

July 15, 2013

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
NEXTERA ENERGY SEABROOK, LLC)	Docket No. 50-443-LR
)	
(Seabrook Station, Unit 1))	
)	

NRC STAFF'S ANSWER TO NEXTERA'S MOTION FOR SUMMARY DISPOSITION OF
FRIENDS OF THE COAST/NEW ENGLAND COALITION
CONTENTION 4B (SAMA ANALYSIS SOURCE TERMS)¹

INTRODUCTION

Pursuant to 10 C.F.R. § 2.1205(b), and the Atomic Safety and Licensing Board's ("Board") Orders,² the staff of Nuclear Regulatory Commission ("Staff") hereby files its answer in support of "NextEra's Motion For Summary Disposition Of Friends Of The Coast/New England Coalition Contention 4B (SAMA Analysis Source Terms³)" ("NextEra's Motion")⁴ regarding

¹ Simultaneously with this filing, the Staff is also filing its response to NextEra's Motion for Summary Disposition of Friends of the Coast/New England Coalition Contention 4D (SAMA Analysis Atmospheric Modeling). In an effort to limit potential confusion between the two filings, the Staff has labeled attachments related to this filing as "Att. 4B-X," where "X" designates the specified attachment. Similarly, the Staff has designated the attachments related to Contention 4D as "Att. 4D-X."

² See Initial Scheduling Order (Apr. 4, 2011) (Agencywide Documents Access and Management System ("ADAMS") Accession No. ML110940336) ("ISO"); Memorandum and Order (Granting NRC Staff's Motion for Extension of Time (May 21, 2013) (ADAMS Accession No. ML13141A247).

³ A source term describes the physical, chemical, and radiological composition of an atmospheric release. The information in the source term description includes the quantity of each important radionuclide released into the atmosphere, the initial time of the release relative to the start of the accident, the duration of the release, the elevation of the release, the buoyancy of the plume released, and the particle size of the released material.

⁴ See NextEra's Motion For Summary Disposition Of Friends Of The Coast/New England Coalition Contention 4B (SAMA Analysis Source Terms) (May 10, 2013).

NextEra's license renewal application ("LRA") for Seabrook Station, Unit 1 ("Seabrook").⁵ As more fully set forth below, NextEra has demonstrated that there is no genuine issue as to any material fact with respect to Contention 4B and that it is entitled to judgment as a matter of law. Accordingly, NextEra's Motion should be granted and Contention 4B should be dismissed.

BACKGROUND

A. Procedural History

This proceeding concerns the May 25, 2010 application of NextEra to renew its operating license for Seabrook for an additional 20 years from the current expiration date of March 15, 2030.⁶ On October 20, 2010, Friends/NEC and Beyond Nuclear filed separate petitions to intervene.⁷ On November 15, 2010, NextEra and the Staff filed answers opposing the petitions to intervene.⁸ On February 15, 2011, the Board determined that Friends/NEC has standing, found that Friends/NEC raised at least one admissible contention, and admitted Friends/NEC as a party to this proceeding.⁹ On March 8, 2012, the Commission affirmed in part, and reversed in part, the Board's decision.¹⁰ Specifically, the Commission held that the Board erred in admitting Beyond Nuclear's contention challenging the adequacy of the

⁵ Letter from Paul O. Freeman, Site Vice President, dated May 25, 2010, transmitting application for license renewal for Seabrook Station, Unit 1 (ADAMS Accession No. ML101590099).

⁶ Letter from Paul O. Freeman, Site Vice President, dated May 25, 2010, transmitting application for license renewal for Seabrook Station, Unit 1 (ADAMS Accession No. ML101590099) ("LRA").

⁷ See Friends of the Coast and New England Coalition Petition for Leave to Intervene, Request for Hearing, and Admission of Contentions (dated Oct. 20, 2010) (ADAMS Accession No. ML102940545); Beyond Nuclear, Seacoast Anti-Pollution League and New Hampshire Sierra Club Request for Public Hearing and Petition to Intervene (Oct. 20, 2010) (ADAMS Accession No. ML102930267).

⁸ 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) (ADAMS Accession No. ML103190764) ("NRC Staff Answer"); 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) (ADAMS Accession No. ML103190494).

⁹ See *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), LBP-11-02, 73 NRC 28 (2011).

¹⁰ See *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-05, 75 NRC 301 (2012).

