code is not appropriate for the Seabrook SAMA analysis because it was not developed using the NQA-a quality assurance standard.

Next, the article refers to problems in “MACCS2 version 1.12,” MACCS2: Lessons Learned at 1, but the ER relies on version 1.13 of the MACCS2 code, ER at 4-39. FOTC/NEC has not shown that the problems identified by the article also apply to version 1.13 of the MACCS2 code, let alone the application of that code to the Seabrook SAMA analysis.

Moreover, the article actually suggests that NextEra appropriately selected the MACCS2

code for the Seabrook SAMA analysis. The developers of the MACCS2 code utilized the ANSI/ANS 10.4 standard for quality assurance. The user's guide for the code recommends,

When MACCS2 is used for authorization basis studies, it is very important to carefully review the code's phenomenological models and input parameter values to ensure that they conform to applicable guidance and are appropriate for the accident scenario being modeled. The identification of deficiencies in these areas could bring into question the safety basis of the facility.

MACCS2: Lessons Learned at 3 (quotations omitted and emphasis removed). But, the SAMA review is not an authorization basis study – it is a NEPA analysis. The article notes that for NEPA studies, “the chosen ANSI/ANS 10.4 would be an applicable QA standard.” *Id.* at 4. Thus, the article implies that the MACCS2 code was appropriate for the Seabrook SAMA analysis and NEPA review.

Furthermore, even if the SAMA analysis were considered an authorization basis study, the article acknowledges that the MACCS2 code may produce acceptable results provided the user employs sufficient caution in selecting phenomenological models and input parameter values. The article does not suggest that NextEra misused the MACCS2 in such a way. In fact, this statement indicates that, if used properly, the MACCS2 code could provide an adequate SAMA analysis. The validity of NextEra's inputs to the MACCS2 code is the subject of other contentions.

Finally, the article ends on a note that implies that the utilities that have employed the MACCS2 code for SAMA analyses in license renewals have ignored “the code's [quality assurance] shortcomings and lack of input justifications.” *Id.* at 5. But this article does not indicate how those applicants have misused the code or that NextEra did so in this case. Indeed, because the article was published more than half a year before NextEra submitted the Seabrook LRA, the article could not address the details of NextEra's Seabrook SAMA analysis. Rather, the article only stands for the unremarkable proposition that if the MACCS2 code is used improperly, it will produce unreliable results. But, this is hardly a reason to forego use of

the MACCS2 code altogether.

FOTC/NEC also claims that the MACCS2 code is defective because “there is no explanation of exactly how it works.” FOTC/NEC Petition at 46. But, the ER contains a nearly-200 page discussion of how the MACCS2 code works. FOTC/NEC claims that the ER does not describe how the code interacts with long term dose accumulation models. *Id.* at 46. But FOTC/NEC admits that the CHRONC model evaluates dose from seven days to thirty years – certainly a long term dose model. *Id.* at 47. Consequently, this portion of FOTC/NEC’s claim appears unsupported.

Last, FOTC/NEC asserts that the MACCS2 code is deficient because it “incorrectly models doses in the code’s EARLY and CHRONC modules.” *Id.* at 47. FOTC/NEC asserts that the code incorrectly assumes an indoor dose of zero when it should be equivalent to the outdoor dose. According to FOTC/NEC, if properly modeled, the indoor dose would increase by a factor of 2-4. *Id.* But, FOTC/NEC provides no alleged facts or expert opinion to support this claim. The voluminous materials the petition to intervene references do not appear to discuss the indoor dose during the EARLY or CHRONC module. Thus, this statement is precisely the type of unsupported assertion that the Commission has indicated will not support admission of a contention under 10 C.F.R. § 2.309(f)(1)(v), as discussed above.

While NRC regulations do not require applicants to use the MACCS2 code to undertake the SAMA analysis, “NRC guidance documents conclude that the MACCS2 code . . . is acceptable for performing SAMA analyses.” *Pilgrim*, CLI-10-11, 71 NRC at ___ (slip. op at 4) (*citing* Staff Guidance for Preparing Severe Accident Mitigation Alternative Analyses, 72 Fed. Reg. 45,466 (Aug. 14, 2007)). The Board in *Pilgrim* noted that, “it is necessary for the Staff to take a uniform approach to its review of [SAMA] analyses by license applicants and for performance of its own analyses, and it would be imprudent for the Staff to do otherwise without sound technical justification.” *Pilgrim*, LBP-07-13, 66 NRC at 142. In light of the routine use of

the MACCS2 code in SAMA preparation, the Board stated, “the Staff is fully justified in finding, after due consideration of the manner in which the code has been used, that analysis using this code is an acceptable method for performance of SAMA analysis.” *Id.* Consequently, the Board should reject this unsupported contention pursuant to 10 C.F.R. § 2.309(f)(1)(v).

f. Contention 4-D: Gaussian Plume

Contention 4-D alleges that the Seabrook SAMA analysis uses “an inappropriate air dispersion model, the straight-line Gaussian plume, and meteorological data inputs that did not accurately predict the geographic dispersion and deposition of radionuclides at Seabrook’s coastal location.” FOTC/NEC Petition at 47. This contention challenges NextEra’s use of the ATMOS atmospheric dispersion model within the MACCS2 code. *Id.* at 47-48. The ATMOS model assumes a “steady-state, straight-line Gaussian plume” that “functions much like a beam from a flashlight.” *Id.* In light of meteorological research, FOTC/NEC contends that NextEra should have used a “variable plume model such as AERMOD or CALPUFF.” *Id.* at 47. In support of this contention, FOTC/NEC offers a number of arguments, some of which lack an adequate basis under 10 C.F.R. § 2.309(f)(1)(v), some of which are adequately supported.

Specifically, to the extent FOTC/NEC has alleged that the use of the ATMOS model is categorically inapplicable to the Seabrook site, FOTC/NEC has not adequately supported its claim. But, to the extent FOTC/NEC has identified features of the Seabrook site that could impact the ATMOS model that the ER has not accounted for, such as the sea breeze effect, the varied terrain at Seabrook, and the possibility of hot spots, the contention is adequately supported. However, as discussed above, none of these arguments demonstrate a material dispute with the application because FOTC/NEC has not shown that any of these asserted errors in the SAMA analysis would be likely to lead to the identification of another cost-beneficial SAMA. Therefore the Board should not admit contention 4-D.

i. Use of the Gaussian Plume Model

First, FOTC/NEC argues that the use of the ATMOS model in the MACCS2 code is inappropriate because it relies on a “straight-line, steady-state” Gaussian plume. *Id.* at 48. But, FOTC/NEC has not produced an adequate factual basis for this claim. FOTC/NEC claims that site specific research for Seabrook demonstrates that the use of ATMOS is inappropriate because “winds are variable and dose will be more concentrated than modeled and extend over a larger area.” *Id.* at 48. FOTC/NEC cites to a number of studies that discuss the meteorological conditions near Seabrook, *id.* at 47 n. 21, but FOTC/NEC does not cite any support for its assertion that these studies indicate that the use of ATMOS will necessarily lead to a faulty SAMA analysis for the Seabrook license renewal. Moreover, FOTC/NEC does not provide any basis for its puzzling claim that use of a different atmospheric dispersion model than ATMOS will lead to a finding that doses will be both more concentrated and spread out over a larger area.

Second, FOTC/NEC contends that “the use of the ATMOS model to predict dispersion in a 50-mile radius of the plant” is unacceptable because the accuracy of the ATMOS model decreases at greater distances. *Id.* at 48. To support this portion of the contention, FOTC/NEC relies on an EPA guideline for calculating dispersion of air pollutants. Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions, 70 Fed. Reg. 68,218 (Nov. 9, 2005). This document does state, “The maximum distance for refined steady-state Gaussian plume model application for regulatory purposes is generally considered to be 50 km [(roughly 31 miles)].” *Id.* at 68,249. But the purpose of the guideline is to conduct a very different inquiry than a SAMA analysis. The EPA relies on the guideline to evaluate modeling of the environmental impacts of air emissions when it prepares and reviews source permits. *Id.* at 68,218.

In preparing models to assess the impacts of air emissions, the EPA has noted that

“[t]he greater the detail with which a model considers the spatial and temporal variations in emissions and meteorological conditions, the greater the ability to evaluate the source impact and to distinguish the effects of various control strategies.” 40 C.F.R. Part 51, Appx. W § 2.1.a. Thus, an estimate of a pollutant’s actual path is critical for an EPA emissions analysis. In contrast, as discussed above, a SAMA analysis does not rely on precise predictions of how releases will travel in the event of a severe accident. Rather, the purpose of the SAMA analysis is to fulfill the agency’s obligation to take a “hard look” at mitigation alternatives under NEPA by evaluating whether any potential SAMAs would be cost-beneficial. *Pilgrim*, LBP-07-13, 66 NRC at 142. Consequently, the EPA’s limitations on a steady-state Gaussian plume in the regulatory context do not imply that the use of a steady-state Gaussian plume model is inappropriate in the SAMA context.⁹¹

In fact, FOTC/NEC relies on another study specifically undertaken by the NRC to address concerns regarding the use of the Gaussian plume in the MACCS2 code for probabilistic risk assessments. NUREG/CR-6853 Comparison of Average Transport and Dispersion Among a Gaussian, a Two-Dimensional, and a Three-Dimensional Model, at xi, 41 (Oct. 2004) (ADAMS Accession No. ML043240034) (“NUREG/CR-6853”). NUREG/CR-6853 concluded that the MACCS2 code with the ATMOS model is accurate at distances up to 200 miles. *Id.* at 72. Consequently, within the context of the SAMA analysis, FOTC/NEC’s evidence

⁹¹ FOTC/NEC also notes that the MACCS2 guidance report states that the “code should be applied with caution at distances greater than ten to fifteen miles.” FOTC/NEC Petition at 52 (*citing* MACCS2 Computer Code: Application Guidance for Documented Safety Analysis, Final Report, at 3:8 (June 2004) (ADAMS Accession No. ML092640174)). But this document does not indicate that the code cannot model releases at greater distances.

In addition, FOTC/NEC asserts that the MACCS2 guidance report indicates that because the “code does not model dispersion” within 100 meters of the source, the code ignores “resuspension of contamination.” *Id.* But, FOTC/NEC has not supported this inference, or made any showing of how it would have any material effect on the SAMA analysis.

does not indicate that the ATMOS model is inaccurate at distances over 31 miles. Rather, the documents cited by FOTC/NEC indicate that the ATMOS model may be used at much greater distances for SAMA analyses.⁹²

Next, FOTC/NEC asserts that ATMOS cannot produce an appropriate SAMA analysis for Seabrook in light of meteorological conditions at the site. FOTC/NEC Petition at 49. But, FOTC/NEC has not provided any alleged facts or expert opinion for this conclusion. While FOTC/NEC has produced some evidence on the question of whether the ATMOS model adequately addresses the meteorological characteristics of the Seabrook site, it has produced no evidence for the much larger claim that the ATMOS model is fundamentally incapable of adequately accounting for such characteristics. *Compare id.* at 49 *with id.* at 49-53.

