

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Paul S. Ryerson, Chairman
Dr. Michael F. Kennedy
Dr. Richard E. Wardwell

In the Matter of

NEXTERA ENERGY SEABROOK, LLC

(Seabrook Station, Unit 1)

Docket No. 50-443-LR

ASLBP No. 10-906-02-LR-BD01

February 15, 2011

MEMORANDUM AND ORDER
(Ruling on Petitions for Intervention and Requests for Hearing)

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Before the Board are two petitions to intervene and requests for a hearing concerning the application (Application) of NextEra Energy Seabrook, LLC (NextEra or Applicant) to renew the operating license for Seabrook Station, Unit 1 (Seabrook), a nuclear power reactor located in Rockingham County, New Hampshire. Beyond Nuclear, the Seacoast Anti-Pollution League, and the New Hampshire Sierra Club (collectively, the Beyond Nuclear petitioners) jointly filed a petition proffering one contention. Friends of the Coast and the New England Coalition (collectively, Friends/NEC) jointly filed a second petition proffering four contentions.¹

NextEra and the NRC Staff contend that every proffered contention is inadmissible on one or more grounds. NextEra also contends that Friends/NEC have failed to demonstrate standing.

The Board concludes that each of the five petitioners has demonstrated standing and that the sole contention proffered by the Beyond Nuclear petitioners, as well as three of the four

¹ Friends/NEC Contention 4 contains six subparts, which the Board addresses individually.

contentions proffered by Friends/NEC, are admissible, in whole or in part, pursuant to 10 C.F.R. § 2.309(f). In accordance with 10 C.F.R. § 2.309(a), we therefore grant the petitions and admit each petitioner as a party to this proceeding. As limited by the Board, the admitted contentions will be heard under the procedures set forth at 10 C.F.R. Part 2, Subpart L.

I. BACKGROUND

On May 25, 2010, the NRC received an application from NextEra to renew the Seabrook operating license, which expires on March 15, 2030.² The NRC published notice in the Federal Register on July 21, 2010 that the NRC Staff would review the Application and that persons whose interests might be affected by the proposed license renewal would have until September 20, 2010 to request a hearing or to petition to intervene in the proceeding.³ At the petitioners' request,⁴ the Secretary to the Commission subsequently extended the filing period by thirty days to October 20, 2010.⁵

On October 20, the Beyond Nuclear petitioners timely filed their petition, which proffers one contention alleging that the Application's environmental report (ER) fails to consider

² 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. 34,180 (June 16, 2010).

³ 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. 42,462, 42,462-63 (July 21, 2010).

⁴ Beyond Nuclear Reply in Support of the New Hampshire Office of Attorney General Request for a Ninety (90) Day Extension of Time to File Petition For Leave to Intervene (Sept. 14, 2010) at 4; Friends of the Coast and New England Coalition's Answer to New Hampshire Attorney General's Request for Extension (Sept. 15, 2010) at 1; New Hampshire Sierra Club Request for an Extension for Filing Petition for Leave to Intervene and Request for Public Hearing (Sept. 17, 2010) at 2; Seacoast Anti-Pollution League Request for an Extension in the Filing of the Request for Public Hearing and Petition to Intervene (Sept. 17, 2010) at 2.

⁵ Order of the Secretary (Sept. 17, 2010); Order of the Secretary (Sept. 20, 2010).

adequately, as a reasonable alternative source of baseload power, an allegedly environmentally superior system of renewable energy — in particular, interconnected offshore wind farms.⁶

Friends/NEC jointly submitted their petition by email and electronic filing on October 21.⁷ The petition contains three safety-related contentions concerning management of aging plant systems, structures, and components, and one six-part contention regarding severe accident mitigation analysis (SAMA).⁸ On October 22, Friends/NEC requested the petition filing period be extended by one day to include October 21.⁹

On October 29, 2010, NextEra filed with the NRC a supplement to its Application, which reflected amendments to two aging management programs.¹⁰

⁶ Beyond Nuclear, Seacoast Anti-Pollution League and New Hampshire Sierra Club Request for Public Hearing and Petition To Intervene (Oct. 20, 2010) at 6, 11-12, 21, 23, 33 [hereinafter Beyond Nuclear Petition].

⁷ Email from Raymond Shadis, Pro Se Representative for Friends of the Coast/New England Coalition, to Seabrook service list (Oct. 21, 2010); Friends of the Coast and New England Coalition Petition for Leave to Intervene, Request for Hearing, and Admission of Contentions (Oct. 21, 2010) [hereinafter Friends/NEC Petition].

⁸ Friends/NEC Petition at 10-11, 20, 22-23, 33-34.

⁹ Friends of the Coast/New England Coalition's Request for Extension of Time (Oct. 22, 2010) [hereinafter Friends/NEC Petition Extension Request].

¹⁰ See NextEra Energy Seabrook, LLC's Answer Opposing the Petition to Intervene and Request for Hearing of Friends of the Coast and the New England Coalition (Nov. 15, 2010) [hereinafter NextEra Answer to Friends/NEC Petition], Attach. 1, Letter from Paul O. Freeman, Site Vice President of NextEra Energy Seabrook, LLC, to NRC Document Control Desk at 1 (Oct. 29, 2010).

On November 15, 2010, NextEra and the NRC Staff filed timely answers to the petitions.¹¹ The Beyond Nuclear petitioners timely replied on November 22, 2010.¹² Friends/NEC submitted a reply at 12:10 am on November 23, 2010.¹³ Before noon on the same day, Friends/NEC submitted a revised reply and requested a one-day extension of the reply filing period to include November 23.¹⁴

The Board heard oral argument on the petitions in Portsmouth, New Hampshire on November 30, 2010.¹⁵ At that time, the Board allowed Friends/NEC seven days to submit a revised declaration from Mr. Paul Blanch and allowed the other parties seven additional days to object to that submission.¹⁶

On December 6, 2010, Friends/NEC submitted a revised Blanch declaration, an NRC information notice concerning electrical cables, and a document titled "Supplement to

¹¹ NextEra Energy Seabrook, LLC's Answer Opposing the Petition to Intervene and Request for Hearing of Beyond Nuclear, Seacoast Anti-Pollution League, and New Hampshire Sierra Club (Nov. 15, 2010) [hereinafter NextEra Answer to Beyond Nuclear Petition]; NextEra Answer to Friends/NEC Petition at 26-28; 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 (Nov. 15, 2010) [hereinafter NRC Staff Answer].

¹² Combined Reply of Joint Petitioners (Beyond Nuclear, Seacoast Anti-Pollution League and New Hampshire Sierra Club) to Answers of NextEra Energy Seabrook, LLC and the United States Nuclear Regulatory Commission (Nov. 22, 2010) [hereinafter Beyond Nuclear Reply].

¹³ Friends of the Coast and New England Coalition Reply to NextEra and NRC Staff Answers to Friends of the Coast and New England Coalition Petition for Leave to Intervene, Request for Hearing, and Admission of Contentions (submitted Nov. 23, 2010) [hereinafter Friends/NEC Initial Reply].

¹⁴ Friends of the Coast and New England Coalition Reply to NextEra and NRC Staff Answers to Friends of the Coast and New England Coalition Petition for Leave to Intervene, Request for Hearing, and Admission of Contentions (submitted Nov. 23, 2010) [hereinafter Friends/NEC Revised Reply]; Friends of the Coast/New England Coalition's Request for Extension of Time (Nov. 23, 2010) [hereinafter Friends/NEC Reply Extension Request].

¹⁵ Tr. at 1, 8.

¹⁶ Tr. at 68.

[Friends/NEC Petition] – Errors and Corrections and New Information.”¹⁷ NextEra and the NRC Staff filed objections to Friends/NEC’s submittals on December 13.¹⁸ On December 20 Friends/NEC moved for leave to reply to NextEra and the NRC Staff’s objections and simultaneously filed the reply.¹⁹ NextEra and the NRC Staff filed oppositions to Friends/NEC’s motion for leave to reply on December 22.²⁰

On January 14, 2011, NextEra submitted a letter to the Board, transmitting new information purportedly relevant to the admission of contentions.²¹ On January 24, Friends/NEC filed an objection to NextEra’s letter.²² The NRC Staff filed a response to Friends/NEC’s objection on January 28, 2011.²³

¹⁷ Declaration of Paul Blanch (Dec. 6, 2010); NRC Information Notice 20 10-26: Submerged Electrical Cables (Dec. 2, 2010); Supplement To Friends Of The Coast And New England Coalition Petition For Leave To Intervene, Request For Hearing, And Admission Of Contentions – Errors And Corrections And New Information (Dec. 6, 2010) [hereinafter Friends/NEC Supplement – Errors and Corrections and New Information].

¹⁸ NextEra Energy Seabrook, LLC’s Response Opposing NEC/Friends of the Coast’s Supplement to Its Petition (Dec. 13, 2010) [hereinafter NextEra Objections to Supplement]; NRC Staff’s Objections to the Friends of the Coast and New England Coalition’s Supplement (Dec. 13, 2010) [hereinafter NRC Staff Objections to Supplement].

¹⁹ Motion by Friends of the Coast and New England Coalition for Leave to Reply to NRC Staff Objections; NextEra Energy Seabrook, LLC. Response in Opposition to the Friends of the Coast and New England Coalition Supplement to Its Petition (Dec. 20, 2010) [hereinafter Friends/NEC Motion to Reply]; Friends of the Coast and New England Coalition’s Reply to NRC Staff Objections; and NextEra Energy Seabrook, LLC. Response in Opposition to the Friends of the Coast and New England Coalition’s Supplement to Its Petition (Dec. 20, 2010) [hereinafter Friends/NEC Reply to Objections].

²⁰ NextEra Energy Seabrook, LLC’s Answer to NEC/Friends of the Coast’s Motion for Leave to File a Reply (Dec. 22, 2010) [hereinafter NextEra Opposition to Reply]; NRC Staff’s Response in Opposition to Friends of the Coast and New England Coalition’s Motion for Leave to Reply (Dec. 22, 2010) [hereinafter NRC Staff Opposition to Reply].

²¹ Letter from Steven Hamrick, NextEra Energy Seabrook, to Licensing Board (Jan. 14, 2011).

²² Friends of the Coast and New England Coalition’s Objection to NextEra Energy Seabrook, LLC.’s January 14, 2011 Letter Filing of Purported Material New Information (Jan. 24, 2011).

²³ NRC Staff’s Response to the Friends of the Coast and New England Coalition’s Objection (Jan. 28, 2011).

II. ANALYSIS

To intervene as a party in an adjudicatory proceeding addressing a proposed license action, a petitioner must (1) establish it has standing; and (2) proffer at least one admissible contention.²⁴ Before analyzing standing and contention admissibility, we first address the timeliness of Friends/NEC's petition and other filings.

A. Timeliness

NextEra contends that Friends/NEC's petition is untimely because it was not filed on or before October 20, 2010.²⁵ Friends/NEC emailed their petition to the NRC and NextEra fourteen minutes after the filing period ended.²⁶ In the email, Friends/NEC explained they had attempted without success to file the petition electronically for two hours before the midnight deadline and would communicate with the NRC the following day during business hours to determine how to proceed.²⁷ Friends/NEC electronically filed the petition early the next afternoon. On October 22 Friends/NEC moved to extend the filing period by one day to include October 21.²⁸ NextEra did not file any objection to the extension request, and Friends/NEC assert that the NRC Staff did not oppose their request when consulted.²⁹ NextEra does challenge the timeliness of Friends/NEC's petition in its answer.³⁰

²⁴ 10 C.F.R § 2.309(a).

²⁵ NextEra Answer to Friends/NEC Petition at 3-4.

²⁶ Email from Raymond Shadis, Pro Se Representative for Friends/NEC, to Seabrook service list (Oct. 21, 2010).

²⁷ Id.

²⁸ Friends/NEC Petition Extension Request at 1.

²⁹ Id. at 3.

³⁰ NextEra Answer to Friends/NEC Petition at 3-4.

To determine whether Friends/NEC's late-filed petition will be considered in this proceeding, we must balance the eight factors set out in 10 C.F.R. § 2.309(c)(1), of which "good cause . . . for the failure to file on time" is the most important.³¹ We are also mindful of the Commission's direction that, although pro se litigants are expected to comply with its procedural rules, they are generally extended some latitude.³²

NextEra contends that Friends/NEC have not addressed the eight relevant factors as required by 10 C.F.R. § 2.309(c)(2).³³ However, Friends/NEC explain in their extension request that their failure to file on time was caused by persistent difficulties with the NRC electronic filing system despite their good faith efforts.³⁴ We are satisfied that Friends/NEC have shown good cause for submitting their petition shortly after the deadline, especially in light of their having served all parties by email just minutes after midnight. We therefore grant Friends/NEC's request and accept their petition.³⁵

No other party having objected, we also grant Friends/NEC's request for an extension of time in which to file its reply.

B. Supplemental Filings

NRC regulations provide for petitions, answers and replies unless otherwise specified by the Commission or the presiding officer,³⁶ and state: "No other written answers or replies will be

³¹ Crow Butte Res., Inc. (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 549 n.61 (2009) (referring to 10 C.F.R. § 2.309(c)(i)).

³² South Carolina Elec. & Gas Co. (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-01, 71 NRC __, __ (slip op. at 5) (Jan. 7, 2010) (citations omitted).

³³ NextEra Answer to Friends/NEC Petition at 4.

³⁴ Friends/NEC Petition Extension Request at 1-2.

³⁵ As we did at oral argument, however, we again caution petitioners that late filings burden the other parties and the Board. Tr. at 60.

³⁶ 10 C.F.R. § 2.309(h).

entertained.”³⁷ At oral argument the Board identified numerous typographical errors in the sworn declaration of Mr. Blanch that accompanied Friends/NEC’s original submission, and stated that we would allow Friends/NEC seven days in which to file a corrected version.³⁸ The Board also ruled that we would permit the Applicant and the NRC Staff, within a further seven-day period, to object to any changes that they viewed as beyond the Board’s intent or that unfairly introduced new arguments.³⁹ We stated: “[I]t is not the Board’s intent to encourage the filing of a declaration that presents new arguments, [or] new issues”⁴⁰

Unfortunately, the Board’s largess precipitated the filing of more than 150 pages of corrections, objections to corrections, responses to the objections, and objections to the responses.⁴¹ Although some of Friends/NEC’s numerous corrections appear to be of the sort the Board expected, others — such as bolstering the description of Mr. Blanch’s credentials to opine concerning subjects on which his expertise had been questioned during oral argument⁴² — clearly go further. In the circumstances, the Board will not try to parse through which of Friends/NEC’s changes constitute authorized corrections and which improperly go beyond what the Board intended.