NextEra's evaluation of wind power as an energy alternative in its environmental report, Friends/NEC's safety contention concerning the adequacy of aging management of non-environmentally qualified inaccessible electrical cables and transformers, and one of Friends/NEC's severe accident mitigation alternatives ("SAMA") contention (Contention 4E).¹¹ Therefore, Friends/NEC currently has two admitted contentions in this proceeding that challenge the adequacy of NextEra's SAMA analysis for Seabrook – Contention 4B and Contention 4D.¹²

Contention 4B states that:

The SAMA analysis for Seabrook minimizes the potential amount of radioactive release in a severe accident.¹³

In admitting Contention 4B, the Board narrowed the scope of the contention to three discrete issues: (1) "the source terms used by NextEra to estimate the consequences of severe accidents ... has not been validated by the [the] NRC,"¹⁴ (2) the release fractions used by NextEra are consistently smaller for key radionuclides than those specified in NUREG-1465,¹⁵ and (3) MAAP generates lower release fractions than those derived and used by NRC in other severe accident studies.¹⁶ In affirming the Board's admission of Contention 4B, the

¹¹ See *id.*

¹² *Id.* On July 9, 2012, Friends/NEC filed a motion for leave to admit a new contention regarding the NRC's consideration of spent fuel storage after the license renewal term. Intervenor's Motion for Leave to File a New Contention Concerning Temporary Storage and Ultimate Disposal of Nuclear Waste at Seabrook Station, Unit 1" (July 9, 2012) (ADAMS Accession No. ML12191A420). The same or similar contentions were filed in other proceedings. On August 7, 2012, the Commission directed that these contentions "be held in abeyance pending" the Commission's further order. *Calvert Cliffs Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-12-16, 76 NRC 63,68-69 (2012). Resultantly, Friends/NEC's spent fuel contention is currently in abeyance before this tribunal.

¹³ *Seabrook*, CLI-12-05, 75 NRC at 327; *Seabrook*, LBP-11-02, 73 NRC at 69.

¹⁴ *Seabrook*, LBP-11-02, 73 NRC at 65.

¹⁵ *Id.*

¹⁶ *Id.* at 67.

Commission stated that “support for this contention is weak.”¹⁷ The Commission questioned the contentions focus on early comparisons of predecessor codes and the use of generic source terms in a site-specific analysis. The Commission stated:

Essentially, the challenge to the MAAP-generated release fractions rests on a thin reed—the excerpts from the draft NUREG-1150 report and the BNL report. We do not read these excerpts to necessarily suggest that MAAP-generated source terms are inaccurate, only that under the specific comparisons noted, the MAAP-generated source terms were smaller than source terms obtained from the NUREG-1150 report. ... Contention 4B does not compare NUREG-1150 values to the Seabrook SAMA analysis release fractions, or otherwise discuss or even reference the Seabrook release fractions. And while the contention suggests that generic source term values obtained from NUREG-1150 would be larger, it does not suggest why the generic values would be more accurate for a plant-specific SAMA analysis than the MAAP-generated plant-specific release fractions.¹⁸

On April 26, 2013, the NRC Staff issued its second draft supplemental environment impact statement for Seabrook reviewing the updated analysis of severe accident mitigation alternatives.¹⁹ On May 6, 2013, the Board granted the parties’ joint motion regarding the timing of NextEra’s summary disposition motions.²⁰ On May 10 2013, NextEra moved for summary disposition of Contention 4B.²¹

DISCUSSION

I. Legal Standards Governing Motions for Summary Disposition

Pursuant to 10 C.F.R. § 2.1205(a), motions for summary disposition must be in writing, must include a written explanation of the basis for the motion, and must include affidavits to

¹⁷ *Seabrook*, CLI-12-05, 75 NRC at 326.

¹⁸ *Id.*

¹⁹ *Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants, Supplement 46, Regarding Seabrook Station, Second Draft Report for Comment*, NUREG-1437, Supplement 46 (April 2013).

²⁰ Memorandum and Order (Granting Motion Regarding Timing of Summary Disposition Motions) (May 6, 2013) (ADAMS Accession No. ML13126A124).

²¹ NextEra’s Motion at 1.

support statements of fact. In ruling on a motion for summary disposition, the presiding officer is to apply the standards for summary disposition set forth in 10 C.F.R. § 2.710. See 10 C.F.R. § 2.1205(c). A moving party is entitled to summary disposition of a contention if the filings in the proceeding, together with the statements of the parties and the affidavits, demonstrate that there is no genuine issue as to any material fact and that it is entitled to a decision in its favor as matter of law. See 10 C.F.R. §§ 2.1205 and 2.710(d)(2); see also *Advanced Medical Sys., Inc.* (One Factory Row, Geneva, Ohio), CLI-93-22, 38 NRC 98, 102-03 (1993); *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-05-19, 62 NRC 134, 179-80 (2005).