FOTC/NEC relies on a string of government studies to support the claim that the use of a steady-state, straight-line Gaussian plume model, such as ATMOS, is automatically inappropriate for a site with complex terrain, such as Seabrook. But none of these studies support FOTC/NEC's claim that ATMOS is categorically inapplicable to the Seabrook site. Rather, the studies either relate to emergency planning, which requires a very different type of analysis than SAMAs, or like the MACCS2: Lessons Learned article, simply recommend that a user exercise caution in selecting inputs for the MACCS2 code. Significantly, none of these studies specifically address the SAMA analysis for Seabrook.

FOTC/NEC cites several NRC documents that point to the limitations of straight-line

⁹² The Board in *Indian Point* admitted a similar aspect of a SAMA contention, which alleged that in light of the EPA guideline, the ATMOS model could not accurately model doses at greater distances. *Indian Point*, LBP-08-13, 68 NRC at 110-12. But, that contention, supported by an expert affidavit, did not cite NUREG/CR-6853, which undermines this assertion as discussed above. NYS Petition at 167.

Gaussian plume models for predicting air dispersion in the context of emergency planning.⁹³

But, these documents indicate that the purpose of emergency planning is very different from the purpose of the probabilistic risk assessment behind the SAMA analysis. These emergency planning documents are meant to estimate the possible consequences of radiological accidents in order to prevent adverse early and delayed health effects. RTM-96, Before You Begin. Consequently, in calculating potential exposures, these documents rely on actual data of where a plume has traveled, or is likely to travel, in order to best inform the public of how to limit exposure. *Id.* at Section F: Early Phase Dose Projections. In contrast, as discussed above, a SAMA analysis considers many scenarios to determine the overall risk of a severe accident in hundreds of possible conditions. Therefore, prior critiques of the steady-state Gaussian plume model in the emergency planning context do not suggest that the Gaussian plume model will not produce adequate results in the SAMA context.

A number of other NRC studies cited by FOTC/NEC do not reject using a steady-state Gaussian plume model for SAMA analysis at a site with varied terrain. These studies advance more modest claims. One study suggests that, at some sites with complex terrain, additional monitoring equipment “may be necessary.” Safety Guide 23: Onsite Meteorological Programs, at 23.4 (Feb. 17, 2002) (ADAMS Accession No. ML020360030); see also Reg. Guide 1.23, Meteorological Monitoring Programs for Nuclear Power Plants, Rev. 1, 11(March 2007) (ADAMS Accession No. ML070180736) (noting that at complex sites, additional monitoring

⁹³ FOTC/NEC Petition to Intervene at 54-56 (*citing* NUREG-0737, Supplement 1, Clarification of TMI Action Plan Requirements, 13 (Jan. 1983) (ADAMS Accession No. ML102560009); RTM-96: Response Technical Manual (NUREG/BR-0150, Vol. 1, Rev. 4), Appx. Q (Mar. 1996) (ADAMS Accession No. ML062560259) (“RTM-96”); What’s in the Black Box Known as Emergency Dose Assessment, Part 2, Slide 28 (Apr. 2009) (ADAMS Accession No. ML091050257)). FOTC/NEC also relies on an EPA guideline for effluent modeling. FOTC/NEC Petition at 58 (*citing* 70 Fed. Reg. at 68,218). But, as discussed above, the conclusions related to the EPA’s effluent modeling do not necessarily apply to the NRC’s SAMA analysis.

equipment or programs “may be necessary”). Another study indicates that adjustments to an air-dispersion equation “may be necessary to prevent misrepresentation of actual atmospheric transport and diffusion characteristics.” Reg. Guide 1.111, Rev. 1, Draft for Comment, Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors, at 1.111-9 – 1.111-10. (Jul. 1977) (ADAMS Accession No. ML003740354). One report cited by FOTC/NEC states that when applying the ATMOS model to areas with complex terrain “caution should be used.” NUREG/CR-6853 Comparison of Average Transport and Dispersion Among a Gaussian, a Two-Dimensional, and a Three-Dimensional Model, at 72 (Oct. 2004) (ADAMS Accession No. ML043240034). Last, one study indicates that in areas of complex terrain, “more detailed dispersion models may have to be considered.” NUREG/CR-6572, Rev. 1, Kalinin VVER-1000 Nuclear Power Station Unit 1 PRA, at 3-114 (Dec. 2005) (ADAMS Accession No. ML060450618).

FOTC/NEC also relies on a number of studies prepared by entities other than the NRC, but none of these demonstrate that application of the ATMOS model to a site with varied terrain, such as Seabrook, will necessarily result in an inadequate SAMA analysis. A report from the Department of Energy notes that Gaussian models “perform best” over regions with “minimal variation in terrain.” MACCS2 Computer Code: Application Guidance for Documented Safety Analysis, Final Report, at 3:8 (June 2004) (ADAMS Accession No. ML092640174). But, this simply states that such models perform best in flat regions, not that they will perform deficiently in areas with complex terrain. Likewise, a report from the National Research Council, cited by FOTC/NEC describes the history of air-dispersion models, including models developed after those incorporating the Gaussian plume, but it does not suggest that the Gaussian plume is an inappropriate tool for probabilistic analyses, such as the SAMA analysis for Seabrook. Tracking and Predicting the Atmospheric Dispersion of Hazardous Material Releases: Implications for Homeland Security (2003), 33-54 (available at [http://dels.nas.edu/ Report/Tracking-Predicting-](http://dels.nas.edu/Report/Tracking-Predicting-)

Atmospheric-Dispersion/10716). Last, FOTC/NEC cites several textbooks in environmental science and engineering, but these sources do not demonstrate that a Gaussian plume model is categorically ineffective in an area of complex terrain. FOTC/NEC Petition at 60-61.

Therefore, these studies certainly indicate that complex terrain may have an effect on a steady-state Gaussian plume model. But, none of these documents supports FOTC/NEC's bare assertion: "a straight line Gaussian plume model cannot account for the effects of complex terrain on the dispersion of pollutants from a source. Therefore its use is inappropriate for use for Seabrook's analysis to determine the potential area of impact and deposition in a severe accident." FOTC/NEC Petition at 53. Although ATMOS assumes a flat terrain, a licensee that selected appropriate input parameters could create a sufficiently reliable SAMA analysis to satisfy NEPA. The documents FOTC/NEC cites do not suggest otherwise. Thus, FOTC/NEC has not provided a sufficient basis for its categorical challenge to NextEra's use of a steady-state Gaussian plume in the Seabrook SAMA analysis. As the Commission has noted, "The question is not whether there are 'plainly better' atmospheric dispersion models or whether the SAMA analysis can be refined further." *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 37). The question is whether the SAMA analysis "resulted in erroneous conclusions." *Id.*

ii. The Sea Breeze Effect, Behavior of Plumes Over Water, and Terrain Effects

Next, FOTC/NEC contends that NextEra's SAMA analysis is inadequate because it does not adequately account for the sea breeze effect, the behavior of plumes over open water, or the impacts of the terrain at Seabrook on the SAMA analysis. *Id.* at 49-53. As discussed above, FOTC/NEC has not shown that these features of the Seabrook SAMA analysis are material, in that they would be likely to result in the identification of a cost beneficial SAMA. Therefore, this portion of the contention is inadmissible.

Nonetheless, FOTC/NEC has provided an adequate factual basis to support these

claims. Sea breezes result when uneven heating between the land and ocean causes a landward flow of cool air. *Id.*, Attachment B at 1. FOTC/NEC points out that the sea breeze effect can have an important impact on diffusion studies at seaside locations. *Id.* (citing Slade, *Meteorology and Atomic Energy*, § 2-3.5 (1968)). Moreover, FOTC/NEC has produced several studies that indicate that the sea breeze effect plays an important role at New Hampshire sites. *Id.* at 48 (citing, e.g., Attachment B at 2, Samuel Miller et al., *Synoptic-Scale Controls on the Sea Breeze of the Central New England Coast*, 18 WEATHER & FORECASTING 236 (2003)). Likewise, FOTC/NEC argues that the SAMA analysis is inadequate because it assumes that a radioactive plume blown out to sea will not have a further impact when the plume blown may remain tightly concentrated and create a “hot spot” if subsequently blown back to land. *Id.* at 50 (citing Jan Beyea, Ph.D., Report to the Massachusetts Attorney General on the Potential Consequences of a Spent Fuel-Pool Fire at the Pilgrim or Vermont Yankee Nuclear Plant, at 11 (May 25, 2006) (ADAMS Accession No. ML071840568)). Finally, FOTC/NEC has produced numerous documents that indicate that the MACCS2 assumes flat terrain and that the MACCS2 code should be used with caution at sites with varied terrain. *Id.* at 50-61. Moreover, FOTC/NEC relies on statements from the ER that indicate that the terrain at Seabrook is varied. *Id.* at 53.

In *Pilgrim*, the petitioners proffered a similar contention that was admitted. In that case, the petitioner raised a challenge to the MACCS2 code’s treatment of the meteorological effects, including the sea breeze effect. Request for Hearing and Petition to Intervene by Pilgrim Watch, at 35-36 (citing J.D. Spengler and G.J. Keeler, *Feasibility of Exposure Assessment for the Pilgrim Nuclear Power Plant*, Prepared for the Massachusetts Department of Public Health (May 12, 1988)). The petitioner also challenged the MACCS2 code’s treatment of terrain effects. *Id.* at 35. The Board admitted the contention as a challenge to the “meteorological patterns” at the site. *Pilgrim*, LBP-06-23, 64 NRC at 341. On appeal from the Board’s ruling granting a motion

for summary disposition, the Commission concluded that the sea breeze effect, the “hot spots” claim, and the terrain effects claim were within the scope of the admitted contention. *Pilgrim*, CLI-10-11, 71 NRC ___ (slip. op. at 5, 14, 25).