³⁷ Id. § 2.309(h)(3).

³⁸ Tr. at 69-70.

³⁹ Id.

⁴⁰ Id. at 70.

⁴¹ Declaration of Paul Blanch (Dec. 6, 2010); NRC Information Notice 20 10-26: Submerged Electrical Cables (Dec. 2, 2010); Friends/NEC Supplement – Errors and Corrections and New Information; NextEra Objections to Supplement; NRC Staff Objections to Supplement; Friends/NEC Motion to Reply; Friends/NEC Reply to Objections; NextEra Opposition to Reply; NRC Staff Opposition to Reply.

⁴² Compare Tr. at 125 with Friends/NEC Supplement – Errors and Corrections and New Information at 3-4.

Accordingly, in ruling on Friends/NEC's petition, we have not considered or relied upon their submissions subsequent to their original petition and reply. We do draw reasonable inferences where their original filings contain obvious typographical errors.

C. Standing

Friends/NEC and the Beyond Nuclear petitioners assert they have standing to intervene as representatives of their members living in the vicinity of Seabrook.⁴³ An organization may represent the interests of its members using representational standing if it can: (1) show that the interests it seeks to protect are germane to its own purpose; (2) identify, by name and address, at least one member who qualifies for standing in his or her own right; (3) show that it is authorized by that member to request a hearing on his or her behalf; and (4) show that neither the claim asserted nor the relief requested requires an individual member's participation in the organization's legal action.⁴⁴

As to whether an individual member of a petitioning organization qualifies for standing in his or her own right, traditional judicial standing concepts require a showing that the individual has suffered or might suffer a concrete and particularized injury that is (1) fairly traceable to the challenged action; (2) likely redressible by a favorable decision;⁴⁵ and (3) arguably within the

⁴³ Friends/NEC Petition at 2; Beyond Nuclear Petition at 5.

⁴⁴ Consumers Energy Co. (Palisades Nuclear Power Plant), CLI-07-18, 65 NRC 399, 409 (2007) (citations omitted); see also Friends of the Earth, Inc. v. Laidlaw Env'tl. Servs. (TOC), Inc., 528 U.S. 167, 181 (2000) ("An association has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit" (citing Hunt v. Washington State Apple Advertising Comm'n, 432 U.S. 333, 343 (1977))).

⁴⁵ Georgia Inst. of Tech. (Georgia Tech Research Reactor), CLI-95-12, 42 NRC 111, 115 (1995) (citing Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-61 (1992)).

zone of interests protected by the governing statutes⁴⁶ — here the Atomic Energy Act (AEA)⁴⁷ and the National Environmental Policy Act (NEPA).⁴⁸ Although the NRC applies these traditional standing concepts,⁴⁹ in proceedings such as this it presumes that an individual has standing to intervene without the need to address them upon a showing that he or she lives within, or otherwise has frequent contacts with, a geographic zone of potential harm.⁵⁰ The pertinent zone in operating license renewal proceedings and other power reactor license matters is the area within a 50-mile radius of the site.⁵¹ The Commission also directs us to “construe the petition in favor of the petitioner” in determining whether a petitioner has demonstrated standing.⁵²

⁴⁶ Florida Power & Light Co. (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989) (quoting Metro. Edison Co. (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 (1983)).

⁴⁷ 42 U.S.C. §§ 2011-2297.

⁴⁸ Id. §§ 4321-4347.

⁴⁹ Georgia Tech., CLI-95-12, 42 NRC at 115 (citing Cleveland Elec. Illuminating Co. (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993)); St. Lucie, CLI-89-21, 30 NRC at 329; see also 10 C.F.R. § 2.309(d)(1) (requiring that petition state the petitioner’s right under the Atomic Energy Act to be a party, the petitioner’s interest in the proceeding, and the possible effect of a decision on the petitioner’s interests).

⁵⁰ St. Lucie, CLI-89-21, 30 NRC at 329.

⁵¹ Calvert Cliffs 3 Nuclear Project, LLC (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 917 (2009) (explaining the presumption’s rationale is, “in construction permit and operating license cases, that persons living within the roughly 50-mile radius of the facility ‘face a realistic threat of harm’ if a release from the facility of radioactive material were to occur” (citation omitted)).

⁵² Georgia Tech., CLI-95-12, 42 NRC at 115.

1. The Beyond Nuclear Petitioners Have Demonstrated Representational Standing.

Although neither NextEra nor the NRC Staff objects to the Beyond Nuclear petitioners' representational standing,⁵³ we have an independent obligation to determine whether they have adequately demonstrated standing.⁵⁴ The Seacoast Anti-Pollution League asserts it is "a not-for-profit organization based in Portsmouth, New Hampshire that has worked since 1969 to protect the health, safety and general well-being of the New Hampshire Seacoast community from nuclear pollution and other threats to the environment."⁵⁵ The New Hampshire Sierra Club asserts it is "a not-for-profit organization based in Concord, NH" working "to protect . . . environmental quality, and working for a clean renewable energy future."⁵⁶ Beyond Nuclear asserts it is "a not-for-profit organization," and we infer from its name that the organization is concerned about nuclear issues.⁵⁷

The injury to their members on which the Beyond Nuclear petitioners base their claim to representational standing is the risk that extended operation of the plant may "pose an undue and unacceptable risk to the environment and jeopardize the health, safety and welfare of [their] members who live, recreate and conduct their business" nearby.⁵⁸ To demonstrate this injury,

⁵³ NextEra Answer to Beyond Nuclear Petition at 3 n.1; NRC Staff Answer at 8.

⁵⁴ 10 C.F.R. § 2.309(d)(3); see also Virginia Elec. & Power Co. (North Anna Power Station, Unit 3), LBP-08-15, 68 NRC 294, 303 (2008) (noting that although "[n]either the Applicant nor the NRC Staff challenges [the petitioner's] standing," the board must "make [its] own determination whether [the petitioner] has satisfied standing requirements").

⁵⁵ Beyond Nuclear Petition at 4.

⁵⁶ Id. at 4-5.

⁵⁷ Id. at 4.

⁵⁸ Id. at 5.

the organizations have submitted sworn declarations from two Beyond Nuclear members,⁵⁹ one New Hampshire Sierra Club member,⁶⁰ and seven Seacoast Anti-Pollution League members⁶¹ who all acknowledge their membership and state that their interests will not be adequately represented unless their respective organizations participate in this proceeding on their behalf, impliedly authorizing the organizations to represent them.⁶² All of these declarants provide home addresses within thirty miles of the site and state their concern that the plant's extended operation may "pose an unacceptable risk to the environment and . . . public health and safety."⁶³

Beyond Nuclear, the New Hampshire Sierra Club, and the Seacoast Anti-Pollution League's individual declarants have established standing to intervene in their own right and have authorized the organizations to represent their interests. Accordingly, each organization has demonstrated representational standing.

2. Friends/NEC Have Demonstrated Representational Standing.

Friends/NEC assert they have representational standing on behalf of "members that reside within Seabrook Station's affected vicinity and whose particular interests are directly

⁵⁹ Declaration of Christopher Nord (dated Oct. 16, 2010; submitted Oct. 20, 2010); Declaration of Kristie A. Conrad (dated Sept. 12, 2010; submitted Oct. 20, 2010) [collectively, hereinafter Beyond Nuclear Declarations].

⁶⁰ Declaration of Kurt Ehrenberg (dated Sept. 17, 2010; submitted Oct. 20, 2010).

⁶¹ Declaration of Phyllis Killen-Abell (dated Sept. 16, 2010; submitted Oct. 20, 2010); Declaration of Patricia L. Warren (dated Sept. 16, 2010; submitted Oct. 20, 2010); Declaration of Douglas K. Bogen (dated Sept. 16, 2010; submitted Oct. 20, 2010); Declaration of Herbert S. Moyer (dated Sept. 16, 2010; submitted Oct. 20, 2010); Declaration of Virginia S. Cole (dated Sept. 16, 2010; submitted Oct. 20, 2010); Declaration of Lee Roberts (dated Sept. 17, 2010; submitted Oct. 20, 2010); Declaration of David Diamond (dated Sept. 16, 2010; submitted Oct. 20, 2010) [collectively, hereinafter Seacoast Anti-Pollution League Declarations].

⁶² Beyond Nuclear Declarations; Declaration of Kurt Ehrenberg; Seacoast Anti-Pollution League Declarations.

⁶³ Beyond Nuclear Declarations; Declaration of Kurt Ehrenberg; Seacoast Anti-Pollution League Declarations.

affected by this matter.”⁶⁴ Friends/NEC also seek discretionary intervention under 10 C.F.R. § 2.309(e).⁶⁵ Although the NRC Staff agrees that Friends/NEC have shown representational standing,⁶⁶ NextEra contends their petition should be denied for lack of standing because no “valid handwritten or electronic signatures” appear on the member declarations submitted with it.⁶⁷

New England Coalition asserts it is “a Vermont not-for-profit corporation” whose purpose is “to oppose nuclear hazards and advocate for sustainable energy alternatives to nuclear power.”⁶⁸ Friends of the Coast asserts that it is a “non-profit membership organization” incorporated in Maine.⁶⁹ Friends/NEC assert that “oppos[ing] nuclear hazards” is a purpose Friends of the Coast shares with its co-petitioner.⁷⁰

On behalf of members living near the facility, Friends/NEC seek to avert the threat of “radiological contamination, evacuation, loss of property, or other harms in the event of any mishap at the plant.”⁷¹ Friends/NEC also assert that members “use and enjoy the segment of the New Hampshire, Maine, and Massachusetts seacoast adjacent to Seabrook Station for social activities, work, recreation, and the gathering of natural provender.”⁷² Friends/NEC submitted declarations with their petition under the name of one New England Coalition

⁶⁴ Friends/NEC Petition at 3.

⁶⁵ Id.

⁶⁶ NRC Staff Answer at 2, 7.

⁶⁷ NextEra Answer to Friends/NEC at 4-6.

⁶⁸ Friends/NEC Petition at 2.

⁶⁹ Id.

⁷⁰ Id. at 3.

⁷¹ Id. at 4.

⁷² Id.

member⁷³ and five Friends of the Coast members.⁷⁴ The declarations submitted with Friends/NEC's petition state that the declarants live between four and forty miles of Seabrook, enjoy outdoor activities, rely on local produce suppliers and local drinking water supplies, are members of the petitioning entities, and have authorized their respective entities to represent them in this proceeding.⁷⁵

None of the declarations submitted with Friends/NEC's petition includes a handwritten signature or digital ID certificate.⁷⁶ 10 C.F.R. § 2.304(d) requires that submitted documents be signed. This subsection allows persons without digital ID certificates to sign electronically by typing "Executed in Accord with 10 C.F.R. § 2.304(d)" or its equivalent on the signature line and including the date of signature and the signatory's name, capacity, address, phone number, and email address,⁷⁷ but Friends/NEC and their declarants did not avail themselves of this option. Instead Friends/NEC offered in their petition's certificate of service to "promptly provide via First Class U.S. Mail, postage prepaid," "record hardcopies of declarations bearing hand signatures of and [sic] expert witness and represented members" to the Commission "[s]hould the Commission require it."⁷⁸

⁷³ Declaration of Karen Stewart (dated Sept. 29, 2010; submitted Oct. 21, 2010).

⁷⁴ Declaration of Saudra Gavutis (dated Oct. 18, 2010; submitted Oct. 21, 2010); Declaration of Deborah Breen (dated Oct. 18, 2010; submitted Oct. 21, 2010); Declaration of Deborah Grinnell (dated Oct. 18, 2010; submitted Oct. 21, 2010); Declaration of Diane M. Teed (dated Oct. 12, 2010; submitted Oct. 21, 2010); Declaration of Peter Kellman (dated Sept. 30, 2010; submitted Oct. 21, 2010) [collectively, hereinafter Friends Declarations].

⁷⁵ Declaration of Karen Stewart; Friends Declarations.

⁷⁶ Declaration of Karen Stewart; Friends Declarations.

⁷⁷ 10 C.F.R. § 2.304(d)(ii).

⁷⁸ Certificate of Service (Oct. 21, 2010).

With their reply memorandum, Friends/NEC resubmitted images of their initial six member declarations scanned so that handwritten signatures are visible.⁷⁹ Five of the six declarations were hand-signed, but the name of Deborah Breen, purported Friends of the Coast member, was typed in a cursive font instead of hand-signed and was not accompanied by any statement that she had signed pursuant to 10 C.F.R. § 2.304(d)(ii).⁸⁰ Friends/NEC also submitted a new seventh declaration with their reply without acknowledging that it had not been submitted with their petition.⁸¹ Neither NextEra nor the NRC Staff objected to the resubmitted member declarations.

Regardless of whether Deborah Breen's declaration lacks a valid signature and whether the previously unfiled seventh declaration is untimely, the other five declarations show that individual members of Friends of the Coast and the New England Coalition have standing to intervene in their own right and have authorized the organizations to represent their interests. Accordingly, each organization has demonstrated representational standing, and we need not reach Friends/NEC's request for discretionary intervention.

D. Contention Admissibility

An admissible contention must: (1) state the specific legal or factual issue sought to be raised; (2) briefly explain the basis for the contention; (3) demonstrate that the issue raised is within the proceeding's scope; (4) demonstrate that the issue raised is material to the findings the NRC must make to support the action that is involved in the proceeding; (5) concisely state

⁷⁹ Declaration of Deborah Grinnell (dated Oct. 18, 2010; submitted Nov. 23, 2010); Declaration of Diane M. Teed (dated Oct. 12, 2010; submitted Nov. 23, 2010); Declaration of Deborah Breen (dated Oct. 18, 2010; submitted Nov. 23, 2010); Declaration of Peter Kellman (dated Sept. 30, 2010; submitted Nov. 23, 2010); Declaration of Sandra Gavutis (dated Oct. 18, 2010; submitted Nov. 23, 2010); Declaration of Karen Stewart (dated Sept. 29, 2010; submitted Nov. 23, 2010) [collectively, hereinafter Resubmitted Friends/NEC Declarations].

⁸⁰ Resubmitted Friends/NEC Declarations.