A party seeking summary disposition bears the burden of demonstrating that no genuine issue of material fact exists. See *Sequoyah Fuels Corp. & General Atomics Corp.* (Gore, Okla. Site Decontamination and Decommissioning Funding), LBP-94-17, 39 NRC 359, 361 (1994). The evidence submitted must be construed in favor of the non-moving party. *Id.* Affidavits submitted in support of a summary disposition motion must be executed by individuals qualified by “knowledge, skill, experience, training, or education,” and must be sufficiently grounded in facts. *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-05-04, 61 NRC 71, 80-81 (2005) (citing Fed. Rule of Evid., Rule 702); *Bragdon v. Abbott*, 524 U.S. 624, 653 (1998) (stating that an expert’s opinion must have a traceable, analytical basis in objective fact before it may be considered on summary judgment).

A party opposing a motion for summary disposition cannot rely on mere allegations or denials of the moving party’s facts; rather, the non-moving party must set forth specific facts demonstrating a genuine issue of material fact. See 10 C.F.R. § 2.710(b); *Advanced Medical Sys.*, CLI-93-22, 38 NRC at 102. Bare assertions and general denials, even by an expert, are insufficient to oppose a properly supported motion for summary disposition. *Duke Cogema*, LBP-05-04, 61 NRC at 81 (citing *Advanced Medical Sys.*, CLI-93-22, 38 NRC at 102); *Houston Lighting & Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-629, 13 NRC 75, 78 (1981). Although the burden is on the moving party to show there is no genuine issue of

material fact, the non-moving party must controvert any material fact proffered by the moving party or that fact will be deemed admitted. *Advanced Medical Sys.*, CLI-93-22, 38 NRC at 102-03.

For a Board to find the existence of a genuine issue of material fact, “the factual record, considered in its entirety, must be enough in doubt so that there is a reason to hold a hearing to resolve the issue.” *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Units 1 & 2), LBP-83-46, 18 NRC 218, 223 (1983). The adjudicating body need only consider the purported factual disputes that are “material” to the resolution of the issues raised in the summary disposition motion. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986).²² Material facts are those with the potential to affect the outcome of the case. *Ganton Technologies Inc. v. National Indus. Group Pension Plan*, 865 F. Supp 201, 205 (S.D.N.Y 1994); *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-18, 44 NRC 86, 99 (1996).

In addition to demonstrating that no genuine issue of material fact exists, the movant must also demonstrate that it is entitled to the decision as a matter of law. *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986). In its recent *Pilgrim* decision, the Commission clearly articulated the legal standard for SAMA contentions. The Commission stated: “NRC adjudicatory hearings are not ‘EIS editing sessions.’ The ultimate concern here 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.” *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-09-11, 69 NRC 529, 533 (2009).

²² Because the Commission’s summary disposition rules follow Rule 56 of the Federal Rules of Civil Procedure, federal court decisions that interpret and apply Rule 56 are considered appropriate precedent for the Commission’s rules. See *Safety Light Corp.* (Bloomsburg Site Decommissioning and License Renewal Denials), LBP-95-9, 41 NRC 412, 449 n. 167 (1995). See also *Advanced Medical Sys.*, CLI-93-22, 38 NRC at 102-03; *Duke Cogema Stone & Webster*, 61 NRC at 79.

II. Legal Standards Governing SAMA Analysis Under NEPA

The National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4321 et seq., requires federal agencies, including the NRC, to take a hard look at the environmental impacts of their actions. NEPA does not mandate a specific outcome or a course of action, including a decision to mitigate any potential impacts.²³ For operating license renewals, the NRC fulfills its requirements under NEPA through the Final Supplemental Environmental Impact Statement (“FSEIS”).²⁴ The Commission stated that “there is no NEPA requirement to use the best scientific methodology, and NEPA ‘should be construed in light of reason if it is not to demand’ virtually infinite study and resources.”²⁵ The Commission has cautioned that “[o]ur boards do not sit to ‘flyspeck’ environmental documents or to add details or nuances. If the [EIS] on its face ‘comes to grips with all important considerations’ nothing more need be done.”²⁶ In *Pilgrim*, the Commission stated:

Ultimately, we hold adjudicatory proceedings on issues that are material to licensing decisions. With respect to a SAMA analysis in particular, unless a contention, submitted with adequate factual, documentary, or expert support, raises a potentially significant deficiency in the SAMA analysis—that is, a deficiency that could credibly render the SAMA analysis altogether unreasonable under NEPA standards—a SAMA-related dispute will not be material to