Likewise, in this case, NextEra’s SAMA analysis does not indicate how it accounts for the sea breeze effect at Seabrook, the possibility of a “hot spot,” or terrain effects. Consequently, to the extent that FOTC/NEC has raised concerns about how NextEra’s SAMA analysis accounts for these effects (either through conservative assumptions, a bounding analysis, or a sensitivity study, for example) FOTC/NEC has established a sufficient basis for a limited portion of FOTC/NEC Contention 4-D. But, as discussed above, to the extent FOTC/NEC alleges that the methods chosen by NextEra for the SAMA analysis could never produce adequate results for SAMA purposes, that allegation is unsupported. Moreover, because FOTC/NEC has not shown that any part of Contention 4-D would lead to the identification of an additional cost-beneficial SAMA, the Board should reject it in its entirety because it is not material even though a part of it has an adequate factual basis.

iii. Additional Monitoring Stations

Finally, FOTC/NEC alleges that the SAMA analysis is deficient because it relies on meteorological inputs recorded by one anemometer for one year. FOTC/NEC Petition at 61. FOTC/NEC claims, “Measurement data from one station will definitely not suffice to define the sea breeze or capture variability.” FOTC/NEC Petition at 53. But FOTC/NEC has not provided any citation or expert testimony to support this claim. Consequently, this portion of FOTC/NEC’s contention is unsupported and therefore fails to meet the requirement of 10 C.F.R. § 2.309(f)(1)(v).

g. Contention 4-E: NextEra Inputs Minimized and Inaccurately Reflected the Economic Consequences of a Severe Accident

Contention 4-E states, “[NextEra used] inputs that minimized and inaccurately reflected

the economic consequences of a severe accident, including decontamination costs, cleanup costs and health costs, and that either minimized or ignored a host of other costs.” FOTC/NEC Petition at 61. Contention 4-E is in part a generic challenge to the Commission regulations and is therefore outside the scope of the proceeding. In addition, while FOTC/NEC offers several arguments for why NextEra’s inputs are inaccurate, none of them raise a material issue.⁹⁴ Specifically, FOTC/NEC does not demonstrate that the use of different inputs could result in the identification of potentially cost-beneficial SAMAs. Moreover, parts of Contention 4-E are not adequately supported. Thus, the Board should not admit Contention 4-E pursuant to 10 C.F.R. § 2.309(f)(1)(iii), (iv), (v) and (vi).

i. Decontamination and Clean Up Costs

aa. FOTC/NEC’s Cost Formula Argument Does Not Raise a Material Issue

FOTC/NEC argues that NextEra’s SAMA analysis is insufficient because “the cost formula used in the MACCS2 underestimates costs likely to be incurred as a result of a dispersion of radiation.” FOTC/NEC Petition at 62. FOTC/NEC argues that a nuclear reactor release will result in the dispersion of small-sized radionuclides that are more expensive to

⁹⁴ The Staff recognizes that the *Indian Point* Board admitted a similarly supported contention. *Indian Point*, LBP-08-13, 68 NRC at 102 (New York State Contention 12). See New York State Petition at 140-45. In admitting the contention, the Board noted:

The Board finds that NYS-12 is neither a challenge to the acceptability of using the MACCS2 computer program nor a direct challenge to MACCS2 itself. Rather, the contention challenges the cost data for decontamination and cleanup used by MACCS2. NYS thus raises questions of material fact about the Applicant’s SAMA analysis. . .

Indian Point, LBP-08-13, 68 NRC at 102. Importantly, the Board’s determination concerning what is a material fact in a SAMA contention preceded the Commission’s pronouncement in *Pilgrim* that refinement of a SAMA analysis for its own sake is not a valid subject for a contention. *Pilgrim*, CLI-09-11, 69 NRC 533. In *Pilgrim*, the Commission made clear that the material issue in a SAMA analysis “is whether any additional SAMA should have been identified as potentially cost beneficial. . . .” *Id.*

remove and clean up than large sized radionuclides, which are assumed in NextEra's cost-formula. *Id.* at 62-63 (citing to WASH-1400). However, FOTC/NEC has not demonstrated a material issue with the application. Specifically, FOTC/NEC has not shown that a different cost formula or consideration of economic infrastructure and "multiplier effects" could result in another cost-beneficial SAMA.⁹⁵ As discussed above, a SAMA contention that does not demonstrate that its challenge could lead to the identification of another cost-beneficial SAMA has not raised a material dispute with the application. *Pilgrim*, CLI-10-11, 71 NRC ___ at 39. Thus, this contention is not admissible pursuant to 10 C.F.R. § 2.309(f)(1)(vi).

bb. FOTC/NEC's Claim that Radioactive Waste Disposal Must be Analyzed is Outside the Scope of this Proceeding

FOTC/NEC claims that NextEra's SAMA analysis improperly "ignored radioactive waste disposal." FOTC/NEC Petition at 63. This argument is outside the scope of the proceeding as it directly challenges the generic determinations in Table B-1 of Appendix B to Part 51 concerning uranium fuel cycle and waste management. Absent a waiver, a generic challenge to the NRC's generically applicable regulations is impermissible. 10 C.F.R. § 2.335(a). As noted above, FOTC/NEC did not petition the Commission for a waiver. Table B-1 codifies the Commission's determination, supported by the GEIS, that all uranium fuel cycle and waste management issues, including low-level waste storage and disposal, mixed waste storage and disposal, on-site spent fuel storage, and transportation are Category 1 issues with a small impact. Thus, NextEra's ER can incorporate the GEIS's analysis into its ER and not offer any additional

⁹⁵ FOTC/NEC Petition at 67-68. See Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Regarding Pilgrim Nuclear Power Station – Final Report (NUREG-1437, Supplement 29) (noting NRC Staff's determination that accounting for these things will not change SAMA analyses).

analysis on these issues.⁹⁶ NextEra did not identify any new and significant information regarding these Category 1 issues and FOTC/NEC has not contradicted this conclusion. ER, App. E at 4-3. Thus, NextEra's ER did not need to include additional analysis of radiological waste disposal.

cc. FOTC/NEC's Ecological Restoration Claims Lack an Adequate Basis

FOTC/NEC argues that NextEra's analysis should have considered "forests, wetlands and shorelines [which] cannot realistically be clean[ed] and decontaminated." FOTC/NEC Petition at 64. Notably, FOTC/NEC provides no facts, expert opinion, or citations for its assertion that these types of land cannot be cleaned and decontaminated. In fact, FOTC/NEC notes that NextEra's ER did in fact recognize that there are beaches, rivers, wetlands, forests and park land within 50 miles of Seabrook. *Id.* It is well settled that "the Commission will not accept the filing of a vague, unparticularized [contention], unsupported by alleged fact or expert opinion and documentary support."⁹⁷ Therefore, this general and unsupported assertion is inadmissible. *Fansteel, Inc.* CLI-03-13, 58 NRC at 203.

dd. FOTC/NEC's Claims Regarding Urban Areas, Cleanup Standards, and Evacuation Costs Do Not Raise a Material Issue and Lack Basis

Next, FOTC/NEC argues that "urban areas will be considerably more expensive and time consuming to decontaminate and clean than rural areas." FOTC/NEC Petition at 64. In support of this argument, FOTC/NEC points to the 1996 Sandia National laboratories report concerning site restoration costs and two studies which considered intentional attacks. *Id.* at

⁹⁶ *Turkey Point*, CLI-01-17, 54 NRC at 12. See also Part 51, Subpt. A, App. B.

⁹⁷ *Palisades*, CLI-07-18, 65 NRC at 414 (quoting *Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 295 (2000)).

64-66 (citing to Site Restoration: Estimation of Attributable Costs from Plutonium-Dispersal Accidents, SAND96-0957, David Chanin, Walt Murfin, UC-502, (May 1996)), *available at* <http://chaninconsulting.com/index.php?resume>) (“Sandia report”); Barbara Reichmuth et al., Economic Consequences of a Rad/Nuc attack: Cleanup Standards Significantly Affect Cost; Robert Luna, Survey of Costs Arising from Potential Radionuclide Scattering Events, Sandia National laboratories, WM2008 Conference, Feb. 24-28, 2008, Phoenix AZ).

Based on these studies, FOTC/NEC argues that NextEra should have incorporated the analytical framework in the Sandia report, *id.* at 66, and accounted for the fact that “current EPA and NRC cleanup standards differ [as] these differences have implications for both the pace and ultimate cost of cleanup.” *Id.* at 65. The Staff recognizes that FOTC/NEC has provided adequate support for its assertion that smaller particles will create higher cleanup costs, and that urban areas are more costly to clean up than rural areas. However, FOTC/NEC has not adequately supported its claims that the “economic losses stemming from the stigma effects of a severe accident [at Seabrook] would be staggering,” FOTC/NEC Petition at 66-67, given that Seabrook is located near “tourist, educational, transportation, and financial centers.” *Id.* at 66. Likewise, FOTC/NEC has not provided any factual or expert support for its claim that NextEra’s ER should have discussed “multiplier effects” or “the loss of, and costs to remediate the economic infrastructure that make business, tourism and other economic activity possible.” *Id.* at 67-68. Because FOTC/NEC has not made any demonstration, beyond pure assertion, for these claims, they lack the basis required by 10 C.F.R. § 2.309(f)(1)(v). Moreover, as discussed above, FOTC/NEC does not demonstrate that using a different analytical framework or considering the differences in EPA and NRC cleanup standards or economic losses or “multiplier effects” would identify any additional SAMA as potentially cost beneficial. Pilgrim, CLI-09-11, 69 NRC at 533. Therefore, this argument does not raise a material issue.

ii. Health Costs

aa. FOTC/NEC's Challenge of the \$2000/person-rem Factor Lacks Basis and Does Not Raise a Material Issue

FOTC/NEC argues that “[t]he population dose conversion factor of \$2000/person-rem used by NextEra to estimate the cost of the health effects generated by radiation exposure is based on a deeply flawed analysis and seriously underestimates the cost of the health consequences of severe accidents.” FOTC/NEC Petition at 68-69. FOTC/NEC argues that the \$2000/person-rem conversion factor is inappropriate for two reasons. *Id.*

First, FOTC/NEC argues that “it is inappropriate to use a conversion factor that does not include deterministic effects.” *Id.* at 69. Specifically, FOTC/NEC asserts that it expects that a large number of early fatalities could occur for some of the severe accident scenarios evaluated by NextEra at Seabrook. *Id.* FOTC/NEC argues that this assertion is “consistent with the findings of [Table 5.5 of] the [GEIS].” *Id.* at 69 & n. 40.

However, NextEra’s use of the \$2000/person-rem factor is consistent with standard NRC practice and existing NRC guidance, NUREG/BR-0184, Regulatory Analysis Technical Handbook, Final Report., at 5, 26 (June 1997).⁹⁸ As FOTC/NEC points out, “the NRC believes that regulatory issues involving deterministic effects and/or early fatalities would be very rare, and can be addressed on a case-specific basis, as the need arises.”⁹⁹ While FOTC/NEC asserts that they estimate a large number of early fatalities, they offer no estimate, much less an

⁹⁸ See *a/so* NUREG-1530. In accordance with guidance in NUREG-1530, the NRC has begun a review of the \$2000/person-rem factor. If the review results in an updated factor, new guidance will be provided to the licensees. Until this occurs, licensees can continue to follow the current guidance in NUREG-1530, NUREG/BR-0184, and NUREG/BR-0058, Rev. 4 and use the \$2000/person-rem factor in their ER analyses.