⁸¹ Declaration of Mary Lampert (dated Sept. 20, 2010, submitted Nov. 23, 2010).

the alleged facts or expert opinions that support the petitioner's position and upon which the petitioner intends to rely at the hearing, including references to the specific sources and documents on which the petitioner intends to rely; and (6) show that a genuine dispute exists on a material issue of law or fact by referring to specific portions of the application that the petitioner disputes or, if the application is alleged to be deficient, by identifying such deficiencies and the supporting reasons for this allegation.⁸²

The Commission's regulations permit admission of a contention only if it meets these requirements because the agency "should not have to expend resources to support the hearing process unless there is an issue that is appropriate for, and susceptible to, resolution in an NRC hearing."⁸³ "Mere 'notice pleading' is insufficient,"⁸⁴ but a petitioner does not have to prove its contentions at the admissibility stage,⁸⁵ and we do not adjudicate disputed facts at this juncture.⁸⁶

The factual support required is "a minimal showing that material facts are in dispute."⁸⁷ The necessary factual support "need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand a summary disposition motion."⁸⁸

⁸² 10 C.F.R. § 2.309(f)(1)(i)-(vi).

⁸³ Final Rule, Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2202 (Jan. 14, 2004).

⁸⁴ Fansteel, Inc. (Muskogee, Oklahoma, Site), CLI-03-13, 58 NRC 195, 203 (2003).

⁸⁵ Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 139 (2004).

⁸⁶ Amergen Energy Co., LLC (Oyster Creek Nuclear Generating Station), LBP-06-22, 64 NRC 229, 244 (2006) (citing Mississippi Power & Light, Co. (Grand Gulf Nuclear Station, Units 1 & 2), ALAB-130, 6 AEC 423, 426 (1973)).

⁸⁷ Gulf States Utils. Co. (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 51 (1994) (quoting Final Rule, Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)).

⁸⁸ Final Rule, Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. at 33,171.

Among the limited issues within the scope of a license renewal proceeding are alternatives for reducing adverse environmental impacts listed as Category 2 issues in appendix B to subpart A of 10 C.F.R. Part 51,⁸⁹ including cost-effective alternatives for mitigating severe accidents,⁹⁰ and plans to manage the effects of aging on enumerated functions of certain systems, structures, and components during the period of extended operation.⁹¹ Safety issues that are routinely addressed through the agency's ongoing regulatory oversight are outside the scope of license renewal proceedings because considering them here would be "unnecessary and wasteful."⁹²

Additionally, "no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding" unless the petitioner first obtains a waiver.⁹³ One such regulation that cannot be challenged is the determination that, for any license renewal of a nuclear power plant, the probability-weighted consequences of a severe accident are small.⁹⁴

Although a challenge to the generic determination of the environmental impact of a severe accident would be outside the scope of a license renewal proceeding, the Commission's regulations do not generically determine cost-effective severe accident mitigation alternatives

⁸⁹ 10 C.F.R. §§ 54.29(b), 51.53(c)(3)(iii); NEPA, 42 U.S.C. § 4332(2)(C)(iii).

⁹⁰ 10 C.F.R. §§ 54.29(b), 51.53(c)(2), 51.53(c)(3)(ii)(L).

⁹¹ Id. §§ 54.4, 54.29(a)(1).

⁹² Duke Energy Corp. (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-26, 56 NRC 358, 363-64 (2002) (citation omitted); see also Florida Power & Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 8 (2001) ("For license renewal, the Commission found that it would be unnecessary to include in our review all those issues already monitored, reviewed, and commonly resolved as needed by ongoing regulatory oversight.").

⁹³ 10 C.F.R. § 2.335(a).

⁹⁴ 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 ("Severe accidents[:] The probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to ground water, and societal and economic impacts from severe accidents are small for all plants.").

across all plants.⁹⁵ But the Commission cautioned in Entergy Nuclear Generation Company (Pilgrim Nuclear Power Station) (Pilgrim I) that a SAMA contention is admissible only if “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.”⁹⁶

1. Mootness

On October 29, 2010 — after the deadline for filing timely petitions but before the time for answers and replies — NextEra submitted a supplement to the Application that relates to the subject matter of Friends/NEC Contentions 1 and 3. In their answers, NextEra and the NRC Staff assert that this supplement moots many of petitioners’ claims.⁹⁷ While choosing not to do so, Friends/NEC had the opportunity to address these mootness arguments in their reply or to move to amend their original contentions. The Board therefore considers these mootness arguments in our analysis of Friends/NEC Contention 1. Because we do not admit Friends/NEC Contention 3 for other reasons, we do not address mootness in connection with that contention.

On January 14, 2011 — long after briefing and oral argument were completed — NextEra submitted a letter supplying the Board with new information that allegedly “has the potential to moot or resolve” some of petitioners’ claims relating to SAMA analyses challenged in Friends/NEC Contention 4.⁹⁸ NextEra properly submitted this information in the belief that “[a] party to an NRC proceeding is obligated to keep the Board informed of relevant and material new information.”⁹⁹

⁹⁵ Id. (“[A]lternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives.” (citing 10 C.F.R. § 51.53(c)(3)(ii)(L))).

⁹⁶ CLI-10-11, 71 NRC __, __ (slip op. at 39) (Mar. 26, 2010).

⁹⁷ NextEra Answer to Friends Petition at 41-42, NRC Staff Answer at 19.

⁹⁸ Letter from Steven Hamrick, NextEra Energy Seabrook, to Licensing Board, supra note 19, at 4.

⁹⁹ Id. at 1.

The significance of NextEra's new information, however, is vigorously disputed by Friends/NEC.¹⁰⁰ NextEra does not expressly ask the Board to act upon its new information and, at this stage of the proceeding, such a request should be in the form of a motion. Under 10 C.F.R. § 2.323(b), all motions must include a certification that "the movant has made a sincere effort to contact other parties in the proceeding and resolve the issue(s) raised in the motion, and that the movant's efforts to resolve the issue(s) have been unsuccessful."¹⁰¹ Motion practice ensures compliance with the Commission's preference for an initial attempt at voluntary resolution and, if that is not possible, that claims are presented to the Board with specificity and that participants are given an opportunity to respond. Because NextEra did not comply with 10 C.F.R. § 2.323(b), the Board does not consider the information supplied with NextEra's January 14, 2011 letter in connection with our analysis of Friends/NEC Contention 4.

2. Beyond Nuclear Contention

The Beyond Nuclear petitioners' sole contention states:

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 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.¹⁰²

¹⁰⁰ Friends of the Coast and New England Coalition's Objection to NextEra Energy Seabrook, LLC's January 14, 2011 Letter Filing of Purported Material New Information at 2.

¹⁰¹ 10 C.F.R. § 2.323(b).

¹⁰² Beyond Nuclear Petition at 6.

The Beyond Nuclear petitioners acknowledge¹⁰³ that, in declining to analyze wind power as a reasonable alternative, the Applicant relied¹⁰⁴ in part on the NRC's own generic environmental impact statement (GEIS), which concludes that the technology is "an inappropriate choice for baseload power."¹⁰⁵ As observed by the NRC Staff during oral argument, however, the GEIS is not binding and its conclusion concerning the practicality of wind power has not been revised in the past 15 years.¹⁰⁶

In contrast, the Beyond Nuclear petitioners support their contention with 20 exhibits purporting to demonstrate that, within the foreseeable future, an environmentally superior system of interconnected offshore wind farms might provide baseload power in the relevant region and thus should have been evaluated in greater detail in the Applicant's environmental report. Petitioners cite various examples, including:

a. The Department of Energy's National Renewable Energy Laboratory has stated that, although large-scale deployment of wind energy is often thought to be limited by its intermittent output, in fact "[w]ind energy systems that combine wind turbine generation with energy storage and long-distance transmission may overcome these obstacles and provide a source of power that is functionally equivalent to a conventional baseload electric power plant."¹⁰⁷

¹⁰³ Id. at 17.

¹⁰⁴ NextEra Energy Seabrook, LLC, Environmental Report - Operating License Renewal Stage Seabrook Station (May 25, 2010) at 7-12 (ADAMS Accession Nos. ML101590092 and ML101590089) [hereinafter ER].

¹⁰⁵ Generic Environmental Impact Statement for License Renewal of Nuclear Plants, NUREG-1437, Vol. 1, § 8.3.1 (May 1996) [hereinafter GEIS].

¹⁰⁶ Tr. at 31-32.

¹⁰⁷ Beyond Nuclear Petition, Exh. 3, National Renewable Energy Laboratory, U.S. Department of Energy, Creating Baseload Wind Power Systems Using Advanced Compressed Air Energy Storage Concepts (Oct. 3, 2006).

b. A manuscript published in Stanford University's Journal of Applied Meteorology and Climatology has recognized that "[a] solution to improve wind power reliability is interconnected wind power" because, "by linking multiple wind farms together it is possible to improve substantially the overall performance of the interconnected system (i.e., array) when compared with that of any individual wind farm."¹⁰⁸

c. Google corporation has publicly announced its investment in a consortium to build an offshore "backbone transmission project" to stimulate development of East Coast wind farms (a decade before the current Seabrook operating license expires).¹⁰⁹ As reported in the Washington Post, "[t]he transmission line would address the problem of wind's intermittent supply by tapping into a much broader swath of the coast to meet consumer demand."¹¹⁰

d. By way of a comparative demonstration of the perceived practical importance of wind power and other renewable sources of energy, nine European North Sea nations (Germany, France, Belgium, Denmark, Sweden, Norway, Luxembourg, the United Kingdom, and the Netherlands) were drawing up formal plans as of January 2010 to build a \$40 billion undersea energy grid for dedicated transmission of power from such sources.¹¹¹

e. Worldwide, it has been asserted, wind power might rival or exceed nuclear power as a source of electricity as early as 2014.¹¹² According to the Global Wind Energy Council, installed

¹⁰⁸ Beyond Nuclear Petition, Exh. 4, Cristina L. Archer & Mark Z. Jacobson, Supplying Baseload Power and Reducing Transmission Requirements by Interconnecting Wind Farms, 46 J. of Appl. Meteorol. & Clim. 1701, 1702 (Nov. 2007).

¹⁰⁹ Beyond Nuclear Petition, Exh. 5, Juliet Eilperin, Google backs 'superhighway' for wind power, Washington Post, Oct. 13, 2010.

¹¹⁰ Id.

¹¹¹ Beyond Nuclear Petition, Exh. 6, Tali Aaron, European Countries Unite to Invest \$40 Billion in Huge Off-Shore Renewable Energy Super-Grid, Buildaroo.com, Jan. 6, 2010.

¹¹² Beyond Nuclear Petition, Exh. 10, Jeremy van Loon, Global Wind Power Capacity May Rival Nuclear Within Four Years, Bloomberg News, Sept. 23, 2010.

wind capacity will reasonably reach 400 gigawatts by 2014, whereas, according to the World Nuclear Association, current nuclear power capacity is about 376 gigawatts.¹¹³

f. Closer to home, a study by researchers at the University of Delaware and Stony Brook University analyzed historical wind data from eleven meteorological stations distributed along the U.S. East Coast, calculated the potential hourly power output at each site, and then simulated a power line connecting the sites.¹¹⁴ Based on these calculations, the study concluded that “[t]he variability of wind power is not as problematic as is often supposed.”¹¹⁵

g. On June 8, 2010, the United States Department of the Interior and ten East Coast states — four of which (Maine, New Hampshire, Massachusetts and Rhode Island) are within the Applicant’s region of interest — signed a Memorandum of Understanding to establish the Atlantic Offshore Wind Energy Consortium to promote and to accelerate the development of the “exceptional wind energy resources off [the] coast.”¹¹⁶ Allegedly, the proposed consortium was publicized months before formal execution of the Memorandum of Understanding and months before NextEra filed its renewal application,¹¹⁷ but is neither discussed nor acknowledged in the Applicant’s environmental report.

Although not all of the Beyond Nuclear petitioners’ 20 exhibits directly address the region of interest, we agree that, taken together, they provide the required “minimal” factual support for admitting their contention, and that the contention otherwise satisfies each of the requirements

¹¹³ Id.

¹¹⁴ Beyond Nuclear Petition, Exh. 8, Willett Kempton et al., Electric power from offshore wind via synoptic-scale interconnection,” PNAS Early Edition (April 2010) at 1.

¹¹⁵ Id.

¹¹⁶ Beyond Nuclear Petition, Exh. 13, Salazar Signs Agreement with 10 East Coast Governors to Establish Atlantic Offshore Wind Energy Consortium, Press Release, Department of Interior (June 8, 2010).

¹¹⁷ Id.

of 10 C.F.R. § 2.309(f)(1). The arguments against admissibility advanced by the Applicant and by the NRC Staff are not persuasive.

First, in challenging admissibility, the Applicant and the Staff conflate the merits of the contention with the adequacy of its pleading. The Applicant correctly points out that “[a]lternatives that are not reasonable can be eliminated from further study”¹¹⁸ and argues that “petitioners have not demonstrated that baseload wind generation is a reasonable alternative.”¹¹⁹ But whether an interconnected system of offshore wind farms constitutes a “reasonable” alternative is the very issue on which the Beyond Nuclear petitioners seek a hearing. When a contention alleges the need for further study of an alternative, from an environmental perspective, “such reasonableness determinations are the merits, and should only be decided after the contention is admitted.”¹²⁰ To be entitled to a hearing, petitioners need not demonstrate that they will necessarily prevail, but only that there is at least some minimal factual support for their position. The Commission has cautioned that “complex, fact-intensive issues” are rarely appropriate for summary disposition,¹²¹ much less for resolution on the initial pleadings.

Thus, many of the Applicant’s and the Staff’s arguments improperly address the merits of the Beyond Nuclear petitioners’ contention, rather than whether petitioners have provided “a minimal showing that material facts are in dispute, thereby demonstrating that an inquiry in

¹¹⁸ NextEra Answer to Beyond Nuclear Petition at 15.

¹¹⁹ Id. at 18 (capitalization omitted).

¹²⁰ Progress Energy Florida, Inc. (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-10, 70 NRC 51, 86 (2009) (emphasis in original), rev’d in part on other grounds, CLI-10-02, 71 NRC __, __ (slip op. at 1-2) (Jan. 7, 2010).

¹²¹ Pilgrim I, CLI-10-11, 71 NRC at __ (slip op. at 23).

depth is appropriate.”¹²² For example, although the Applicant concedes that “[p]etitioners have presented information to show that generation of baseload energy from wind is theoretically possible,”¹²³ it asserts that “[t]he proposal for offshore interconnected wind farms . . . faces steep technological hurdles”¹²⁴ and “such an interconnected system would be exorbitantly expensive.”¹²⁵ Petitioners may face a difficult task in trying to demonstrate that such a system is both practical and environmentally superior to the continued operation of Seabrook as an existing facility. Such disputed facts are not appropriately resolved, however, in connection with the Board’s determination of whether petitioners have made the necessary showing to warrant admission of a contention.

It is not the case, as the NRC Staff appears to contend, that the Beyond Nuclear petitioners must first demonstrate “that NextEra is required to include an alternatives analysis in its ER beyond that which was already included”¹²⁶ in order to have a hearing on whether NextEra is required to include such an analysis. At this stage, it is sufficient for the Beyond Nuclear petitioners to proffer some “minimal” factual support for that proposition.

Second, the Staff argues — and the Applicant suggests¹²⁷ — that the Beyond Nuclear petitioners must show “that wind is a feasible alternative at the present time.”¹²⁸ Although “remote and speculative” alternatives need not be addressed in an applicant’s environmental

¹²² Final Rule, Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. at 33,171 (quoting Connecticut Bankers Ass’n v. Board of Governors, 627 F.2d 245, 251 (D.C. Cir. 1980)).

¹²³ NextEra Answer to Beyond Nuclear Petition at 18.

¹²⁴ Id. at 20.

¹²⁵ Id. at 22.

¹²⁶ NRC Staff Answer at 94.

¹²⁷ See Tr. at 29.

¹²⁸ NRC Staff Answer at 102.

report,¹²⁹ the relevant time frame is considerably broader than “the present time.” As stated in Carolina Environmental Study Group v. United States¹³⁰ — a case on which the Applicant itself relies¹³¹ — the obligation is to consider alternatives “as they exist and are likely to exist.”¹³² Allegedly, some of the Beyond Nuclear petitioners’ supporting references show that an integrated system of offshore wind farms could be a viable source of baseload power in the region as early as 2015.¹³³ Whether this is so remains to be seen. In the Board’s view, however, petitioners have proffered sufficient “minimal” evidence to warrant further inquiry as to whether such a system might be “likely to exist” during the relevant time period.¹³⁴

Third, contrary to arguments by the Applicant and the NRC Staff,¹³⁵ we are not persuaded that, as a matter of law, an integrated system of offshore wind farms could not constitute a single, discrete source for baseload energy. Absent further information about such a system, this seems to pose, at a minimum, a disputed question of fact. Certainly, such a system, if constructed, would be unlike the proposed alternative that was rejected by the Indian

¹²⁹ See Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 551 (1978) (quoting NRDC v. Morton, 458 F.2d 827, 837-38 (1972)).

¹³⁰ 510 F.2d 796 (D.C. Cir. 1975).

¹³¹ NextEra Answer to Beyond Nuclear Petition at 23.

¹³² Carolina Env'tl. Study Group, 510 F.2d at 801 (emphasis added). Indeed, at argument, the Applicant expressly agreed that the Carolina Environmental Study Group test is the appropriate standard. Tr. at 28-29. Likewise, the NRC Staff — which appeared to contend in its answer that Kleppe v. Sierra Club, 427 U.S. 390, 405-06 (1976) holds otherwise, NRC Staff Answer at 96 — acknowledged at argument that Kleppe speaks only to when an environmental analysis must be prepared, and does not address whether the content of such an analysis should address alternatives that are reasonably likely to become available in the future. Tr. at 171.

¹³³ Tr. at 24, 34.

¹³⁴ For purposes of deciding the admissibility of the proffered contention, the Board need not decide the exact date by which an integrated system of offshore wind farms would have to be found “likely to exist.” That issue will doubtlessly turn on disputed fact questions that cannot appropriately be resolved on the pleadings.

¹³⁵ NextEra Answer to Beyond Nuclear Petition at 27-31; NRC Staff Answer at 99.

Point Board, which involved an allegation that multiple, unrelated sources of electricity ought to be evaluated collectively.¹³⁶

Finally, contrary to the Applicant's and the Staff's arguments,¹³⁷ the contention is not a prohibited challenge to a Commission regulation. Petitioners apparently know how to challenge a Commission regulation, given that they have done so in a separate proceeding that questions whether the NRC should accept license renewal applications as early as 20 years before expiration of the existing license.¹³⁸ Both in their pleadings¹³⁹ and at oral argument¹⁴⁰ the Beyond Nuclear petitioners disavow any attempt to challenge a Commission regulation in this proceeding. Rather, their point here is simply that decisions have consequences. They contend that, if an applicant chooses to seek renewal as early as 20 years prior to expiration — as it clearly is entitled to do under the Commission's existing rules¹⁴¹ — then perhaps its ability to criticize as “speculative” a petitioner's claims about the necessarily distant extended operational period is somewhat attenuated.¹⁴² In any event, because the Beyond Nuclear petitioners have demonstrated some possibility that wind power might be a reasonable

¹³⁶ See Entergy Nuclear Operations, Inc. (Indian Point, Units 2 and 3), LBP-08-13, 68 NRC 43, 95-96 (2008).

¹³⁷ NextEra Answer to Beyond Nuclear Petition at 34-36; NRC Staff Answer at 99-103.

¹³⁸ See Beyond Nuclear Petition, Exh. 2, 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).

¹³⁹ Beyond Nuclear Petition at 14-16; Beyond Nuclear Reply at 36-38.

¹⁴⁰ Tr. 12-14.

¹⁴¹ See 10 C.F.R. § 54.17(c).

¹⁴² See, e.g., Beyond Nuclear Petition at 14 (contending that applying to renew a license twenty years before its expiration “adversely affects the quality of the submittal and veracity of the applicant's claims pertaining to the reviewed alternatives to the proposed federal relicensing action”).

alternative as early as 2015, we need not necessarily accept this argument in order to admit their contention.

We agree with the Applicant and the NRC Staff, however, that, although the contention itself might be read more broadly, petitioners' supporting facts focus exclusively on wind power generation, and thus the scope of the admitted contention must be so limited.¹⁴³ Likewise, the NRC Staff points out that an application for renewal of an operating license need not discuss the need for power.¹⁴⁴ Unlike the NRC Staff,¹⁴⁵ we do not read the contention as challenging NextEra's failure to discuss the need for power. If so construed, however, we agree that such a challenge would be outside the scope of this proceeding.

As so limited, we admit the Beyond Nuclear petitioners' contention.

3. Friends/NEC Contention 1

Friends/NEC Contention 1 states:

The license renewal application for Seabrook Station fails to comply with the requirements of 10 C.F.R. §§ 54.21(a) and 54.29 because applicant has not proposed an adequate or sufficiently specific plan for aging management of non-environmentally qualified inaccessible electrical cables and wiring for which such aging management is required. Without an adequate plan for aging management of non-environmentally qualified inaccessible electrical cables protection of public health and safety cannot be assured.¹⁴⁶

Friends/NEC allege that NextEra's aging management program (AMP) for non-environmentally qualified inaccessible cables and wiring does not comply with 10 C.F.R. §§ 54.21(a) and 54.29 because it does not: (1) address specific recommendations in two reports

¹⁴³ See NextEra Answer to Beyond Nuclear Petition at 17 n.7; NRC Staff Answer at 106-107.

¹⁴⁴ NRC Staff Answer at 107 (citing 10 C.F.R. § 51.53(c)(2)).

¹⁴⁵ Id. ("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 [region of interest].").

¹⁴⁶ Friends/NEC Petition at 10-11.

from the national laboratories at Sandia and Brookhaven;¹⁴⁷ (2) identify testing methods that would adequately assure that submerged or previously submerged cables will perform their functions for the duration of a postulated accident;¹⁴⁸ (3) provide measures to detect cable degradation prior to failure by using techniques for measuring and trending the condition of cable insulation, such as partial discharge testing, time domain reflectometry, dissipation factor testing, and low frequency alternating current testing;¹⁴⁹ and (4) identify the location and extent of Non-EQ Inaccessible Cables in use at Seabrook.¹⁵⁰

In alleging these deficiencies in the Seabrook AMP for inaccessible cables, Friends/NEC assert that “[w]ith respect to adequate assurance of public health and safety and to comply with . . . referenced guidance, [NextEra] must either replace all cables (and splices) that have been exposed to submergence or develop a comprehensive aging management program to preclude moisture and adequately test all cables that have been exposed to an environment for which it was not designed.”¹⁵¹ Petitioners focus on the alleged lack of preventative strategies to preclude submergence or exposure of the cables to a moist environment and of an effective cable testing program to detect the degradation of the cable insulation prior to failure.

¹⁴⁷ Id. at 12, 15-16 (citing Ogden Environmental and Energy Services Co., Inc., Aging Management Guideline for Commercial Nuclear Power Plants – Electrical Cable and Terminations, SAND96-0344, at 6-4 (Sept. 1996) (ADAMS Accession No. ML031140264) and M. Villaran & R. Lofaro, Brookhaven National Laboratory, Essential Elements of an Electrical Cable Condition Monitoring Program, NUREG/CR-7000 (Jan. 2010) (ADAMS Accession No. ML100540050)).

¹⁴⁸ Id. at 14.

¹⁴⁹ Id. at 17. Friends/NEC point out that the NRC recommended these techniques in a generic letter. Id. (quoting NRC Generic Letter 2007-01: Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients at 4 (Feb. 7, 2007)).

¹⁵⁰ Id. at 12.

¹⁵¹ Id. at 20 (emphasis in original).

Friends/NEC Contention 1 meets the requirements of 10 C.F.R. § 2.309(f)(1)(i) through (iv) by providing a specific statement of the contention and by challenging the adequacy of the proposed AMP in the Application to manage aging effects for Non-EQ Inaccessible Cables. Friends/NEC provide references to the appropriate sections of the Application¹⁵² and supporting documents including the Blanch declaration, thereby demonstrating that Friends/NEC have raised a genuine dispute concerning a material issue in accordance with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

Both NextEra and NRC Staff assert that this contention should not be admitted. NextEra contends that “[p]etitioners fail to provide sufficient factual assertions or expert opinion to demonstrate a genuine, material dispute in these aspects of Contention 1”¹⁵³ as required by 10 C.F.R. § 2.309(f)(1)(v) and (vi). NextEra challenges the adequacy of the support provided by petitioners’ expert, stating that “Mr. Blanch does not even claim to have read the Seabrook LRA [license renewal application].”¹⁵⁴ NextEra further conjectures that this is the reason that Mr. Blanch claims to have not found a Time Limited Aging Analysis or AMP for electrical cables.¹⁵⁵

The Board disagrees. Petitioners’ references to various technical documents as well as the declaration from Mr. Blanch adequately support admission of this contention. Ultimately, of course, petitioners might not prevail on their factual allegations. Petitioners nonetheless raise a genuine dispute with the Application by effectively challenging the adequacy of the AMP to manage the aging effects on the cable insulation related to either submersion or exposure to a

¹⁵² See, e.g., Friends/NEC Petition at 13-14 (quoting NextEra Energy Seabrook, LLC, et al., License Renewal Application, Seabrook Station Unit 1 at B-180 through B-182 [hereinafter Application]).

¹⁵³ NextEra Answer to Friends/NEC Petition at 28.

¹⁵⁴ Id. at 26.

¹⁵⁵ Id. at 27.

moist environment. Petitioners have also challenged the lack of an adequate testing program to detect the potential failure of the cables before they are required to perform their intended function.

The Board recognizes that Friends/NEC Contention 1 challenges an AMP that allegedly is consistent with the GALL Report.¹⁵⁶ The GALL Report, developed at the Commission's direction, identifies generic AMPs acceptable to the NRC Staff and documents the technical bases for determining the adequacy of these AMPs to effectively manage the effects of aging during the period of extended plant operation.¹⁵⁷

As the Commission has explained, "a commitment to implement an AMP that the NRC finds is consistent with the GALL Report constitutes one acceptable method" for demonstrating that the effects of aging will be adequately managed.¹⁵⁸ As NextEra acknowledges, "[r]eferencing a program described in the GALL Report does not insulate a program from an adequately supported challenge at a hearing."¹⁵⁹ Just as the NRC Staff does not accept a representation of consistency from an applicant without its own, independent confirmation of the facts,¹⁶⁰ petitioners are not foreclosed from asserting a contention that, at a minimum, likewise requires such confirmation. If adequately supported, such a contention raises a valid question of fact.

¹⁵⁶ Application at B-180, B-182.

¹⁵⁷ Division of Regulatory Improvement Programs, Generic Aging Lessons Learned (GALL) Report, NUREG-1801, Rev. 1, at iii, 1 (Sept. 2005) [hereinafter GALL Report].

¹⁵⁸ Entergy Nuclear Vermont Yankee, L.L.C. (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC __, __ (slip op. at 44) (July 8, 2010) (emphasis added).

¹⁵⁹ NextEra Answer to Friends/NEC Petition at 18 n.5 (citing Vermont Yankee, CLI-10-17, 72 NRC at __ (slip op. at 47)).

¹⁶⁰ Tr. at 74.

The Board further recognizes that petitioners support Friends/NEC Contention 1 with factual assertions that to some extent have been mooted by NextEra's October 29, 2010 supplement to the Application. For example, petitioners challenged the original AMP because it defined significant voltage exposure as "being subjected to system voltage for more than twenty-five percent of the time,"¹⁶¹ but, by eliminating this twenty-five percent threshold, NextEra's new program applies to cables exposed to significant moisture regardless of the frequency of energization.¹⁶² Similarly, petitioners challenged whether manhole inspections with a maximum frequency of every two years would be sufficient to manage aging effects on cable insulation,¹⁶³ but NextEra's revised AMP has reduced the frequency to at least one per year and adds event-driven inspections.¹⁶⁴

The Board admits contentions, however, and not their supporting bases.¹⁶⁵ Although NextEra's October 29, 2010 supplement might moot "many" of petitioners' claims,¹⁶⁶ their remaining allegations still supply the required "minimal" support for Friends/NEC Contention 1, as limited by the Board.

We admit Friends/NEC Contention 1 insofar as it challenges the adequacy of the Seabrook AMP for Non-EQ Inaccessible Cables to manage the age-related degradation of the cable insulation due to exposure to a wet or moist environment. Insofar as the contention

¹⁶¹ Friends/NEC Petition at 14. (quoting Application at B-180 through B-181).

¹⁶² NextEra Answer to Friends/NEC Petition, Attach. 1, Supplement to the NextEra Energy Seabrook, LLC Seabrook Station License Renewal Application, Encl. 2 at 6 (Oct. 29, 2010) [hereinafter Application Supplement].