⁹⁹ FOTC/NEC Petition at 70 (citing U.S. NRC “Reassessment of NRC’s Dollar Per Person-Rem Conversion Factor Policy (1995), *op cit.*, p. 13).

estimate challenging the estimates in Table 5.5 of the GEIS.¹⁰⁰ Therefore, this argument lacks an adequate basis, as it offers only an unsupported assertion. 10 C.F.R. § 2.309(f)(1)(v).

Moreover, this argument does not raise a material issue of law or fact, as it does not indicate how NextEra's ER analysis failed to meet a regulatory or statutory requirement.¹⁰¹ The mere fact that other calculations are possible does not invalidate NextEra's analyses. The material issue in a SAMA contention is whether a different analysis would be likely to result in identification of an additional potentially cost-beneficial SAMA. *Pilgrim*, CLI-09-11, 69 NRC at 533. For these reasons, another Board rejected a similar challenge to the \$2000/person-rem standard. *Indian Point*, LBP-08-13, 68 NRC at 187.

FOTC/NEC also argues that "for certain severe accident scenarios at Seabrook evaluated by NextEra, we estimate that considerable numbers of people would receive doses high enough so that the [dose- and dose-rate reduction effectiveness factor ("DDREF")] should not be applied." FOTC/NEC Petition at 70. Therefore, FOTC/NEC asserts that:

the \$2000/person-rem factor, as derived by NRC, also underestimates the total cost of the latent cancer fatalities that would result from a given population dose because it assumes that all exposed persons receive dose commitments below the threshold at which the [DDREF] (typically a factor of 2) should be applied.

Id. FOTC/NEC argues that a "single cost conversion factor, based on a DDREF of 2, is not appropriate because for some individuals, a "one-rem dose would be worth 'more' because it would be more effective at cancer induction than for individuals receiving doses below the threshold." *Id.* at 70. FOTC/NEC provides an alternative way "to evaluate the cost equivalent of

¹⁰⁰ For Seabrook Station 1 and 2, Table 5.5 of the GEIS provides that the expected early fatalities (persons/reactor year) will be 0.0006; the expectant latent fatalities (persons/reactor year) will be 0.0075 (nonnormalized) and 0.0022 (normalized); and the expected total dose (person-rem/reactor year) will be 105 (nonnormalized) and 30.78 (normalized).

¹⁰¹ See *Indian Point*, LBP-08-13, 68 NRC at 187.

the health consequences resulting from a severe accident.” *Id.* at 71.

Specifically, FOTC/NEC argues NextEra should “simply . . . sum the total number of early fatalities and latent cancer fatalities, as computed by the MACCS2 code, and multiply by the [NRC’s value of a statistical life figure of 3 million].” *Id.* at 71. However, FOTC/NEC does not indicate which severe accident scenarios at Seabrook raise these concerns, or provide factual or expert support for its alternative method.¹⁰² Therefore, this argument lacks an adequate basis. As discussed above, this argument also does not raise a material issue of law or fact.¹⁰³

bb. FOTC/NEC Has Not Established the Relevancy of the 1982 Sandia National Lab Report or Supported its Claims About the Report

Next, FOTC/NEC argues that a 1982 Sandia National Lab Report explains “why NextEra’s estimates of how many lives might be lost are too low.” FOTC/NEC Petition at 71 (citing Calculation of Reactor Accident Consequences, U.S. Nuclear Power Plants (CRAC-2), Sandia National Laboratory, 1982). FOTC/NEC refers to peak fatality and peak injury estimates by CRAC-2, but argues that those estimates are “based on old, and now outdated dose response models.” *Id.* However, FOTC/NEC has not provided any link between CRAC-2 and the Seabrook SAMA analysis. Therefore, FOTC/NEC has not shown why the report is relevant. Moreover, FOTC/NEC provides no alleged facts or expert opinion to support its claim that the CRAC-2 dose response models are outdated. Thus, this is an unsupported assertion that will

¹⁰² It appears that this is the same approach recommended by Dr. Lyman in the Indian Point license renewal proceeding, where a similar challenge to the \$2000/person-rem factor was raised. See Riverkeeper, Inc.’s Request for Hearing and Petition to Intervene in Indian Point License Renewal Proceeding and attached Exhibits, at 73 (Nov. 30, 2007) (ADAMS Accession No. ML0734100931). Notably, the Indian Point Board found the challenge inadmissible, noting that it failed to raise a material issue of fact or law. *Indian Point*, LBP-08-13, 68 NRC 43 at 187-88.

¹⁰³ *Indian Point*, LBP-08-13, 68 NRC 54, 187 (2008).

not support admission of a contention under 10 C.F.R. § 2.309(f)(1)(v).

cc. FOTC/NEC's Claim that NextEra Did Not Consider Cancer Incidence or Other Health Effects Lacks an Adequate Factual Basis

FOTC/NEC also argues that NextEra did not consider cancer incidence or "many other potential health effects from exposure in a severe radiological event."¹⁰⁴ However, the \$2000/person-rem factor implicitly considers these effects as it represents "the cost associated with the harm caused by radiation exposure with respect to the causation of 'stochastic health effects,' that is, fatal cancers, nonfatal cancers, and hereditary effects."¹⁰⁵ As discussed above, FOTC/NEC has not demonstrated that use of this factor is inappropriate. Therefore, this argument lacks the factual basis required by 10 C.F.R. § 2.309(f)(1)(v).¹⁰⁶

dd. FOTC/NEC Does Not Demonstrate a Deficiency in NextEra's Evacuation Analysis

FOTC/NEC claims that NextEra's "evacuation time input data into the [MACCS2] code were unrealistically low and unsubstantiated; and that if correct evacuation times and assumptions regarding evacuation had been used, the analysis would show far fewer [people] will evacuate in a timely manner, increasing health related costs." FOTC/NEC Petition at 72.¹⁰⁷

¹⁰⁴ FOTC/NEC Petition at 71 (citing National Academy of Sciences, BEIR VII Report, (2005)).

¹⁰⁵ NUREG-1530, Reassessment of NRC's Dollar Per Person-Rem Conversion Factor Policy (1995) (ADAMS Accession No. ML0619100650) ("NUREG-1530").

¹⁰⁶ To the extent that this argument attempts to challenge the Commission's generic determination in App. B to Subpt. A of Part 51 concerning radiation exposure to the public during the license renewal term, it is outside the scope of the proceeding. See Table B-1; 10 C.F.R. § 2.335.

¹⁰⁷ FOTC/NEC notes later in this portion of their argument that "the primary model is flawed." As discussed above, FOTC/NEC's generic challenges to the MACCS2 code are not supported by an adequate basis and are not material.

FOTC/NEC argues that NextEra “failed to reference specific KLD-type actual time estimates,¹⁰⁸ [and] instead references the ‘paper plan,’ Seabrook Station Radiological Emergency Response Plan, Rev. 56, July 2008.” *Id.* at 72-73 (internal citation added).¹⁰⁹

Specifically, FOTC/NEC has not established that NextEra’s use of the evacuation time input data from its emergency response plan was inadequate or was used improperly by NextEra.¹¹⁰ Instead, FOTC/NEC only argues that an alternative analysis should have been completed. This type of unsupported assertion lacks the basis required under 10 C.F.R. § 2.309(f)(1)(v). Moreover, FOTC/NEC has not demonstrated that the use of KLD-type actual time estimates would identify additional cost beneficial SAMAs. *Pilgrim*, CLI-09-11, 69 NRC at 532-33. Therefore, this argument does not demonstrate a genuine dispute of law or fact with the application. 10 C.F.R. § 2.309(f)(1)(vi).

iii. **FOTC/NEC’s Claim that NextEra Underestimated or Totally Ignored a Myriad of Other Economic Costs Lacks an Adequate Factual Basis**

Finally, FOTC/NEC argues that NextEra underestimated or totally ignored a myriad of other economic costs that “when added together would in all likelihood add up collectively to a significant amount.” FOTC/NEC Petition at 73. FOTC/NEC provides no facts, expert opinion, or citation for its assertion. It is well settled that “the Commission will not accept the filing of a

¹⁰⁸ See FOTC/NEC Petition at 72 n. 45 (referencing Krestinina LY, Preston DL, Ostroumova EV, Degteva MO, Ron E, Vyushkova OV, et al. 2005. Protracted radiation exposure and cancer mortality in the Techa River cohort. *Radiation Research* 164(5):602-611, *available at* <http://www.bioone.org/doi/abs/10.1667/RR3452.1>).

¹⁰⁹ FOTC/NEC notes that there is no indication of whether the following site-specific variables were taken into consideration in NextEra’s analysis: shadow evacuation; evacuation time estimates during inclement weather coinciding with high traffic periods such as commuter traffic, peak commute time, holidays, summer beach/holiday traffic; and notification delay delays. FOTC/NEC Petition at 73.

¹¹⁰ *McGuire/Catawba*, LBP-03-17, 58 NRC at 240.

vague, unparticularized [contention], unsupported by alleged fact or expert opinion and documentary support.”¹¹¹ Therefore, this general and unsupported assertion is inadmissible. *Fansteel*, CLI-03-13, 58 NRC at 203.

h. Contention 4-F: Uncertainty Analysis

Last, FOTC/NEC claims that “NextEra fails to consider the uncertainties in its consequence calculation resulting from meteorological variation by using only mean values for population dose and offsite economic cost estimates.” FOTC/NEC Petition at 74. But, FOTC/NEC has not provided sufficient factual support for Contention 4-F. Moreover, FOTC/NEC has not shown that Contention 4-F would result in identifying a cost-beneficial SAMA. Consequently, it does not meet the admissibility requirements of 10 C.F.R. §§ 2.309(f)(1)(iv), (v) or (vi).

FOTC/NEC notes that the SAMA analysis for Seabrook in fact contains a sensitivity analysis which applied an “uncertainty factor” of 1.90 to the SAMA analysis. *Id.* (citing ER at F-158). The ER explains that NextEra applied the uncertainty factor to the SAMA analysis by multiplying the mean frequency values of a severe accident by the uncertainty factor to arrive at “upper bound” benefits. ER at F-158. “The uncertainty factor applied is the ratio of the 95th percentile value of the CDF from the PRA uncertainty analysis to the mean value of the CDF. For Seabrook Station, the 95th percentile value of the CDF is 2.75E-05/yr; therefore, the uncertainty factor is 1.90.” *Id.*

FOTC/NEC states that this “approach at ‘proof’ is not convincing.” FOTC/NEC Petition at 75. But, FOTC/NEC has not produced any alleged facts or expert opinion to support its

¹¹¹ *Palisades*, CLI-07-18, 65 NRC at 414 (quoting *Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 295 (2000)).

assertion that this approach is deficient. Moreover, FOTC/NEC has not pointed to any particular part of NextEra's uncertainty analysis that it finds unconvincing.

Instead, FOTC/NEC cites to a number of sources to support its claim that the Seabrook SAMA analysis does not appropriately account for uncertainty. But, FOTC/NEC takes many of these citations out of context, and none of them support the claim that the Seabrook SAMA analysis has inappropriately accounted for uncertainty. First, FOTC/NEC relies on a report filed in the Indian Point license renewal proceeding that found that if the SAMA analysis for that plant had used the 95th percentile for meteorological data, instead of the mean value, the potential benefits of SAMAs may have been three to four times greater. FOTC/NEC Petition at 74 (*citing* Edwin S. Lyman, A Critique of the Radiological Consequence Assessment Conducted in Support of the Indian Point Severe Accident Mitigation Alternatives Analysis, at 4 (Nov. 2007) (ADAMS Accession No. ML073410093). But, FOTC/NEC has not demonstrated that the results of this report apply to Seabrook. More importantly, this report does not explain how a sensitivity analysis based on the CDF is inadequate for SAMA purposes. It only states that one that assumed a 95th percentile value for meteorological data would be more conservative. This may be true, but neither FOTC/NEC nor the report upon which it relies, have made any demonstration that such an assumption is needed for an adequate SAMA analysis at Seabrook. Indeed, the Board rejected the contention this report supported in *Indian Point*. *Indian Point*, LBP-08-13, 68 NRC at 185-88.

Next FOTC/NEC cites to an article for the proposition that "quantitative results of PRAs, in particular, are subject to various types of uncertainties." *Id.* at 75 (*citing* Jamali Article at 935). But, as discussed above, NextEra has already conducted an analysis to account for uncertainties. Thus, this article, which primarily addresses new reactor licensing, does not support FOTC/NEC's claim.

Last, FOTC/NEC relies on a portion of the GEIS to support its claim that "Seabrook's

SAMA cost-benefit evaluation should be based on the 95th percentile of meteorological distribution to be consistent with the approach taken in the License Renewal GEIS.” *Id.* But, the section of the GEIS FOTC/NEC cites does not address SAMA analysis. Rather, that section concerns adverse health effects from atmospheric releases in general. GEIS at § 5.3.3.2.1. Moreover, that section does not indicate that use of 95th percentile values is necessary to accurately assess environmental impacts, only that the use of such an upper confidence bound “provides even greater assurance that the GEIS does not underestimate future environmental impacts.” *Id.* Consequently, this section from the GEIS does not support FOTC/NEC’s unfocused assertion that the Seabrook uncertainty analysis is somehow defective.

In *Pilgrim*, the Commission explicitly noted that it “is NRC practice to utilize the *mean* values of the consequence distributions for each postulated release scenario or category.”

Pilgrim, CLI-10-11, 71 NRC __ (slip op. at 38). The Commission continued,

As a policy matter, license renewal applicants are not required to base their SAMA analysis upon consequence values at the 95th percentile consequence level (the level used for the GEIS severe accident environmental impacts analysis). Unless it looks genuinely plausible that inclusion of an additional factor or use of other assumptions or models may change the cost-benefit conclusions for the SAMA candidates evaluated, no purpose would be served to further refine the SAMA analysis, whose goal is only to determine what safety enhancements are cost-effective to implement.

Id. As discussed above, FOTC/NEC has not attempted to show that their proposed refinement to NextEra’s SAMA analysis would identify an additional cost-beneficial SAMA. Consequently, this is precisely the type of challenge to a SAMA analysis that the Commission has previously cautioned should not form the basis for a hearing.¹¹²

As a result, FOTC/NEC has not produced a sufficient basis for its claim that the ER

¹¹² Although the Commission did find that it would be reasonable for the Board to consider this issue on remand, the Commission did not find that the petitioner had necessarily proffered an admissible contention on this ground. *Pilgrim*, CLI-10-22, 72 NRC __ (slip op. at 8 n. 34).

inadequately accounts for uncertainty in the PRA underlying the SAMA analysis. The support FOTC/NEC has produced for this contention discusses uncertainty in PRA's generically but does not provide any indication that the allotment for uncertainty in the Seabrook SAMA analysis is deficient. Consequently, FOTC/NEC has not produced a sufficient basis for this part of its claim under 10 C.F.R. § 2.309(f)(1)(v) or (vi). As a result, the Board should not admit this challenge to NextEra's SAMA analysis.

i. Conclusion

i. Contention 4 is Not Material

Contention 4 is inadmissible because FOTC/NEC has not shown that it is material. Contrary to Commission precedent, FOTC/NEC has failed to demonstrate that any of its challenges to the Seabrook SAMA analysis would result in the identification of an additional cost-beneficial SAMA. *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 39). Instead, FOTC/NEC relies on an unsupported assertion that it should be "obvious" that the alleged errors would cause at least one SAMA to become cost-beneficial. FOTC/NEC Petition at 76. But such speculation cannot meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv) and (vi) that a petitioner demonstrate that the contention is material. A contention must meet all of the requirements of 10 C.F.R. § 2.309(f)(1). Consequently, all of FOTC/NEC Contention 4 is inadmissible.

ii. Parts of Contention 4 are Outside the Scope of this Proceeding

In addition, parts of Contention 4 are outside the scope of this proceeding. Contention 4-A is a challenge to the use of probabilistic methodology in SAMA analysis, invites the Board to consider the effects of a terrorist attack on the SAMA analysis, and challenges Table B-1's determination on societal and economic impacts, Contention 4-B challenges NextEra's treatment of spent fuel pool accidents in the SAMA analysis, and Contention 4-E challenges the impacts of radioactive waste disposal. All of these issues are outside the scope of license renewal. As a result, these portions of FOTC/NEC's SAMA contentions are inadmissible

pursuant to 10 C.F.R. § 2.309(f)(1)(iii).

iii. Summary of Staff's Position on Whether Each Part of
Contention 4 is Supported by an Adequate Basis

Finally, each contention must be supported by an adequate factual basis pursuant to 10 C.F.R. § 2.309(f)(1)(v) and (vi). Contentions 4-A, 4-B, 4-C, and 4-F do not meet this requirement and are therefore inadmissible. FOTC/NEC has not produced adequate support for the claims in Contention 4-A that NextEra's risk definition is inappropriate or that PRA uncertainties are large and unknowable. FOTC/NEC has not produced adequate support for the claims in Contention 4-D that a Gaussian plume model is categorically incapable of producing an adequate SAMA analysis at Seabrook and that the weather data NextEra gathered for the SAMA analysis is inadequate. But, FOTC/NEC has produced support for the portion of Contention 4-D that asserts that SAMA analysis for Seabrook must account for the sea breeze effect, the potential for hot spots, and the possible impacts of the terrain on the SAMA analysis. With respect to Contention 4-E, to the extent it challenges the size of particles in the clean up models, it contains an adequate basis. But, the remainder of the claims in Contention 4-E are unsupported. FOTC/NEC has not supported its claim that NextEra's use of evacuation time input data from its emergency response plan was inadequate or was used improperly by NextEra. Further, FOTC/NEC has not demonstrated that the use of KLD-type actual time estimates would identify additional cost beneficial SAMAs. Moreover, as discussed above, FOTC/NEC has not shown that the challenges raised by FOTC/NEC Contention 4 could result in identifying a potentially cost-beneficial SAMA. Thus, FOTC/NEC Contention 4 is not material and the Board should not admit it pursuant to 10 C.F.R. § 2.309(f)(1)(iv).

COMPILATION OF THE CLB IS NOT REQUIRED

5. Compilation of the CLB Is Not Required and the Applicant's Compliance
with Its CLB Is Outside the Scope of This Proceeding

In concluding its Petition, FOTC/NEC argues that while its contentions are not intended

to challenge the adequacy of Seabrook's current licensing basis ("CLB"), FOTC/NEC is not able to fully assess whether Seabrook's CLB will be continued and maintained throughout the period of extended operation because the CLB in its entirety is not readily accessible. The entire CLB, FOTC/NEC asserts, should be readily accessible. See FOTC/NEC Petition at 77-78. In so doing, FOTC/NEC suggests the license renewal review cannot be adequate if the review does not consider if the licensee is currently managing aging adequately. *Id.* at 78-79. As explained below, the Commission considered and addressed these arguments in promulgating the license renewal rule and in the license renewal rule itself. Thus, FOTC/NEC's arguments constitute challenges to the Commission's regulations and this proceeding is not the proper forum for making general challenges to the Commission's regulations. See *Oconee*, CLI-99-11, 49 NRC at 334 (stating that a petitioner may not demand an adjudicatory hearing to attack generic NRC requirements or regulations or to express generalized grievances about NRC policies).

The Commission expressly considered and rejected a requirement that licensees compile and submit their current licensing basis as part of their license renewal applications. *1991 License Renewal Rule*, 56 Fed. Reg. at 64,952. Therein the Commission explained that the proposed license renewal rule would have required applicants to: "compile a list of documents identifying the portions of the current licensing basis relevant to the integrated plant assessment," submit that list as part of the application, review the documents on the compilation list "for the purpose of determining the structures, systems, and components to be evaluated and the acceptance criteria to be used in the integrated assessment," and "maintain 'all documents describing the CLB' in an auditable and retrievable form." *Id.* The Commission then explained that after consideration of the large number of public comments concerning CLB compilation requirements, it had concluded "it is not necessary to compile, review, and submit a list of documents that comprise the CLB" *Id.* The Commission reaffirmed this position in the 1995 revision to the license renewal rule, stating unequivocally, "Compilation of the CLB is

unnecessary to perform a license renewal review.” *1995 License Renewal Rule*, 60 Fed. Reg. at 22,473. Thus, FOTC/NEC’s assertion that licensee renewal applicants should be required to compile their CLB for license renewal is a generalized attack on the Commission’s regulations and beyond the scope of this proceeding.

The Commission has also expressly stated that the adequacy of the applicant’s CLB and the applicant’s compliance with its CLB are beyond the scope of license renewal. These matters are not within the scope of license renewal proceedings because the Commission’s on-going regulatory process, which includes generic and plant-specific reviews, plant inspections, and enforcement actions, ensures the adequacy of and compliance with the CLB. *Pilgrim*, CLI-10-14, 71 NRC __ (slip op. at 4); *1995 License Renewal Rule*, 60 Fed. Reg. at 22,473. The principle that current compliance with the CLB is outside the scope of license renewal is explicitly incorporated into the Commission’s license renewal rule. Pursuant to 10 C.F.R. § 54.30(a), if there is not reasonable assurance that licensed activities will be conducted in accordance with the CLB during the *current* license term, the licensee is required by its current license to take appropriate actions to ensure that the intended functions of systems, structures, and components will be maintained in accordance with the CLB throughout the term of its current license. Section § 54.30(b), in turn, provides that licensee compliance with 54.30(a) is not within the scope of license renewal. Thus, current compliance with the CLB is outside the scope of this proceeding.¹¹³

¹¹³ Concerns about ongoing operational issues may be raised via the 10 CFR § 2.206 process. See *Oyster Creek*, CLI-08-23, 68 NRC at 486 (stating that the appropriate avenue for raising concerns about a license renewal applicant’s maintenance of certain equipment and commitment tracking system is the 10 CFR § 2.206 process).