¹⁶³ Friends/NEC Petition at 15.

¹⁶⁴ Application Supplement, Encl. 2 at 6.

¹⁶⁵ Duke Energy Carolinas, LLC (William States Lee III Nuclear Station, Units 1 and 2), LBP-08-17, 68 NRC 431, 447 (2008).

¹⁶⁶ NRC Staff Answer at 19.

alleges that cables are currently being operated in violation of NRC regulations or that Seabrook is otherwise not in compliance with its current licensing basis (CLB), however, we agree with the Applicant¹⁶⁷ that such claims are beyond the scope of this license renewal proceeding.¹⁶⁸

4. Friends/NEC Contention 2

Friends/NEC Contention 2 states:

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.¹⁶⁹

The contention hinges on whether transformers are active or passive components. The Applicant and the NRC Staff do not dispute that the Application contains no AMP for electrical transformers whose function is important to safety. They say no such plan is necessary because transformers are active components that are not subject to aging management review.¹⁷⁰ Friends/NEC say that transformers are passive components that are subject to aging management review.¹⁷¹

The dispositive question is whether petitioners have adequately raised an issue as to whether transformers constitute active or passive components. Like the Board in the Indian

¹⁶⁷ NextEra Answer to Friends/NEC Petition at 39-40.

¹⁶⁸ See 10 C.F.R. § 54.30(b) (“The licensee’s compliance with the obligation . . . to take measures under its current license is not within the scope of the license renewal review.”).

¹⁶⁹ Friends/NEC Petition at 20 (capitalization omitted).

¹⁷⁰ NextEra Answer to Friends/NEC Petition at 43-47; NRC Staff Answer at 26-30.

¹⁷¹ Friends/NEC Petition at 22 (asserting transformers “are passive devices in that they contain no moving parts and do not undergo a change of properties or state”).

Point proceeding — where a nearly verbatim contention was admitted¹⁷² and survived a motion for summary disposition¹⁷³ — we conclude that they have.

Structures and components that are subject to aging management review include those that perform certain safety-related functions “without moving parts or without a change in configuration or properties.”¹⁷⁴ In contrast to such “passive” components, “active” components are not subject to an aging management review because, as the Commission stated in Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station) (Pilgrim II), “[e]xisting regulatory programs, including required maintenance programs, can be expected to ‘directly detect the effects of aging’ on active functions.”¹⁷⁵

In support of the proposition that transformers are passive components, both the petition and the declaration of Mr. Blanch (a professional engineer with substantial experience in the nuclear industry¹⁷⁶) assert that transformers function without moving parts and without a change in configuration or properties and that failure properly to manage aging of transformers will compromise safety.¹⁷⁷

¹⁷² See Indian Point, LBP-08-13, 68 NRC at 89.

¹⁷³ Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3) (Ruling on Motions for Summary Disposition) (Nov. 3, 2009) at 3-8 (unpublished).

¹⁷⁴ 10 C.F.R. 54.21(a)(1)(i).

¹⁷⁵ CLI-10-14, 71 NRC __, __ (slip op. at 5) (June 17, 2010) (quoting 60 Fed. Reg. 22,461, 22,472 (May 8, 1995)).

¹⁷⁶ See Declaration of Paul Blanch ¶¶ 3-12 (Oct. 18, 2010) [hereinafter Blanch Decl.].

¹⁷⁷ See Friends/NEC Petition at 22; Blanch Decl. ¶¶ 28, 35.

Citing a contrary view found in non-binding Staff guidance,¹⁷⁸ the Applicant and the NRC Staff say that Friends/NEC are simply wrong.¹⁷⁹ During oral argument, however, the Applicant agreed that the Commission has never directly spoken to the issue.¹⁸⁰ Thus, like the Indian Point Board,¹⁸¹ we conclude that whether transformers are active or passive components remains an unresolved issue. In the absence of a definitive designation for transformers, this contention requires fact-based determinations best left to further adjudicatory proceedings.

The Applicant and the NRC Staff seize upon obvious typographical errors in the petition and in the Blanch declaration, arguing that such errors are fatal to admissibility of the contention.¹⁸² For reasons previously explained, we decline to accept petitioners' belated submission of a corrected version of the Blanch declaration. We need not see a corrected version, however, to accept petitioners' representation at oral argument¹⁸³ — or to infer on our own initiative — that neither the petitioners nor Mr. Blanch intended to reference transformers as “active” components when the fundamental thrust of Mr. Blanch's declaration and of the contention itself are just the opposite. Nor do we believe — in light of the common use of word

¹⁷⁸ Letter from Christopher I. Grimes, NRC License Renewal Project Directorate, to Douglas J. Walters, Nuclear Energy Institute, “Determination of Aging Management Review for Electrical Components” (Sept. 19, 1997) at 2, in Nuclear Energy Institute, NEI 95-10, “Industry Guideline for Implementing the Requirements of 10 C.F.R. Part 54 – The License Renewal Rule,” Rev. 3 (Mar. 2001) Appendix C, “References” at C-8 through C-14 (ADAMS Accession No. ML01110576) (NEI Guidelines).

¹⁷⁹ NextEra Answer to Friends/NEC Petition at 44-46; NRC Staff Answer at 27-30.

¹⁸⁰ Tr. at 104.

¹⁸¹ Indian Point, LBP-08-13, 68 NRC at 89.

¹⁸² E.g., NextEra Answer to Friends/NEC Petition at 46 (“[B]oth Petitioners and Mr. Blanch contradict their own positions by admitting that ‘transformers are active devices. . . .’” (citations omitted)); NRC Staff Answer at 30-31 (noting that, after both the petition and the Blanch declaration assert transformers are passive devices, “[t]he very next sentences of both . . . acknowledge that transformers are ‘active devices’” (citations omitted)).

¹⁸³ Tr. at 106-08.

processors — that Mr. Blanch’s earlier inadvertent reference to the Indian Point proceeding¹⁸⁴ (in which he also submitted a declaration) means that he did not actually consider the Seabrook Application. The relevant portion of the declaration expressly references Seabrook.¹⁸⁵ In any event, the Applicant and the Staff do not dispute Mr. Blanch’s claim that the Seabrook Application fails to include an aging management review for safety-related transformers, but dispute only whether such a review is required.

We admit Friends/NEC Contention 2.

5. Friends/NEC Contention 3

Friends/NEC Contention 3 states:

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 [SSCs] that may convey or contain radioactively-contaminated water or other fluids and/or may be important for plant safety.¹⁸⁶

Friends/NEC allege that NextEra’s AMP for buried SSCs violates 10 C.F.R. §§ 54.21 and 54.29(a) because:

(1) it does not provide for adequate inspection of all [SSCs] that may contain or convey water, radioactively-contaminated water, and/or other fluids; (2) there is no adequate leak prevention or detection programs designed to replace such [SSCs] before leaks occur; . . . (3) there is no adequate monitoring to determine if and when leakage from these [SSCs] occurs[,] [and] (4) [t]here is no identification within the LRA of the specific piping systems and tanks covered by this AMP.¹⁸⁷

Despite briefly positing that “leaks and corrosion threaten the integrity of such systems and compromise their ability to achieve their intended function,”¹⁸⁸ the contention focuses on

¹⁸⁴ Blanch Decl. at ¶ 13.

¹⁸⁵ Id. ¶ 1 (stating Friends/NEC retained Mr. Blanch “to provide expert services in connection with . . . an application to add 20 years to the operating license of Seabrook Station”).

¹⁸⁶ Friends/NEC Petition at 22-23 (capitalization omitted).

¹⁸⁷ Id. at 23.

¹⁸⁸ Id. at 24.

controlling the unintentional release of radionuclides into the environment. The heart of Friends/NEC Contention 3 is that “deficiencies in the [AMP] concerning the detection of leaks or corrosion in other [SSCs] containing radioactive water could endanger the safety and welfare of the public.”¹⁸⁹ More specifically, Friends/NEC Contention 3 contends that “leaks of underground pipes and tanks can result in the release of significant amounts of radioactive materials into the groundwater or the atmosphere[] [and] [e]xposure to this radiation can threaten human health.”¹⁹⁰

Friends/NEC Contention 3 is inadmissible because radioactive leaks are outside the scope of the proceeding and petitioners do not provide any alleged facts or expert opinion indicating that significant deterioration in buried structures at Seabrook could impair their only function that is appropriately before us in this license renewal proceeding: i.e., to maintain pressure and to provide flow.

Friends/NEC focus their arguments on the risk of leaks, stating that NextEra’s application “fails to include a comprehensive program of leak detection and prevention” and that “a laissez-faire inspection program will be ineffective at prevention or early detection of leaks from pipes that carry radioactive water or are otherwise important for plant safety.”¹⁹¹

Friends/NEC assume that the control of leaks is the intended function of buried SSCs, but such is not the case. In Pilgrim II, the Commission pointed out that 10 C.F.R. § 54.21(a)(3) requires an applicant to demonstrate the effects of aging will be managed “so that the intended function(s) will be maintained consistent with the CLB” and that the intended functions are

¹⁸⁹ Id.

¹⁹⁰ Id.

¹⁹¹ Id. at 24-25.

described in § 54.4(a)(1)-(3).¹⁹² The Commission clarified that the key functions of buried SSCs that are the focus of the license renewal safety review under Part 54 do not include the prevention of inadvertent radioactive leaks from buried structures that Friends/NEC contend are the driving reason for requiring this AMP at Seabrook.¹⁹³

Detection, monitoring, and maintenance of leakage from these structures are part of the NRC's ongoing regulatory process to assure compliance with public dose limits.¹⁹⁴ Conversely, buried pipelines, channels, and tanks that fall under aging management provide safety-related functions by maintaining adequate flow and pressure. Because the issue raised by Friends/NEC Contention 3 (i.e., the inadvertent release of radioactivity) does not specifically relate to the ability of buried structures to perform their intended functions as defined by 10 C.F.R. § 54.4(a)(1)-(3), the contention is not within the scope of this license renewal proceeding, as required by § 2.309(f)(1)(iii).

Further, Friends/NEC fail to support their claim that there is not reasonable assurance that NextEra will manage the effects of aging on the intended function of buried SSCs.¹⁹⁵ In Pilgrim II, the Commission summarized an evaluation of site-specific conditions and reviewed the applicant's monitoring/inspection program in assessing whether it was likely that the integrity of any buried SSCs had deteriorated sufficiently to prevent it from serving its intended

¹⁹² CLI-10-14, 71 NRC at ___ (slip op. at 16) (quoting 10 C.F.R. § 54.21(a)(3)) (emphasis in original).

¹⁹³ Id. (slip op. at 15).

¹⁹⁴ Id. ("Through the regulatory process, which includes plant inspections, notice 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.").

¹⁹⁵ See 10 C.F.R. § 54.29 (requiring, for license renewal, that there be "reasonable assurance" that the applicant will manage the effects of aging on certain structures and components during extended operation).

function.¹⁹⁶ Friends/NEC's support for this contention is a verbatim repetition of general and conclusory statements from the Blanch declaration.¹⁹⁷ Neither Friends/NEC Contention 3 nor the Blanch declaration directly asserts that the intended function of any buried structures at Seabrook might fail. Instead they rely on reports of released radioactivity from other plants in the country to infer similar problems at the New Hampshire facility.¹⁹⁸ The existence of leaking pipes and tanks at other plants falls well short of providing support for alleging that the buried structures at Seabrook might not perform their intended function. By failing to provide any support that the integrity of leaking structures at Seabrook has the potential to prevent them from maintaining pressure, providing flow, or both, Friends/NEC do not present the requisite factual bases required by 10 C.F.R. § 2.309(f)(1)(v).

Friends/NEC's Contention 3 presents an issue that is not within the scope of the proceeding, as required by 10 C.F.R. § 2.309(f)(1)(iii), and is not supported by adequate factual allegations, as required by 10 C.F.R. § 2.309(f)(1)(v). For these reasons, we do not admit it.

6. Friends/NEC Contention 4

Friends/NEC 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 analysis by the Applicant is called for.¹⁹⁹

The contention contains six subparts. Because the Applicant and the NRC Staff challenge the materiality of each subpart, we first consider the general concept of materiality in connection with contentions that challenge the adequacy of the discussion of severe accident

¹⁹⁶ CLI-10-14, 71 NRC at __ (slip op. at 22-23).

¹⁹⁷ Compare Friends/NEC Petition at 23-26 with Blanch Decl. ¶¶ 41-53.

¹⁹⁸ See Friends/NEC Petition at 26-30; Blanch Decl. ¶¶ 41-53.

¹⁹⁹ Friends/NEC Petition at 33-34 (capitalization omitted).

mitigation alternatives in a renewal applicant's environmental report. We then separately address the admissibility of each subpart.

a. Materiality

As the Applicant and the NRC Staff emphasize,²⁰⁰ a SAMA analysis is mandated by NEPA considerations and thus subject to a rule of reason.²⁰¹ In discussing a SAMA contention in another proceeding, the Commission stated that it has "long stressed that NRC adjudicatory hearings are not EIS [environmental impact statement] editing sessions."²⁰² Specifically, the ultimate issue "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."²⁰³ Thus, as the Commission stated in Pilgrim I, "[u]nless 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."²⁰⁴ In order to demonstrate that their concerns raise a material dispute with an application, therefore, petitioners must provide sufficient information to show that, if their proposed refinements were incorporated, it is "genuinely plausible" that cost-benefit conclusions might change.

²⁰⁰ NextEra Answer to Friends/NEC Petition at 65; NRC Staff Answer at 56.

²⁰¹ See Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-17, 56 NRC 1, 12 (2002) (applying "rule of reason governing NEPA" to SAMA analysis).

²⁰² Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station), CLI-09-11, 69 NRC 529, 533 (2009) (citation and internal quotation marks omitted).

²⁰³ Id.

²⁰⁴ CLI-10-11, 71 NRC at ___ (slip. op. at 39).