C. Beyond Nuclear Environmental Contention

BEYOND NUCLEAR CONTENTION 1

1. Contention 1 Is Outside the Scope of this Proceeding, Lacks an Adequate Factual Basis, and Does Not Raise a Genuine Dispute on a Material Fact with the Application

Contention 1 reads:

The NextEra Environmental Report fails to evaluate the potential for renewable energy to offset the loss of energy production from the Seabrook nuclear power plant and to make the requested license renewal action for 2030 unnecessary. In violation of the requirements of 10 C.F.R. §51.53(c)(3)(iii) and of the GEIS § 8.1, the NextEra Environmental Report (§ 7.2) treats all of the alternatives to license renewal except for natural gas and coal plants as unreasonable and does not provide a substantial analysis of the potential for significant alternatives which are being aggressively planned and developed in the Region of Interest for the requested relicensing period of 2030-2050. The scope of the SEIS¹¹⁴ is improperly narrow, and the issue of the need for Seabrook as a means of satisfying demand forecasts for the relicensing period must be revisited due to dramatically-changing circumstances in the regional energy mix throughout the two decades preceding the relicensing period.

Beyond Nuclear Petition at 6. The Staff opposes the admission of Beyond Nuclear's environmental contention because it does not raise a genuine dispute with the application. In addition, Contention 1 lacks an adequate factual basis and seeks to litigate issues that are outside the scope of this licensing proceeding. Consequently, the Board should dismiss this contention pursuant to 10 C.F.R. § 2.309(f)(1)(iv), (v), and (vi).

- a. Contention 1 Does Not Raise a Genuine Dispute on a Material Fact with the Application

Contention 1 is inadmissible because it fails to meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1)(vi). Beyond Nuclear does not demonstrate that a genuine dispute exists with the Application or that NextEra has failed to comply with Part 51 and

¹¹⁴ The Staff interprets the Petitioner's reference to the "SEIS" as an inadvertent misstatement. At this stage in the license renewal process, the ER stands in for the SEIS, and so the appropriate challenge is to the Applicant's ER. 10 C.F.R. § 2.309(f)(2).

NEPA with regard to the sufficiency of the alternatives analysis in the ER.

A contention that simply alleges that some matter ought to be considered does not provide the basis for an admissible contention. See *Rancho Seco*, LBP-93-23, 38 NRC at 246. A contention is inadmissible if it fails to contain sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact and does not include references to the specific portions of the application that a petitioner may dispute. See *Pacific Gas and Electric Co.* (Diablo Canyon ISFSI), CLI-08-01, 67 NRC 1, 8 (2008). If a contention alleges an omission, it must identify each omission and give supporting reasons for the petitioner's belief that the application fails to contain information on a relevant matter required by law. 10 C.F.R. § 2.309(f)(1)(vi). Simply asserting that the application is inadequate or incomplete in some way, therefore, does not make an admissible contention.

Beyond Nuclear has not demonstrated a genuine dispute with NextEra's application because NextEra has included in its ER a sufficient alternatives analysis that meets the agency's requirements under 10 C.F.R § 51.45(c), comports with the GEIS, and is in compliance with NEPA. Beyond Nuclear argues that NextEra has failed to provide a "reasonable forecast' with sufficiently 'high quality,' 'accurate scientific analysis' . . . for rigorously and objectively discussing the most reasonable alternative of offshore wind energy for the Region of Interest in the requested relicensing period of 2030 to 2050." Beyond Nuclear Petition at 13. Beyond Nuclear has not shown, however, that NextEra is required to include an alternatives analysis in its ER beyond that which was already included.

Part 51, constituting NRC's regulations implementing NEPA, requires an applicant/licensee to include in its ER "an analysis that considers and balances . . . the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects." 10 C.F.R. § 51.45(c). An applicant's alternatives analysis is not required to discuss every conceivable alternative to the proposed

action. Rather, the alternatives analysis must discuss alternatives that are reasonably feasible.¹¹⁵ NEPA does not require an alternatives analysis “to look at every conceivable alternative, but rather requires only consideration of feasible, nonspeculative, and reasonable alternatives.”¹¹⁶

In defining the scope of alternatives that must be considered by an applicant, the Commission has held that an ER “need only consider the range of alternatives that are capable of achieving the goals of the proposed action,”¹¹⁷ which, in the present case, is the generation of 1,245 MWe of baseload energy.¹¹⁸ Furthermore, the Board in *Indian Point* found that “there is no legal requirement . . . for the Applicant to analyze in detail options that are not discrete, feasible sources for . . . base-load energy.” *Indian Point*, LB-08-13, 68 NRC at 95-96.

Beyond Nuclear alleges that NextEra’s alternatives analysis is insufficient because it does not account for the possibility that offshore wind energy technology during the licensing term of 2030-2050 will be advanced enough to provide the requisite 1,245 MW of base-load capacity that Seabrook will provide. NextEra concluded in its ER that “offshore wind resources are abundant . . . but the technology is not sufficiently demonstrated at this time. Only 1,077 MW of offshore wind capacity has been installed worldwide.” ER § 7.1. Beyond Nuclear alleges that NextEra violates NEPA by restricting its analysis to what alternatives are available

¹¹⁵ *Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council*, 435 U.S. 519, 551 (1978); *Westlands Water District v. U.S. Dep’t of Interior*, 376 F.3d 853, 868 (9th Cir. 2004); *City of Bridgeton v. Fed. Aviation Admin.*, 212 F.3d 448, 458 (8th Cir. 2000).

¹¹⁶ *Indian Point*, LBP-08-13, 68 NRC at 95. See also *Nuclear Mgmt. Co., LLC* (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 753 (2005) (citing *Vermont Yankee*, 435 U.S. at 551); *City of Carmel-by-the-Sea v. Dep’t of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-91-2, 33 NRC 61, 65 (1991).

¹¹⁷ *Hydro Res., Inc.* (P.O. Box 15910, Rio Rancho, New Mexico 87174), CLI-01-4, 53 NRC 31, 55 (2001); *Rancho Seco*, CLI-93-3, 37 NRC at 144-45.

¹¹⁸ ER at 7-13.

at this time; instead, Beyond Nuclear asserts, NextEra must predict what technologies will be available during the licensing period of 2030-2050. Beyond Nuclear Petition at 18. Beyond Nuclear claims that NextEra must make “reasonable forecasts of the future” in order to comply with NEPA. *Id.* The cases Beyond Nuclear cites, however, do not support this proposition. Both *Prairie Island* and *HRI*, cited by Beyond Nuclear, discuss the applicant’s duty to make “reasonable forecasts of the future” with regard to the environmental *effects* of proposed actions, and not with regard to what alternatives may or may not be technologically available. See *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 & 2), ALAB-455, 7 NRC 41, 48 (1978); *HRI*, LBP-04-23, 60 NRC at 447-48. Beyond Nuclear does not cite to any regulations or case law that supports the argument that NextEra’s ER must look beyond what is presently available in formulating its evaluation of *alternatives*. Indeed, the Supreme Court has held that an EIS, and thus the alternatives analysis required therein, must be prepared when a project is proposed. *Kleppe v. Sierra Club*, 427 U.S. 390, 405-06 (1976). Accordingly, the environmental documents that are required to be prepared by Part 51 and NEPA must be prepared now because the license renewal decision is being made now, not twenty years from now. While a certain level of prediction on the part of an agency is implicit in NEPA, only alternatives that are not considered “remote and speculative possibilities” need be analyzed.¹¹⁹ Beyond Nuclear does not establish that NextEra has omitted information required by law to be included in their ER, and therefore does not raise a genuine dispute with the applicant.

Furthermore, the Commission has held that an applicant’s ER is not meant to be a

¹¹⁹ *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 551 (1978).

“research document.”¹²⁰ Indeed, “NEPA does not require agencies to use technologies and methodologies that are still ‘emerging’ and under development, or to study phenomena ‘for which there are not yet standard methods of measurement or analysis.’ And while there ‘will always be more data that could be gathered,’ agencies ‘must have some discretion to draw the line and move forward with decisionmaking.’”¹²¹ While *Beyond Nuclear* cites an array of studies that seem to show that offshore wind power in the region of interest (ROI) will, in the future, be advanced enough to provide the same amount of base-load energy that the Seabrook power plant will provide during the renewed licensing term, these same studies indicate that at the present time this technology is in its nascent stages, and offshore wind stations capable of generating this amount of power are not yet a reality in the United States.¹²² Further, once this technology does become more widespread, wind projects will be subject to any number of state and federal permitting and siting processes before they will become operational. *Beyond Nuclear* itself concedes that the federal and state permitting requirements for siting offshore wind energy projects are “untested.” *Beyond Nuclear* Petition at 41. Accordingly, as baseload-providing offshore wind energy is still an “emerging” technology¹²³ presenting only a remote and speculative possibility that it could constitute a feasible, nonspeculative, and reasonable alternative to the proposed action, NextEra has not failed to include in its ER information required by Part 51 or NEPA.¹²⁴

¹²⁰ *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 37).

¹²¹ *Id.*

¹²² See *Beyond Nuclear* Petition at 27-28.

¹²³ See *Pilgrim*, CLI-10-11, 71 NRC __ (slip op. at 37).

¹²⁴ See *Vermont Yankee*, 435 U.S. at 551; *Indian Point*, LBP-08-13, 68 NRC at 95.

Moreover, in fulfillment of its responsibilities to assess reasonable alternatives, NextEra provided a sufficient analysis of alternatives that are capable of providing a supply of base-load energy specifically for the ROI. Beyond Nuclear suggests that NextEra's ER is deficient because it fails to consider the potential for developments in technology that could link wind farms far outside the ROI, which would avert the intermittency problems that currently prevent wind power from serving as a source of base-load energy. See *generally* Beyond Nuclear Petition at 21-30. In support of its arguments that such technology is "nearly at hand,"¹²⁵ Beyond Nuclear points to numerous sources documenting technology and policy developments in Europe, the mid-Atlantic seaboard, and North America generally.¹²⁶ However, while such studies suggest that the use of wind power is increasing in many areas of the world, they do not undermine the ER's conclusion that wind farm transmission grids are still speculative for the ROI. It is beyond the requirements of Part 51 to insist that NextEra's analysis of alternatives include a study of wind power projects and policies planned for regions outside the ROI because an applicant is only required to analyze alternatives to the extent that they are capable of achieving the goals of the proposed action – which, as stated before, is replacing Seabrook Station's generating capacity of 1,245 MWe for the ROI. See *HRI*, CLI-01-4, 53 NRC at 55; *Rancho Seco*, CLI-93-3, 37 NRC at 144-45.