That said, the Commission's clarification in Pilgrim I did not revise the rules for admitting contentions. Indeed, in Pilgrim I, the Licensing Board had admitted a SAMA contention,²⁰⁵ which it subsequently dismissed on summary disposition,²⁰⁶ and the Commission reversed the Board for granting summary disposition.²⁰⁷ Especially at the contention admissibility stage, appropriate latitude must be given petitioners in the methods by which they may show "genuine plausibility." Petitions need not — as both the Applicant and the NRC Staff acknowledged at oral argument²⁰⁸ — rerun the Applicant's own cost-benefit calculations.

b. Friends/NEC Contention 4A

Friends/NEC Contention 4A states:

NextEra's use of probabilistic modeling underestimated the true consequences of a severe accident.²⁰⁹

Friends/NEC Contention 4A consists of two distinct challenges. First, Friends/NEC allege that NextEra's use of probabilistic modeling underestimates the consequences of a severe accident and that, "[b]y multiplying high consequence values with low probability numbers, the consequences figures appear far less startling."²¹⁰ Second, Friends/NEC allege that "NextEra failed to model intentional acts in its analysis of external events."²¹¹ Friends/NEC Contention 4A is inadmissible as outside the scope of this proceeding.

Friends/NEC's first challenge — to the use of probability-weighted consequences — is contrary to the Commission's statement that "[w]hether a SAMA may be worthwhile to

²⁰⁵ LBP-06-23, 64 NRC 257, 341 (2006).

²⁰⁶ LBP-07-13, 66 NRC 131, 137 (2007).

²⁰⁷ CLI-10-11, 71 NRC at __ (slip op. at 26).

²⁰⁸ Tr. at 138-42.

²⁰⁹ Friends/NEC Petition at 37 (capitalization omitted).

²¹⁰ Id. at 39.

²¹¹ Id. at 40-41.

implement is based upon a cost-benefit analysis — a weighing of the cost to implement . . . with the reduction in risks to public health, occupational health, and offsite and onsite property.”²¹² Consistent with the regulations for severe accidents,²¹³ the Commission has previously noted that the very essence of severe accident mitigation analysis is to assess “to what extent the probability-weighted consequences of the analyzed severe accident sequences would decrease if a specific SAMA were implemented.”²¹⁴ Allegations against the fundamental procedure for analyzing severe accidents and resulting mitigation alternatives are outside the scope of the proceeding.

Furthermore, including probability-weighted consequences into SAMA analyses does not reduce the consequences so low as to “reject all possible mitigation as too costly”²¹⁵ — as evidenced by the results presented by the applicants in several recent cases.²¹⁶ Conversely, ignoring risk (i.e., the probability-weighted accidents) in favor of deterministic consequences that do not consider the frequency of occurrence might just as likely distort the analysis by making all mitigation appear so highly cost-effective as to be of little use in discriminating between alternatives in this NEPA decision-making process.

²¹² McGuire/Catawba, CLI-02-17, 56 NRC at 7-8 (emphasis added). “[A]s a logical proposition, . . . risk equals the likelihood of an occurrence times the severity of the consequences” Limerick Ecology Action, Inc. v. U.S. Nuclear Regulatory Com’n, 869 F.2d 719, 738 (3d Cir. 1989) (citing Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc., 462 U.S. 87, 104-05 (1983)).

²¹³ 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1.

²¹⁴ Pilgrim I, CLI-10-11, 71 NRC at __ (slip op. at 3) (emphasis added).

²¹⁵ Friends/NEC Petition at 39.

²¹⁶ Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3), LBP-10-13, 71 NRC __, __ (slip op. at 6-7) (June 30, 2010); Applicant’s Environmental Report – Operating License Renewal Stage – Pilgrim Nuclear Power Station at 4-48 to 4-51 (ADAMS Accession No. ML060830611).

As the NRC Staff points out,²¹⁷ the use of probability-weighted consequences is consistent with the long standing NEPA “rule of reason” that requires reasonable consideration of alternative mitigation measures, but does not require that any specific plan be implemented. Rather, a SAMA analysis need only assure that the environmental consequences of the project have been fairly evaluated.²¹⁸

Friends/NEC’s second challenge — to the failure of NextEra to consider intentional acts such as terrorist attacks as part of the external events analysis — is likewise outside the scope of this proceeding. In the recent Pilgrim II decision, the Commission stated that “NEPA ‘imposes no legal duty on the NRC to consider intentional malevolent acts . . . in conjunction with commercial power reactor license renewal applications.’”²¹⁹ The Commission also noted that the NRC had analyzed terrorist acts in connection with license renewal and concluded “that the core damage and radiological release from such acts would be no worse than the damage and release expected from internally initiated events.”²²⁰

We do not admit Friends/NEC Contention 4A.

c. Friends/NEC Contention 4B

Friends/NEC Contention 4B states:

The SAMA analysis for Seabrook minimizes the potential amount of radioactive release in a severe accident.²²¹

²¹⁷ NRC Staff Answer at 56-57.

²¹⁸ Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 431 (2003) (quoting Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989)).

²¹⁹ CLI-10-14, 71 NRC at __ (slip op. at 37) (quoting AmerGen Energy Co., LLC (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 129 (2007)).

²²⁰ Id. (citing Oyster Creek, CLI-07-8, 65 NRC at 131).

²²¹ Friends/NEC Petition at 41 (capitalization omitted).

Friends/NEC allege that NextEra's SAMA analysis minimizes the potential amount of radioactive release during a severe accident by not considering such events in the spent fuel pool (SFP) and by using source terms for the fission product releases that "are smaller for key radionuclides than the release fractions specified in NRC guidance . . . and its recent reevaluation for high-burnup fuel."²²²

First, Friends/NEC contend that, because severe accidents at spent fuel pools are reasonably foreseeable, NextEra must consider these severe accidents, whether resulting from human error, mechanical failure, or an act of malice.²²³ The petitioners imply that the Applicant must also consider the potential interactions between the pool and the reactor in the context of these accidents.²²⁴ Friends/NEC contend that the definition of "severe accidents" includes SFP accidents, noting that "[n]othing in Section 5 [of the GEIS] excludes severe accidents involving . . . the spent fuel pool."²²⁵

Second, Friends/NEC contend that "[t]he source terms used by NextEra to estimate the consequences of severe accidents . . . has not been validated by NRC" and that these release fractions are consistently smaller for key radionuclides than those specified in NUREG-1465.²²⁶ The petitioners allege that, because the Applicant used small values, the SAMA analysis resulted in lower consequences than would be obtained from using the source terms presented in the guidance documents.²²⁷

²²² Friends/NEC Petition at 41.

²²³ Id.

²²⁴ See id. at 42 ("NextEra did not consider the potential interactions between the pool and the reactor in the context of severe accidents at Seabrook.").

²²⁵ Id. at 44.

²²⁶ Id. (referring to L. Soffer et al., Accident Source Terms for Light-Water Nuclear Power Plants, NUREG-1465 (Feb. 1995) (ADAMS Accession No. ML041040063)).

²²⁷ Id.

Friends/NEC's Contention 4B is inadmissible as to allegations associated with spent fuel pool accidents, which are outside the scope of this proceeding and a direct challenge to NRC regulations. This contention is admissible to the limited extent that it relates to the selection of the source term release fractions.

i. SAMA Analysis of the Risks from Spent Fuel Pools (SFP)

Friends/NEC's assertion that severe accidents from SFP must be considered in NextEra's SAMA analysis is in direct conflict with NRC regulations. While a consideration of alternatives to mitigate severe accidents must be provided if not previously performed,²²⁸ NRC regulations only require an applicant to provide this analysis "for those issues identified as Category 2 issues in appendix B to subpart A" of Part 51.²²⁹ Spent fuel pool storage is a Category 1 issue,²³⁰ and thereby exempt from this analysis.

The Commission has confirmed this interpretation of its regulations in several cases. In Turkey Point, it held that license-renewal boards cannot admit environmental challenges regarding spent fuel pool issues: "Part 51's license renewal provisions cover environmental issues relating to onsite spent fuel storage generically" and "[a]ll such issues, including accident risk, fall outside the scope of license renewal proceedings."²³¹ More recently, the Commission stated in Pilgrim I that "SAMAs do not encompass spent fuel pool accidents."²³² Clearly, SFP SAMA analysis is not required by regulation, and a contention alleging such a requirement is not admissible in a license renewal proceeding.

²²⁸ 10 C.F.R. § 51.53(c)(3)(ii)(L).

²²⁹ Id. § 51.53(c)(3)(ii).

²³⁰ 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 ("On-site spent fuel").

²³¹ CLI-01-17, 54 NRC at 23.

²³² CLI-10-11, 71 NRC at __ (slip op. at 24).

Friends/NEC raise the issue of the impacts of potential interaction between the pool and the reactor on severe accidents at Seabrook, citing a report by Dr. Gordon Thompson that was prepared for site-specific conditions at Vermont Yankee and Pilgrim.²³³ However, the Commission clearly stated in Turkey Point that Part 51's reference to SAMA deals only with "nuclear reactor accidents, not spent fuel storage accidents,"²³⁴ and that "Part 51 treats all spent fuel pool accidents, whatever their cause, as generic, Category 1 events not suitable for case-by-case adjudication."²³⁵ Consistent with the rejection of the Thompson arguments by the Vermont Yankee²³⁶ and Pilgrim²³⁷ Boards, we conclude that any consideration of SFP in a SAMA analysis is preempted by regulation.

Finally, Friends/NEC argue that Section 6 of the GEIS (which discusses the Category 1 finding for onsite spent fuel storage) applies only to normal operations and that Section 5 of the GEIS (discussing severe accidents) is silent on the exclusion of SFP from severe accident analysis.²³⁸ The Commission recently rejected this very argument in Pilgrim II, however, where it clarified that "[c]hapter six clearly is not limited to discussing only 'normal operations,' but also discusses potential accidents and other non-routine events," and that "[t]he Category 1 finding

²³³ Friends/NEC Petition at 42 (citing Gordon R. Thompson, Institute for Resource and Security Studies, Risks and Risk-Reducing Options Associated with Pool Storage of Spent Nuclear Fuel at Pilgrim and Vermont Yankee Nuclear Power Plants at 12, 16 (2006) (ADAMS Accession No. ML061630088)).

²³⁴ CLI-01-17, 54 NRC at 21 (emphasis in original).

²³⁵ Id. at 22 (citation omitted).

²³⁶ Entergy Nuclear Vermont Yankee, LLC (Vermont Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131, 152-155 (2006) (ruling that contention regarding severe spent fuel pool accidents is not admissible in license renewal proceeding because it is a Category 1 issue), rev'd on other grounds, CLI-07-16, 65 NRC 371, 375 (2007).

²³⁷ LBP-06-23, 64 NRC at 288 ("[T]hese arguments fail because of Commission precedent interpreting the term, 'severe accidents,' to encompass only reactor accidents and not spent fuel pool accidents . . .").

²³⁸ Friends/NEC Petition at 42-44 (citing GEIS §§ 5.2.1, 6.1).

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.'"²³⁹

ii. Source Terms Used in NextEra SAMA Analysis

Friends/NEC allege that the source terms used by NextEra in its SAMA analysis, as generated by the Modular Accident Analysis Progression code (MAAP code), "appears to lead to anomalously low consequences when compared to source terms generated by NRC Staff," and that "NRC has been aware of this discrepancy for at least two decades."²⁴⁰ Friends/NEC posit that the source terms NextEra used are consistently smaller for key radionuclides than the release fractions specified in NUREG-1465.²⁴¹

NextEra argues that the petitioners provide "no fact or expert opinion in support of this contention, as required by 10 C.F.R. § 2.309(f)(1)(v), only their own unsupported speculation."²⁴² NextEra asserts that, "[w]ithout expert opinion or a similar plant-specific SAMA analysis, Petitioners cannot show that their claims, as applied to Seabrook, are based upon anything other than their own uninformed speculation."²⁴³ The NRC Staff concludes otherwise, stating that "F[riends]/NEC ha[ve] provided some support for the argument that MAAP may lead to lower consequences when compared to source terms generated by NRC Staff."²⁴⁴

Friends/NEC support the source term basis of Contention 4B by citing a published draft of NUREG-1150 in which the NRC observed, in the context of the Zion Nuclear Power Plant,

²³⁹ CLI-10-14, 71 NRC at __ (slip op. at 34).

²⁴⁰ Friends/NEC Petition at 45 (citing Office of Nuclear Regulatory Research, Draft for Comment, Reactor Risk Reference Document, NUREG-1150, Vol. 1, at 5-14 (Feb. 1987) (ADAMS Accession No. ML063540601) [hereinafter Draft for Comment, NUREG-1150, Vol. 1]).

²⁴¹ Id. at 44 (citing ER at F-32, F-45 to F-48).

²⁴² NextEra Answer to Friends/NEC Petition at 75.

²⁴³ Id. at 76.

²⁴⁴ NRC Staff Answer at 62.

that “comparisons made between the Source Term Code Package results and MAAP results indicate that the MAAP estimates for environmental release fractions were significantly smaller.”²⁴⁵ Friends/NEC also cite a Brookhaven National Laboratory study that determined that dose results reported by the applicant for license renewal at the Catawba and McGuire Plants were less by a factor of 3 to 4 than those calculated consistent with NUREG-1150.²⁴⁶ The NRC Staff recognizes that these studies indicate that applicants’ use of source terms generated by the MAAP code at these plants resulted in “lower consequences when compared to the source terms in NUREG-1465.”²⁴⁷ The alleged facts Friends/NEC proffer here meet the requirements of 10 C.F.R. 2.309(f)(1)(v).²⁴⁸

The NRC Staff nevertheless opposes admission, arguing that Friends/NEC “ha[ve] not demonstrated that the use of MAAP is unreasonable or inappropriate in this case” and disputing the relevance of NUREG-1465 on technical grounds.²⁴⁹ Both NextEra and the NRC Staff point out that the same arguments Friends/NEC present here were rejected by the Indian Point licensing board for a variety of technical reasons.²⁵⁰ Again, the Applicant and the NRC Staff

²⁴⁵ Friends/NEC Petition at 45 (quoting Draft for Comment, NUREG-1150, Vol. 1, at 5-14) (capitalization altered by Friends/NEC Petition).

²⁴⁶ Id. at 44-45 (citing John R. Lehner, et al., Brookhaven National Laboratory, Benefit Cost Analysis of Enhancing Combustible Gas Control Availability at Ice Condenser and Mark III Containment Plants at 17 (Dec. 2002) (ADAMS ML031700011)).

²⁴⁷ NRC Staff Answer at 62-63.

²⁴⁸ NextEra points out that many of Friends/NEC’s arguments were copied from an expert report prepared for site specific conditions in a license renewal proceeding at another plant. NextEra Answer to Friends/NEC Petition at 75-76. However, the possibility that Friends/NEC may have used another expert report as the template for this contention does not negate the support provided by NUREG-1150 and the Brookhaven study.

²⁴⁹ NRC Staff Answer at 63.

²⁵⁰ NextEra Answer to Friends/NEC Petition at 76-77 (discussing Indian Point, LBP-08-13, 68 NRC at 185); NRC Staff Answer at 64 (quoting Indian Point, LBP-08-13, 68 NRC at 187).

confuse the merits with the “minimal” factual showing necessary to admit a contention. Their technical responses to the petitioners’ position require further exploration.

Moreover, to proffer an admissible contention, Friends/NEC need not perform their own plant-specific SAMA. As discussed above, petitioners do not have to re-run the entire SAMA analysis to show that there might be a material difference in the outcome when using the suggested changes in the source terms advocated by Friends/NEC. The alleged fact that the source terms provided by MAAP are lower than those produced by the methodology used in NRC studies (resulting in consequence values that are lower by a factor of 3 and 4 according to the Brookhaven study) raises sufficient question concerning whether the calculated consequences and resulting cost-benefit analyses at Seabrook are adequate for rendering decisions on potential mitigation alternatives.

iii. Summary of Ruling on Contention 4B

We do not admit those aspects of Friends/NEC Contention 4B concerning spent fuel pools because they constitute a direct challenge to NRC regulations and are not within the scope of the proceeding as required by 10 C.F.R. § 2.309(f)(1)(iii). We admit the portion of this contention dealing with the adequacy of the source terms that are generated by the MAAP code and used by NextEra to calculate the consequences in the Applicant’s SAMA analysis.

d. Friends/NEC Contention 4C

Friends/NEC Contention 4C states:

The SAMA Analysis for Seabrook uses an outdated and inaccurate proxy to perform its SAMA analysis, the MACCS2 computer program.²⁵¹

Contrary to 10 C.F.R. § 2.309(f)(1)(v) and (vi), with one exception petitioners do not raise any specific challenge to the Applicant’s SAMA analysis in Friends/NEC Contention 4C. Rather, petitioners make general and insufficiently supported assertions concerning the

²⁵¹ Friends/NEC Petition at 46 (capitalization omitted).

MACCS2 code that the Applicant employed in conducting its analysis. Petitioners' specific claim that the model was not subjected to quality assurance requirements is deficient on its face, as a SAMA analysis is not subject to such requirements.²⁵²

We do not admit Friends/NEC Contention 4C. As discussed below, however, certain allegations concerning the alleged consequences of using the MACCS2 code are adequately set forth in Friends/NEC Contentions 4D and in the admissible portions of 4E.

e. Friends/NEC Contention 4D

Friends/NEC Contention 4D states:

Use of 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.²⁵³

Friends/NEC allege that NextEra used an atmospheric dispersion model, ATMOS, that is not appropriate for determining the geographic concentration of radionuclides released in a severe accident at Seabrook.²⁵⁴ Specifically, Friends/NEC argue that the use of the steady-state, straight-line Gaussian plume modeled by ATMOS is not adequate to represent Seabrook's complex coastal site, thereby underestimating "the area likely to be affected in a severe accident and the dose likely to be received in those areas."²⁵⁵

According to Friends/NEC, the Applicant's use of the ATMOS model to predict radionuclide dispersion is unacceptable because the Gaussian dispersion model assumes that a released radioactive plume travels in a steady-state straight line (analogous to a beam from a

²⁵² See 10 C.F.R. Part 50, Appendix B (requiring quality assurance description in safety analysis report, but not addressing SAMA analysis).

²⁵³ Friends/NEC Petition at 47 (capitalization omitted).

²⁵⁴ Id. at 47-48.

²⁵⁵ Id. at 47.

flashlight).²⁵⁶ The use of the ATMOS model (which is incorporated into the MACCS2 code) to accurately predict impacts to the large population in a 50-mile radius of the plant is allegedly inappropriate given the recognized limitations of the model beyond a ten to fifteen mile radius.²⁵⁷ Petitioners point out that the Environmental Protection Agency (EPA) no longer approves of the use of one-dimensional models for air dispersion analyses beyond a 32-mile radius,²⁵⁸ and discuss other codes (e.g., AERMOD and CALPUFF) that do not have the modeling limitations of ATMOS.²⁵⁹ Citing several meteorological research studies at coastal sites,²⁶⁰ Friends/NEC assert that NextEra used inappropriate meteorological inputs that are steady in time and are spatially uniform across the study region.²⁶¹ Petitioners contend that, as a result, actual doses will be more concentrated than those modeled and will extend over a larger area due to effects of variable winds, sea breezes, plume behavior over water, and terrain.²⁶² Furthermore, petitioners assert, “[a]nother significant defect in Applicant’s model is that its meteorological inputs . . . are based on data collected by Applicant at a single, on-site anemometer for a single year, 2005.”²⁶³

Friends/NEC Contention 4D is admissible. To satisfy the requirement of 10 C.F.R. § 2.309(f)(1)(i) through (iv), Friends/NEC provide a specific statement of the contention and question the accuracy of the SAMA results given the geographic location and variable

²⁵⁶ Id. at 48.

²⁵⁷ Id. at 52.

²⁵⁸ Id. at 48.

²⁵⁹ Id. at 47, 51-52, 57-58.

²⁶⁰ Id. at 47, 47 n.21.

²⁶¹ Id. at 48.

²⁶² Id. at 48-53.

²⁶³ Id. at 53.

meteorological conditions at the site and the large population base surrounding the plant.²⁶⁴

The statement of facts presented by Friends/NEC, backed by references to the Applicant's ER and supporting documents, demonstrates that the petitioners have raised a genuine dispute of a material issue in accordance with 10 C.F.R. § 2.309(f)(1)(v) and (vi).

Both NextEra and the NRC Staff assert that the contention should not be admitted.²⁶⁵ They maintain that Friends/NEC have not demonstrated this contention concerns a material issue. NextEra contends that the "Petitioners have provided sufficient information to show that the sea breeze is a real phenomenon, but have provided no evidence, no allegations of fact or expert opinion, as to the effect that a sea breeze would have on the cost-benefit conclusions in NextEra's SAMA analysis."²⁶⁶ NextEra argues that the documents Friends/NEC offer in support of their claim that plume behavior over water leads to radioactive hot spots does not show "that it is genuinely plausible that modif[ication] . . . would result in a change to NextEra's cost-benefit model."²⁶⁷ NextEra argues that Friends/NEC have not shown materiality because they have not shown, through "expert or [other] review of NextEra's SAMA analysis," that using a different air dispersion model might change the cost-benefit conclusions in the Application.²⁶⁸ The NRC Staff similarly argues that the contention is not material (even though it admits that Friends/NEC provide an adequate factual basis for their claim that the SAMA analysis is inadequate because it does not adequately account for sea breeze, behavior of plumes over water, or terrain

²⁶⁴ See id. at 47.

²⁶⁵ NextEra Answer to Friends/NEC Petition at 79; NRC Staff Answer at 68.

²⁶⁶ NextEra Answer to Friends/NEC Petition at 79-80.

²⁶⁷ Id. at 84-85 (emphasis in original) (footnote omitted).

²⁶⁸ See id. at 80.

impacts) because petitioners have “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.”²⁶⁹

We disagree. Friends/NEC provide sufficient information to indicate that it is more than plausible that the use of an alternative model has the potential to change the cost-benefit conclusions for the SAMA candidates evaluated by NextEra. The petitioners are not required to redo the SAMA analyses in order to raise a material issue. To require a petitioner to perform such a re-analysis is an undue burden, especially when dealing with an admittedly very complex model like the MACCS2 code.²⁷⁰ Friends/NEC sufficiently support their allegation that use of the ATMOS model might significantly distort the Seabrook SAMA analysis.

In response to the suggestion that NextEra should have considered use of alternative models like AERMOD or CALPUFF,²⁷¹ NextEra points out that the Commission has verified that NEPA allows agencies “to select their own methodology as long as that methodology is reasonable.”²⁷² Once challenged by an adequately supported contention, however, an applicant must defend its choice.²⁷³ The NRC Staff concedes that Friends/NEC have adequately supported their claim that “features of the Seabrook site . . . could impact the ATMOS model [in ways] that the ER has not accounted for, such as the sea breeze effect, the varied terrain at

²⁶⁹ NRC Staff Answer at 68.

²⁷⁰ As NextEra aptly stated at oral argument: “The SAMA analysis is a very complicated beast.” Tr. at 137.

²⁷¹ Friends/NEC Petition at 47.

²⁷² NextEra Answer to Friends/NEC Petition at 81 (quoting Pilgrim I, CLI-10-11, 71 NRC at ___ (slip op. at 37)).

²⁷³ See Pilgrim I, CLI-10-11, 71 NRC at ___ (slip op. at 17) (stating that the Gaussian plume model’s incorporation in the MACCS2 code and the wide, customary use of the code “are not a sufficient ground to exclude the code’s integral dispersion model from all challenge if adequate support is provided for a contention”).

Seabrook and the possibility of hot spots.”²⁷⁴ Friends/NEC have raised plausible limitations of air dispersion modeling at the site. It is now the Applicant’s burden to defend its use of ATMOS against the evidence and testimony submitted by Friends/NEC in further adjudicatory proceedings.

NextEra claims that the “Petitioners assert that NextEra should simply replace the ATMOS module in MACCS2 with AERMOD or CALPUFF,” and that the Commission has noted “it is not possible simply to “plug in” and run a different atmospheric dispersion model in the MACCS2 code.”²⁷⁵ Friends/NEC do not suggest that the MACCS2 code should be modified but only that alternative air dispersion models without ATMOS’s flaws exist.²⁷⁶ There is no regulatory requirement that applicants use MACCS2 for their SAMA analyses. If it can be shown that the one-dimensional constraints of the ATMOS model are inappropriate for a site and that it is truly impossible to replace ATMOS within the MACCS2 code, then it is incumbent upon the Applicant to seek other options besides MACCS2 to perform the remaining cost-benefit analysis rather than relying on a deficient ATMOS code just because it is embedded within the familiar MACCS2 model.

The NRC Staff argues that “to the extent F[riends]/NEC ha[ve] alleged that the use of the ATMOS model is categorically inapplicable to the Seabrook site, F[riends]/NEC has not adequately supported [their] claim.”²⁷⁷ However, Friends/NEC support their claim that ATMOS is inappropriate for Seabrook, quoting the MACCS2 User Guide: “The atmospheric model

²⁷⁴ NRC Staff Answer at 68.

²⁷⁵ NextEra Answer to Friends/NEC Petition at 82 (quoting Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station), CLI-10-22, 72 NRC __, __ (slip op. at 9) (Aug. 27, 2010) (emphasis by NextEra omitted)).

²⁷⁶ See Friends/NEC Petition at 52.

²⁷⁷ NRC Staff Answer at 68.

included in the code does not model the impact of terrain effects on atmospheric dispersion.”²⁷⁸

Moreover, Friends/NEC’s criticisms of the Gaussian model all apply to the ATMOS model because ATMOS is a steady-state straight line Gaussian model.

NextEra and the NRC Staff say that Friends/NEC do not provide factual or expert support for their claim that reliance on only one meteorological measurement point makes NextEra’s SAMA analysis deficient.²⁷⁹ It seems self-evident, however, that the use of only one data point might have some potential to affect the accuracy of the final result, which, in turn, might affect the resulting cost-benefit values calculated by the model. Whether this is true is a merits issue to be addressed in further adjudicatory proceedings.

The NRC Staff notes that the Lawrence Livermore study Friends/NEC cite in support of their arguments relating to complex terrain²⁸⁰ was “specifically undertaken by the NRC to address concerns regarding the use of the Gaussian plume in the MACCS2 code.”²⁸¹ The Staff asserts that, because this report also concluded that the MACCS2 code with the ATMOS model is accurate at distances up to 200 miles,²⁸² Friends/NEC’s “evidence does not indicate that the ATMOS model is inaccurate at distances over 31 miles”²⁸³ but that “the ATMOS model may be

²⁷⁸ Friends/NEC Petition at 51 (quoting D. Chanin & M.L. Young, Code Manual for MACCS2 User’s Guide, NUREG/CR-6613, Vol. 1, at 7-10 (May 1998) (ADAMS Accession No. ML063550020)).

²⁷⁹ NextEra Answer to Friends/NEC Petition at 88-89; NRC Staff Answer at 76.

²⁸⁰ Friends/NEC Petition at 54 (citing C. R. Molenkamp, et al., Lawrence Livermore National Laboratory, Comparison of Average Transport and Dispersion Among a Gaussian, a Two-Dimensional and a Three-Dimensional Model, NUREG/CR-6853 (Oct. 2004) (ADAMS Accession No. ML043240034) [hereinafter NUREG/CR-6853]).

²⁸¹ NRC Staff Answer at 70 (citing NUREG/CR-6853, at xi, 41).

²⁸² Id. (citing NUREG/CR-6853, at 72).

²⁸³ Id. at 70-71.

used at much greater distances for SAMA analyses.”²⁸⁴ In a footnote, the NRC Staff acknowledges that Friends/NEC assert that a June 2004 MACCS2 guidance report recognizes that the “code should be applied with caution at distances greater than ten to fifteen miles.”²⁸⁵ Similarly, NextEra responds to Friends/NEC’s terrain allegation with technical arguments and admonishes the petitioners for not addressing sensitivity analyses NextEra performed.²⁸⁶ Although proffering reasonable counter arguments, NextEra’s and the NRC Staff’s detailed discussion of the technical issues raised by Friends/NEC supports petitioners’ position that they have raised genuine disputes as to material facts that are appropriately addressed in an adjudicatory hearing. The discrepancy between the positions advanced by Friends/NEC, NextEra and the NRC Staff will be addressed in further proceedings.

In summary, Friends/NEC present and support numerous material factual issues relating to the appropriateness of NextEra’s use of the one-dimensional, air dispersion model ATMOS at Seabrook — an allegedly complex geographic and meteorological site. NextEra and the NRC Staff raise counter arguments, but the difference between these positions is merits-based and properly addressed in further adjudicatory proceedings.

We admit Friends/NEC Contention 4D.

f. Friends/NEC Contention 4E

Friends/NEC Contention 4E states:

Use of 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.²⁸⁷

²⁸⁴ Id. at 71.

²⁸⁵ Id. at 70 n.91 (citing Friends/NEC Petition at 52).

²⁸⁶ NextEra Answer to Friends/NEC Petition at 87-88.

²⁸⁷ Friends/NEC Petition at 61 (capitalization omitted).