Finally, Beyond Nuclear states that offshore wind power can provide base-load capacity if used in conjunction with energy storage mechanisms. Beyond Nuclear Petition at 20. NextEra includes a discussion of this option in its ER and dismisses it as being too expensive.

¹²⁵ *Id.* at 29.

¹²⁶ See *generally id.* at 11-33; Beyond Nuclear's Exhibit 4 (Midwestern U.S.); Exhibit 5 (mid-Atlantic seaboard); Exhibit 6 (Europe); Exhibit 7 (Europe); Exhibit 9 (eastern half of U.S.); Exhibit 10 (worldwide); and Exhibit 11 (Europe).

ER at 7.1. Beyond Nuclear challenges this dismissal as not having offered an “objective discussion” or a “hard look” at this alternative. Beyond Nuclear Petition at 20. This argument is flawed for two reasons. First, NextEra is not required to include an analysis of a combination of sources to produce base-load energy. Instead, NextEra is only required to analyze “discrete energy sources as alternatives.” GEIS § 8.1; *Monticello*, LBP-05-31, 62 NRC at 753; *Indian Point*, LBP-08-13, 68 NRC at 95 (noting that an applicant is not required to consider a comprehensive system as a viable replacement for the proposed action). The studies Beyond Nuclear uses for support involve storage and transmission, which goes beyond discrete energy sources. Beyond Nuclear Petition at 21-22, 27. The fact that NextEra did include a discussion of energy storage in addition to wind power exceeds what is required to be included in the ER. Second, Beyond Nuclear does not apparently contest NextEra’s conclusion that combining wind energy with energy storage mechanisms is cost prohibitive. See ER at 7.1. Beyond Nuclear therefore does not raise a genuine dispute on a material issue of law or fact with NextEra’s analysis, asserting only that NextEra must include information that is not required by law to be included.

Because these analyses are not required under the Commission’s rules or precedent, Beyond Nuclear has no basis for challenging the sufficiency of the analysis in the ER. Beyond Nuclear therefore does not raise a genuine dispute with NextEra’s Application, in contravention of the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1)(vi).

b. Contention 1 Amounts to a Direct Challenge to NRC Regulations and Is Therefore Outside the Scope of a License Renewal Proceeding

Contention 1 is also inadmissible because it is a direct challenge to generally applicable NRC regulations relating to the period for submitting license renewal applications. 10 C.F.R. § 2.309(f)(1)(iii). Specifically, 10 C.F.R. § 54.17(c) declares that “[a]n application for a renewed license may not be submitted to the Commission earlier than 20 years before the expiration of

the operating license or combined license currently in effect.” In its contention, Beyond Nuclear states that the ER “fails to evaluate the potential for renewable energy to offset the loss of energy production” from Seabrook, and further maintains that the ER “does not provide a substantial analysis of the potential for significant alternatives which are being aggressively planned and developed in the Region of Interest for the requested relicensing period of 2030-2050.” Beyond Nuclear Petition at 6. Beyond Nuclear’s evidence in support of its contention portrays the LRA’s submission twenty years before the expiration of Seabrook’s operating license as inherently unreasonable because it does not provide sufficient opportunity to analyze offshore wind as an alternative to relicensing. However, NRC’s regulations permit NextEra to submit their LRA now. Therefore, to the extent that Beyond Nuclear’s contention is a collateral attack on 10 C.F.R. § 54.17(c), it is not within the scope of this licensing proceeding. 10 C.F.R. § 2.309(f)(1)(iii).

The Commission’s regulations in 10 C.F.R. Part 54 limit the scope of a license renewal proceeding to the specific matters that must be considered for the license renewal application to be granted. A contention that challenges a Commission rule is outside the scope of the proceeding because, absent a waiver, no rule or regulation of the Commission can be subjected to attack in an adjudicatory proceeding.¹²⁷ As the Commission has stated, “a petitioner may not demand an adjudicatory hearing to attack generic NRC requirements or regulations, or to express generalized grievances about NRC policies.” *Oconee*, CLI-99-11, 49 NRC at 334; see also *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-07-16, 65 NRC 371, 383 (2007) (rejecting petitioners’ argument that the Commission cannot legitimately rely on a state permit which expires only 5 years into the 20-year renewal period as

¹²⁷ 10 C.F.R. § 2.335(a); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant, Unit 1), LBP-07-11, 66 NRC 41, 57-58 (2007).

a *de facto* collateral attack on section 51.53(c)(3)(ii)(B)'s requirement that an applicant submit a EPA Section 316(a) variance or an equivalent state document).

Beyond Nuclear's challenge to the adequacy of the ER's wind power discussion arises out of its argument that, by submitting its license renewal application approximately twenty years before the renewal period is to take effect, NextEra cannot adequately evaluate the potential for renewable energy to serve as an alternative to Seabrook Station when the time comes. See Beyond Nuclear Petition at 6. Essentially, the basis of Beyond Nuclear's claim that the ER is inadequate is that the next twenty years may bring developments in alternative energy technology and policy, and these developments have not been – and cannot fully be – accounted for in an ER submitted now. See *id.* Because the ER does not adequately evaluate the *potential* for renewable energy to replace Seabrook's energy production in twenty years, Beyond Nuclear claims, the ER does not meet the requirements of Part 51. See *id.*

Beyond Nuclear's arguments in support of its contention collectively appear to be a generalized grievance against the NRC's regulations permitting applicants to submit license renewal applications up to twenty years in advance of the license renewal period. Although Beyond Nuclear acknowledges that this license renewal application period is authorized under 10 C.F.R. § 54.17(c),¹²⁸ the Petition immediately thereafter asserts that "making application 20 years in advance of the license expiration date is at an extreme and beyond reasonable claims to reliability and accuracy for requested federal actions," and claims that allowing such a submission would "game the license renewal process." Beyond Nuclear Petition at 14, 30. Later, Beyond Nuclear more plainly declares that "the extremely premature timing of the Applicant's submittal makes its Environmental Review conclusions clearly unreasonable and

¹²⁸ Beyond Nuclear actually cites, apparently by mistake, to 10 C.F.R. § 51.17(c).

unusable to reliably inform the federal agency.” *Id.* at 42.

The supporting evidence Beyond Nuclear cites is likewise intended to make the case that the 20-year license renewal period is inherently unreasonable because it does not provide sufficient opportunity to realistically analyze alternatives like baseload-providing offshore wind power. Beyond Nuclear refers to news accounts indicating growing commercial and political momentum for interconnecting renewable energy sources in the future, with some projects proposed for 2020, “a decade in advance of the proposed federal relicensing action.” *Id.* at 24. In addition, the general thrust of the studies, policy documents and journal articles that Beyond Nuclear cites is that offshore wind systems are not yet proven as a source of baseload electricity in the U.S., but may be in development sometime between five and twenty years from now. *See id.* at 21-30, 38-41, 44-45. Citing to documents issued months after NextEra submitted its LRA, Beyond Nuclear declares that the ER “continue[s] to be superseded by current events and expert documents,” rendering its “premature” conclusion on wind power incomplete. *See id.* at 42, 46.

As Beyond Nuclear’s arguments and evidence demonstrate, the circumstance of the LRA’s submission twenty years in advance of the license renewal period is foundational to Beyond Nuclear’s challenge to the adequacy of the Applicant’s ER. Because, as described in the section above, Beyond Nuclear has not shown that wind is a feasible alternative at the present time – the relevant timeframe for this EIS – Beyond Nuclear is reduced to attacking the Commission’s regulations, which explicitly permit licensees to file a LRA at this juncture. As a collateral attack on the period for submitting license renewal applications as stated in 10 C.F.R. § 54.17(c), Contention 1 is outside the scope of this licensing proceeding. *See* 10 C.F.R. § 2.309(f)(1)(iii).

It is important to note, however, that the general inability to challenge NRC regulations in individual license renewal proceedings does not leave interested members of the public without

recourse. A petitioner may within the adjudicatory context submit a request for waiver of a rule under 10 C.F.R. § 2.335, and outside the adjudicatory context file a petition for rulemaking under 10 C.F.R. § 2.802. In this case, Beyond Nuclear has submitted a petition for rulemaking seeking to change the application period for license renewal to permit submissions no earlier than ten years before an operating license expires. Beyond Nuclear Petition at 15; *see also* Earth Day Commitment/Friends of the Coast, Beyond Nuclear, Seacoast Anti-Pollution League, C-10 Research and Education Foundation, Pilgrim Watch, and New England Coalition; Notice of Receipt of Petition for Rulemaking, 75 Fed. Reg. 59,158 (Sept. 27, 2010). The NRC Staff can also consider the comments and evidence presented in this petition as part of the scoping process accompanying the Seabrook license renewal Supplemental Environmental Impact Statement. In sum, the rulemaking process, rather than an individual license renewal proceeding, is the proper forum for Beyond Nuclear's challenge to generally applicable NRC regulations.

- c. To the Extent Contention 1 Contends that the ER Fails to Evaluate Renewable Energy Alternatives Other Than Offshore Wind, Contention 1 Is Both an Inadmissible Contention of Omission and Inadmissible for Lack of Basis

Contention 1 broadly contends that the ER fails to adequately evaluate significant renewable energy alternatives and treats all alternatives to license renewal except for natural gas and coal plants as unreasonable. Beyond Nuclear Petition at 6. In support of the contention, Beyond Nuclear argues that the ER fails to "rigorously discuss and provide a sufficiently complete evaluation of those alternatives with significantly less adverse human environmental consequence" to the relicensing of Seabrook. *Id.* at 13. Subsequently, Beyond Nuclear states that the ER's treatment of alternatives is vague, superficial, significantly dated, and inaccurate, and that the ER "neglect[s] to undertake a vigorous and substantially complete discussion of the alternative energy resources specific to the Region of Interest" as required by

NEPA. *Id.* at 16. Beyond Nuclear further asserts that the ER fails to meet the requirements of NEPA because it dismisses “all the individual renewable energy alternatives” projected for the license renewal period, “including solar power, as well as wave and tidal power.” *Id.* at 13-14, 49.

Even if Beyond Nuclear’s comments regarding offshore wind power were found to fall within the scope of this proceeding and to raise a genuine dispute with the Application, Beyond Nuclear’s assertions regarding other renewable energy alternatives, such as solar, wind, and wave power, are inadmissible because they do not meet the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi).

i. Contention 1 Does Not Identify Specific Deficiencies in the ER With Respect To Renewable Energy Alternatives Other Than Offshore Wind

For each contention a petitioner seeks to admit, the petitioner “must provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact.” 10 C.F.R. § 2.309(f)(1)(vi). Placeholder contentions that raise only generalized concerns about the adequacy of an application, without reference to specific portions of the application that a petitioner disputes and the reasons for the alleged inadequacy, have not met these requirements.¹²⁹

Contention 1 contends that the ER “fails to evaluate the potential for renewable energy to offset the loss of energy production from the Seabrook nuclear power plant.” Beyond Nuclear Petition at 6. Beyond Nuclear cites to the ER at Section 7.0, Alternatives to the Proposed Action, and Section 7.2.1, Alternatives Considered, following an assertion that the treatment of

¹²⁹ See *S. Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 2 & 3), LBP-09-3, 69 NRC 139, 158 (2009) (finding inadmissible “open-ended, placeholder contentions” that did not assert a specific safety concern backed up by documentary material or expert analysis).

alternatives to the proposed licensing action are vague, significantly dated, incomplete, and inaccurate. See *id.* at 16-17. Within each of these references, Beyond Nuclear highlights statements from the ER regarding the choice of energies to evaluate as alternatives to the license renewal, apparently to show that only alternatives for the ROI and alternatives capable of replacing a baseload capacity of 1,245 MWe were considered. *Id.* at 17. However, Beyond Nuclear does not say how the Applicant's choice of alternatives to consider violates the requirements of Part 51 or NEPA, nor does Beyond Nuclear cite to the sections of the ER that actually discuss solar power and wave and tidal power as alternatives to the license renewal. Discussions of these alternatives can be found in the Applicant's ER at Section 7.2.1.5, "Solar," and Section 7.2.1.5, "Tidal, Ocean Thermal Energy, and Wave," respectively.

Subsequently, Beyond Nuclear implicitly acknowledges that such alternatives were in fact considered in the ER, by asserting that the Applicant failed to substantially analyze or rigorously discuss these alternatives, and that its evaluation was not sufficiently complete. *Id.* at 6, 13. Beyond Nuclear goes on to state that the ER's treatment of such alternatives is also significantly dated and inaccurate. *Id.* at 16. However, Beyond Nuclear does not refer to any portion of the ER in support of its contention that solar, wave, and tidal power are not adequately treated or inaccurate. Nor does Beyond Nuclear directly dispute the facts or analyses contained in these sections or provide any supporting reasons for its conclusions. See 10 C.F.R. § 2.309(f)(1)(vi). Specifically, Beyond Nuclear does not identify the portions of the ER that it considers to be dated, incomplete, and inaccurate, except with respect to the ER's wind power discussion. See *generally* Beyond Nuclear Petition at 17-20. Ultimately, Beyond Nuclear's discussion in support of Contention 1 falls short of challenging the sufficiency of the ER with respect to non-wind power alternatives, and rests on conclusory statements to the effect that such alternatives were not adequately evaluated, or even evaluated at all. See *id.* at 6, 13-14, 16, 49. Section 2.309(f)(1)(vi) requires petitioners to identify specific portions of the

ER to be disputed and the supporting reasons for each dispute. Beyond Nuclear has not done this. Therefore, Beyond Nuclear has not demonstrated the existence of a material factual dispute with the ER's treatment of non-wind power alternatives.

ii. Contention 1 Does Not Provide Supporting Reasons, Facts or Expert Opinion Regarding Renewable Energy Alternatives Other Than Offshore Wind

A petitioner must also "provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position" for each contention. 10 C.F.R. § 2.309(f)(1)(v). The Commission has indicated that these contention admissibility standards do not permit mere notice pleading: "the Commission will not accept the filing of a vague, unparticularized [contention], unsupported by alleged fact or expert opinion and documentary support."¹³⁰ Put another way, "[g]eneral assertions or conclusions will not suffice." *Id.* Thus, "[a] petitioner's issue will be ruled inadmissible if the petitioner 'has offered no tangible information, no experts, [or] no substantive affidavits.'" *Fansteel, Inc.*, CLI-03-13, 58 NRC at 203.

As discussed in the section above, Beyond Nuclear does not provide any facts or expert opinion to support its contention that the Applicant's ER fails to adequately evaluate alternatives to license renewal, including non-wind power alternatives. Furthermore, Beyond Nuclear does not refer to any specific documents or other sources of which Beyond Nuclear is aware and upon which it intends to rely in establishing that the analysis of other renewable energy alternatives in the ER is legally deficient. See 10 C.F.R. § 2.309(f)(1)(v). Although Beyond Nuclear provides a lengthy discussion of its assertion that the ER does not adequately consider offshore wind as an alternative, none of the evidence upon which Beyond Nuclear relies

¹³⁰ *Palisades*, CLI-07-18, 65 NRC at 414 (quoting *Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 295 (2000)).

provides support for that proposition as extended to other renewable energy alternatives, such as solar, wave, and tidal. As a result, Beyond Nuclear has not demonstrated a sufficient factual basis for its contention that the ER fails to consider, or considers inadequately, non-wind power renewable energy alternatives.

- d. To the Extent Contention 1 Contends that the ER Fails to Consider the Need for Seabrook as a Source of Power for the Region, Contention 1 Is Inadmissible as Immaterial and Outside the Scope of This Proceeding

Contention 1 concludes by stating, “The scope of the SEIS is improperly narrow, and the issue of the need for Seabrook as a means of satisfying demand forecasts for the relicensing period must be revisited due to dramatically-changing circumstances in the regional energy mix throughout the two decades preceding the relicensing period.” Beyond Nuclear Petition at 6. Although it is unclear, the contention appears to suggest in part that the Applicant’s ER is deficient for failing to consider the need for Seabrook as a source of power for the ROI. Such a contention, however, does not meet the requirements of 10 C.F.R. § 2.309(f)(1)(iii), which requires that the issue fall within the scope of the proceeding, and 10 C.F.R. § 2.309(f)(1)(iv), which requires that the issue raised in the contention be material to the licensing action.

NRC regulations plainly state that for the purposes of an operating license renewal, an ER is not required to discuss the need for power. 10 C.F.R. § 51.53(c)(2). Therefore, a failure on the Applicant’s part to consider the need for Seabrook as a means of supplying power to the region does not amount to a legal deficiency. Because the Applicant is not required to assess the need for power, Beyond Nuclear’s statement to that effect is outside the scope of this proceeding. And because the need for power is not a necessary element of the Applicant’s ER, it is also not material to this licensing action. Therefore, Beyond Nuclear has not demonstrated that the ER’s failure to consider “the issue of the need for Seabrook as a means of satisfying demand forecasts” is material to, or within the scope of, the current proceeding.

In sum, the Board should not admit Beyond Nuclear's Contention 1 because it fails to meet the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1). Beyond Nuclear does not provide an adequate factual basis for Contention 1 and some of the issues raised fall outside the scope of the current licensing proceeding. Furthermore, Beyond Nuclear has not raised a genuine dispute with NextEra's Application on a material issue of law or fact. Consequently, the Board should dismiss this contention pursuant to 10 C.F.R. § 2.309(f)(1)(iv), (v), and (vi).

CONCLUSION

To be admitted as a party to an NRC proceeding, a petitioner must demonstrate standing and proffer at least one admissible contention. 10 C.F.R. § 2.309(a). Both FOTC/NEC and Beyond Nuclear have established standing. 10 C.F.R. § 2.309(d). But, neither has submitted an admissible contention. FOTC/NEC Contention 1 is not supported by sufficient documentation and, in light of NextEra's update to the LRA, does not raise a genuine dispute with the application. FOTC/NEC Contention 2 is outside the scope of this proceeding because transformers are active components and therefore not within the scope of license renewal. FOTC/NEC Contention 3 is also outside the scope of this proceeding because it does not raise a challenge to the intended functions of piping at Seabrook. FOTC/NEC Contention 4 does not raise a material issue because it does not demonstrate that the challenges it raises to NextEra's SAMA analysis would likely result in the identification of an additional cost-beneficial SAMA. Last, Beyond Nuclear's contention does not demonstrate a genuine dispute with the application because it does not show that NRC regulations required the applicant to consider wind power as a base-load alternative and is otherwise a generalized attack on the Commission's regulation governing when license renewal applications may be submitted. As a result, the Board should deny both requests for hearing.

Respectfully submitted,

Signed (electronically) by

Mary Baty Spencer
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop – O-15D21
Washington, DC 20555
Telephone: (301) 415-1324
E-mail: mary.baty@nrc.gov
Date of signature: November 15, 2010

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
NextEra Energy, LLC) Docket Nos. 50-443
)
(Seabrook Station, Unit 1)) ASLBP No. 10-906-02-LR-BD01

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "NRC STAFF'S ANSWER TO PETITIONS TO INTERVENE AND REQUEST FOR HEARING FILED BY (1) FRIENDS OF THE COAST AND NEW ENGLAND COALITION AND (2) BEYOND NUCLEAR, SEACOAST ANTI-POLLUTION LEAGUE, AND NEW HAMPSHIRE SIERRA CLUB" for dated November 15, 2010, have been served upon the following by the Electronic Information Exchange, this 15th day of November, 2010:

Office of the Secretary
Attn: Rulemakings and Adjudications Staff
Mail Stop: O-16C1
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: Hearing.Docket@nrc.gov

Dr. Richard E. Wardwell
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: Richard.Wardwell@nrc.gov

Paul S. Ryerson, Chair
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: Paul.Ryerson@nrc.gov

Office of Commission Appellate
Adjudication
Mail Stop: O-16C1
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: OCAAMAIL.Resource@nrc.gov

Dr. Michael F. Kennedy
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: Michael.Kennedy@nrc.gov

Hillary Cain, Law Clerk
Atomic Safety and Licensing Board
Mail Stop: T-3F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: Hillary.cain@nrc.gov

Steven Hamrick, Esq.
NextEra Energy Seabrook, LLC
801 Pennsylvania Ave NW Suite 220
Washington, DC 20004
Steven.hamrick@fpl.com

Raymond Shadis
Friends of the Coast
New England Coalition
Post Office Box 98
Edgecomb, Maine 04556
E-mail: shadis@prexar.com

Kurt Ehrenberg
New Hampshire Sierra Club
40 N. Main Street
Concord, NH 03301
E-mail: kurt.ehrenberg@sierraclub.org

Michael A. Delaney, Esq.
K. Allen Brooks, Esq.
Peter Roth, Esq.
Office of the Attorney General
33 Capitol Street
Concord, NH 03301
E-mail: michael.a.delaney@doj.nh.gov
E-mail.k.allen.brooks@doj.nh.gov
E-mail: peter.roth@doj.nh.gov

Mitchell Ross, Esq.
Antonio Fernandez, Esq.
NextEra Energy Seabrook, LLC
700 Universe Boulevard
Juno Beach, FL 33408
E-mail: mitch.ross@fpl.com
E-mail: antonio.fernandez@fpl.com

Doug Bogen
Executive Director
Seacoast Anti-Pollution League
PO Box 1136
Portsmouth, NH 03802
E-mail: dbogen@metrocast.net

Signed (electronically) by

Mary Baty Spencer
Counsel for the NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
Washington, DC 20555-0001
(301) 415-1324
mary.baty@nrc.gov