Friends/NEC Contention 4E consists of three challenges related to the costs of a potential severe accident. First, Friends/NEC allege that because it “uses the outdated and inaccurate MACCS2 code to calculate decontamination and clean up costs,”²⁸⁸ NextEra employs an inapplicable particle size, ignores the difficulty of cleanup in an urban area, and does not consider the effects of radiological waste disposal.²⁸⁹ Further, they allege, the “cost formula used in the MACCS2 underestimates costs likely to be incurred as a result of a dispersion of radiation.”²⁹⁰ Second, Friends/NEC allege that “[t]he current ER assigns a value of \$2000 per person[-]rem”²⁹¹ and that using this value “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.”²⁹² Third, Friends/NEC allege that a number of other economic costs, such as job training and unemployment payments, “were underestimated or totally ignored by the applicant that when added together would in all likelihood add up collectively to a significant amount.”²⁹³

Friends/NEC Contention 4E is admissible as to allegations associated with the decontamination and clean up costs of severe accidents associated with particle size and remediation difficulty in urban areas, but is not admissible with regard to waste disposal. This contention also is inadmissible as to the other two cost-related allegations: that is, underestimating health costs using the \$2,000 per person-rem factor and excluding other economic costs such as job retraining and unemployment payments.

²⁸⁸ Id. at 62.

²⁸⁹ Id. at 62-64.

²⁹⁰ Id. at 62.

²⁹¹ Id. at 68.

²⁹² Id.

²⁹³ Id. at 73 (emphasis omitted).

i. Decontamination and Clean Up Costs

Friends/NEC allege that the decontamination and clean up costs NextEra calculated in its SAMA analysis are underestimated by the MACCS2 code.²⁹⁴ NextEra and the NRC Staff both oppose admitting this portion of Friends/NEC Contention 4E.²⁹⁵

Noting that the MACCS2 User's Guide indicates that the decontamination processes are based on the WASH-1400 economic cost model,²⁹⁶ Friends/NEC cite a Sandia study that allegedly "recognized that earlier estimates (such as incorporated in WASH-1400 and up through and including MACCS2) of decontamination costs are incorrect because they examined fallout from nuclear weapons explosions that produce large particle sizes and high mass loadings."²⁹⁷ Friends/NEC assert that, because reactor accident radionuclide particles are smaller than nuclear explosion particles, reactor accident releases are more difficult to decontaminate and clean up, presumably resulting in higher costs.²⁹⁸

Friends/NEC also allege that NextEra did not consider that urban areas are "more expensive and time consuming to decontaminate and clean than rural areas" and did not account for the differences in the EPA and NRC cleanup standards on the ultimate cost of the

²⁹⁴ Id. at 62.

²⁹⁵ NextEra Answer to Friends/NEC Petition at 100; NRC Staff Answer at 77.

²⁹⁶ Friends/NEC Petition at 62 (citing D. Chanin & M.L. Young, Code Manual for MACCS2 User's Guide, NUREG/CR-6613, Vol. 1, at 7-10 (May 1998) (ADAMS Accession No. ML063550020)).

²⁹⁷ Id. at 66 (citing David I. Chanin & Walter B. Murfin, Site Restoration: Estimation of Attributable Costs from Plutonium-Dispersal Accidents (May 1996) available at <http://chaninconsulting.com/downloads/sand96-0957.pdf>). NextEra contends that Friends/NEC should have explained how the Sandia study, which addresses plutonium dispersal accidents, is relevant to reactor accidents. NextEra Answer to Friends/NEC Petition at 89-91. NextEra's technical objection to the relevance of supporting documents Friends/NEC proffer is a merits issue appropriately addressed at hearing.

²⁹⁸ Friends/NEC Petition at 62-63.

clean up.²⁹⁹ Friends/NEC provides support for these allegations by citing a study by Pacific Northwest National Laboratory that indicated a significant difference in costs depending on the population density and cleanup standard.³⁰⁰ We agree with the NRC Staff's conclusion that Friends/NEC have "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."³⁰¹

The NRC Staff contends, however, that Friends/NEC have not provided sufficient information to demonstrate that the cost impact of the smaller particle size or other considerations raises a material issue.³⁰² NextEra likewise contends that Friends/NEC "fall far short" of showing "it looks genuinely plausible" that including proffered information may change the outcome of the SAMA analysis.³⁰³ We disagree. Petitioners dispute sufficiently important assumptions in the calculation of severe accident decontamination and cleanup costs to make it plausible that another SAMA candidate might be cost-effective.

Insofar as Friends/NEC contend that NextEra's SAMA analysis improperly "ignored . . . radioactive waste disposal,"³⁰⁴ their claim is outside the scope of this 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. Table B-1 codifies the Commission's determination, supported by the GEIS, that all uranium fuel cycle and waste management

²⁹⁹ Id. at 64-65.

³⁰⁰ Id. at 64-65 (citing Friends/NEC Petition, Attach. C, Barbara Reichmuth, et al., Economic Consequences of a Rad/Nuc Attack: Cleanup Standards Significantly Affect Costs, at 6 tbl.1, 12 (April 2005)).

³⁰¹ NRC Staff Answer at 80.

³⁰² Id. at 78.

³⁰³ NextEra Answer to Friends/NEC Petition at 91 (quoting Pilgrim I, CLI-10-11, 71 NRC at ___ (slip op. at 39) (emphasis added by NextEra)).

³⁰⁴ Friends/NEC Petition at 63.

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.³⁰⁵ Thus, NextEra can incorporate the GEIS's analysis into its ER and not offer any additional analysis on these issues.³⁰⁶

ii. Health Costs

Friends/NEC claim that NextEra “underestimates the population-dose related costs of a severe accident by relying inappropriately on a \$2000/person-rem conversion factor.”³⁰⁷

Friends/NEC asserts that this conversion factor is inappropriate because it “does not take into account the significant loss of life associated with early fatalities from acute radiation exposure”³⁰⁸ and “underestimates the generation of stochastic health effects by failing to take into account the fact that some members of the public exposed to radiation after a severe accident will receive doses above the threshold level for application of a dose- and dose-rate reduction effectiveness factor (DDREF).”³⁰⁹ Friends/NEC also claim “that the Applicant’s evacuation time input data into the 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 will evacuate in a timely manner, increasing health-related costs.”³¹⁰

Friends/NEC do not cite any alleged facts or expert opinion indicating error in the \$2000/person-rem conversion factor, in the use of a single DDREF, or in the evacuation times

³⁰⁵ 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1.

³⁰⁶ See Turkey Point, CLI-01-17, 54 NRC at 11 (“[L]icense renewal applicants need not submit in their site-specific Environmental Reports an analysis of Category 1 issues.”).

³⁰⁷ Friends/NEC Petition at 68.

³⁰⁸ Id.

³⁰⁹ Id. at 68-69.

³¹⁰ Id. at 72.

or assumptions. Instead, Friends/NEC cite a study allegedly estimating the total number of cancer deaths in a severe accident at Seabrook and suggest that “[a] better way to evaluate the cost equivalent of the health consequences resulting from a severe accident is simply to sum the total number of . . . fatalities . . . and multiply by . . . \$3 million,”³¹¹ an estimate of the value of a statistical life.³¹² This argument is a recasting of the petitioners’ challenge to the use of probability-weighted consequences in Friends/NEC Contention 4A, which, as discussed previously, is outside the scope of this proceeding.

iii. Other Costs

Friends/NEC assert that “NextEra did not appear to include in their economic cost estimates the business value of property and the incurred costs such as costs required from job retraining, unemployment payments, and inevitable litigation.”³¹³

This aspect of Friends/NEC Contention 4E is not admissible because petitioners have presented no facts or expert opinion concerning such costs that show it to be plausible that including them might affect the outcome of the SAMA analysis.

In summary, we admit Friends/NEC Contention 4E only in regard to the effects of particle size and difficulties with urban cleanup on decontamination costs.

g. Friends/NEC Contention 4F

Friends/NEC Contention 4F states:

Use of inappropriate statistical analysis of the data specifically the Applicant chose to follow NRC practice, not NRC regulation, regarding SAMA analyses by using mean consequence values instead of, for example, 95 percentile values.³¹⁴

³¹¹ Id. at 71 (citing Sandia National Laboratory, Calculation of Reactor Accident Consequences, U.S. Nuclear Power Plants (CRAC-2) (1982)).

³¹² Id. at 69.

³¹³ Id. at 73.

³¹⁴ Id. at 74 (capitalization omitted).

Friends/NEC criticize NextEra for failing to consider that using only mean values of meteorological data results in uncertainties in the calculation of population dose and offsite economic cost.³¹⁵ Friends/NEC contend that “Seabrook’s SAMA cost-benefit evaluation should be based on the 95th percentile of the meteorological distribution to be consistent with the approach taken in the License Renewal GEIS, which refers repeatedly to the 95th percentile of the risk uncertainty distribution as an appropriate ‘upper confidence bound’ in order not to ‘underestimate potential future environmental impacts.’”³¹⁶ The Commission has specifically rejected this argument, however, explaining that “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).”³¹⁷

We do not admit Friends/NEC Contention 4F because the Commission has ruled that the claim petitioners make is not material and does not satisfy 10 C.F.R. § 2.309(f)(1)(iv).

7. Additional Claims

At the conclusion of their petition, the Friends/NEC petitioners request that, in considering their proffered contentions, the Commission “also consider the interplay between current design basis (CLB) and aging management through the period of extended operation.”³¹⁸

Friends/NEC’s claims in this regard have not been proffered as contentions that purport to satisfy the requirements of 10 C.F.R. § 2.309(f)(1), and the Board will not consider them.

³¹⁵ Id.

³¹⁶ Id. at 75-76 (quoting GEIS § 5.3.3.2.1).

³¹⁷ Pilgrim I, CLI 10-11, 71 NRC __ (slip op. at 39).

³¹⁸ Friends/NEC Petition at 77.

E. Ruling on Petitions

As set forth above, Beyond Nuclear, the Seacoast Anti-Pollution League, the New Hampshire Sierra Club, Friends of the Coast, and the New England Coalition have each proffered at least one admissible contention meeting the requirements of 10 C.F.R. § 2.309(f) and have demonstrated standing in accordance with 10 C.F.R. § 2.309(d). Therefore, in accordance with 10 C.F.R. § 2.309(a), the Board grants the requests for hearing and petitions for leave to intervene and admits the five named organizations as parties to this proceeding.

F. Hearing Procedure

Upon admission of a contention the Board must identify the specific hearing procedures to be used.³¹⁹ Section 2.310(d) of 10 C.F.R provides that, in license renewal proceedings and other reactor licensing matters, the relatively formal procedures provided in Subpart G of 10 C.F.R. Part 2 govern if a contention “necessitates resolution of issues of material fact relating to the occurrence of a past activity, where the credibility of an eyewitness may reasonably be expected to be at issue, and/or issues of motive or intent of the party or eyewitness material to the resolution of the contested matter.”³²⁰

A petitioner requesting Subpart G based on Section 2.310(d) must demonstrate “by reference to the contention and the bases provided and the specific procedures in [S]ubpart G” that resolving the contention will require “resolution of material issues of fact which may be best determined through the use of the identified procedures.”³²¹ Unless the Board determines that Section 2.310(d) or other relevant regulations require otherwise,³²² a license renewal

³¹⁹ 10 C.F.R. § 2.310(a).

³²⁰ Id. § 2.310(d).

³²¹ Id. § 2.309(g).

³²² See, e.g., id. § 2.310(b)-(c) (providing that unless the parties agree otherwise, enforcement matters and licensing of uranium enrichment facility construction and operation must be conducted under Subpart G).

proceeding may be conducted under the relatively informal procedures of subpart L of 10 C.F.R. Part 2.³²³

Friends/NEC and the Beyond Nuclear petitioners do not address the selection of hearing procedures in their petitions or replies. NextEra argues that Subpart L procedures should be used because the petitioners did not demonstrate that the facts at issue in this case would best be resolved through the more formal Subpart G procedures.³²⁴ The NRC Staff does not address the issue.

In the absence of any assertion that Subpart G procedures should be used to resolve any of the admitted contentions, the Subpart L hearing procedures will be used to adjudicate each admitted contention.

III. ORDER

For the foregoing reasons:

- A. Friends/NEC's request to extend the filing period for petitions is granted.
- B. Friends/NEC's unopposed request to extend the filing period for replies is granted.
- C. The petitions to intervene and requests for hearing of the Beyond Nuclear petitioners and Friends/NEC are granted.
- D. As limited by the Board's foregoing discussion, the Beyond Nuclear Contention, Friends/NEC Contention 1, Friends/NEC Contention 2, Friends/NEC Contention 4B, Friends/NEC Contention 4D, and Friends/NEC Contention 4E are admitted.
- E. Friends/NEC Contention 3, Friends/NEC Contention 4A, Friends/NEC Contention 4C, and Friends/NEC Contention 4F are not admitted.

³²³ Id. § 2.310(a).

³²⁴ NextEra Answer to Beyond Nuclear Petition at 36; NextEra Answer to Friends/NEC Petition at 105.

F. Because the Board declines to consider the revised declaration of Paul Blanch and other materials submitted by Friends/NEC on December 6, 2010, Friends/NEC's motion for leave to reply is denied as moot.

G. The admitted contentions will be adjudicated under the procedures set forth at 10 C.F.R. Part 2, Subpart L.

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

It is so ORDERED.

THE ATOMIC SAFETY
AND LICENSING BOARD

_____/RA/_____
Paul S. Ryerson, Chairman
ADMINISTRATIVE JUDGE

_____/RA/_____
Dr. Michael F. Kennedy
ADMINISTRATIVE JUDGE

_____/RA/_____
Dr. Richard E. Wardwell
ADMINISTRATIVE JUDGE

Rockville, Maryland
February 15, 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
NEXTERA ENERGY SEABROOK, LLC) DOCKET NO. 50-443-LR
(Seabrook Station, Unit 1))
)
(License Renewal))

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Board **MEMORANDUM AND ORDER (Ruling on Petitions for Intervention and Requests for Hearing) (LBP-11-02)**, dated February 15, 2011, have been served upon the following persons by Electronic Information Exchange.

U.S. Nuclear Regulatory Commission
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NEXTERA ENERGY SEABROOK, LLC (Seabrook Station Unit 1) – Docket No. 50-443-LR
**MEMORANDUM AND ORDER (Ruling on Petitions for Intervention and
Requests for Hearing) (LBP-11-02)**

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[Original signed by Linda D. Lewis]
Office of the Secretary of the Commission

Dated at Rockville, Maryland
this 15th day of February 2011