²³ See, e.g., *Baltimore Gas and Elec. Co. v. Nat. Res. Def. Council*, 426 U.S. 87, 97 (1983) (quoting *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n. 21 (1976)) (stating that NEPA requires “only that the agency take a ‘hard look’ at the environmental consequences before taking a major action”); *Sierra Club v. Army Corp of Engineers*, 446 F.3d 808, 815 (2006) (same); *Louisiana Energy Services, L.P.* (Clairborne Enrichment Center), CLI-98-3, 47 NRC 77, 87-88 (1998) (same); *Hydro Resources, Inc.* (P.O. Box 777, Crownpoint, New Mexico 87313), LBP-06-19, 64 NRC 53, 63-64 (2006) (same); see also *Winter v. Nat. Res. Def. Council*, 129 S.Ct. 365, 376 (2008) (stating that “NEPA imposes only procedural requirements” and does not mandate any particular result).

²⁴ 10 C.F.R. § 51.20.

²⁵ *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Station), CLI-10-11, 71 NRC 287, 315 (2010).

²⁶ *Exelon Generation Co, LLC* (Early Site Permit for Clinton ESP Site), CLI-05-29, 62 NRC 801, 811 (2005) (citing *Systems Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-05-4, 61 NRC 10, 13 (2005) (footnote omitted)).

the licensing decision, and is not appropriate for litigation in an NRC proceeding.²⁷

The Commission warned that “in a highly predictive analysis such as a SAMA analysis, there are bound to be significant uncertainties, and therefore an uncertainty analysis is performed.”²⁸

The Commission, anticipating the wide ranging disputes over individual aspects of the SAMA analysis, has said:

It always will be possible to conceive of yet another input or methodology that could have been used in the SAMA computer modeling, and many different inputs and approaches may all be reasonable choices. ... The SAMA analysis is not a safety review performed under the Atomic Energy Act. The mitigation measures examined are supplemental to those we already require under our safety regulations for reasonable assurance of safe operation.²⁹

In other words, it is simply not enough to take issue with a particular aspect of the SAMA analysis. Instead, an intervenor’s challenge to a SAMA analysis must show that it was unreasonable on whole.³⁰ The Commission recently stressed that

the “proper question is not whether there are plausible alternative choices for use in the analysis, but whether the analysis that was done is reasonable under NEPA.” To challenge an application, a petitioner must point with support to an asserted deficiency that renders the SAMA analysis unreasonable under NEPA. In other words, “[a] contention proposing alternative inputs or methodologies must present some factual or expert basis for why the proposed changes in the analysis are warranted (e.g., why the inputs or methodology used is unreasonable, and the proposed changes or methodology would be more appropriate).”³¹

²⁷ *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Station) CLI-12-01, 75 NRC 39, 57 (2012) (emphasis added).

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.* at 56-57.

³¹ *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit1), CLI-12-08, 75 NRC 393, 406-07 (2012). (reversing the admission of contention challenging the costs to clean-up a severe accident) (internal citations omitted).

Finally, the Commission has concluded that “[u]ltimately, NEPA requires the NRC to provide a ‘reasonable’ mitigation alternatives analysis, containing ‘reasonable’ estimates, including where appropriate, full disclosures of any known shortcomings in available methodology, disclosure of incomplete or unavailable information and significant uncertainties, and reasoned evaluation of whether and to what extent these or other considerations credibly could or would alter the Pilgrim SAMA analysis conclusions”³²

Most recently, the Board in the *Davis-Besse* proceeding ruled on a similar motion for summary disposition on an identical contention.³³ The *Davis-Besse* Board ruled in favor of applicant’s motion for summary disposition on the same three issues at issue in the present contention.³⁴

III. Intervenor’s Contention 4B Does Raise a Genuine Issue of Material that Requires Resolution In a Hearing

The Staff has carefully reviewed NextEra’s Motion, its statement of material facts, affidavit in support of its motion, and the referenced documents supporting the motion. After reviewing NextEra’s filings and as explained below, the Staff agrees that there are no genuine issues of material exist and that Contention 4B may be resolved as a matter of law.

A. NextEra’s Motion Demonstrates That No Genuine Issue of Material Fact Exists Regarding Contention 4B

The Staff has carefully reviewed the reports, declarations, and list of material facts that form the basis of NextEra’s Motion, and agrees with NextEra that no genuine disputes of material fact exist. NextEra has listed 28 facts as not in dispute. The Staff, after reviewing all

³² *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-22 72 NRC 202, 208-09 (2010).

³³ The intervenors in *Davis-Besse* copied the Severe Accident Mitigation Alternatives (“SAMA”) analysis contention from Friends/NEC’s contention in Seabrook. In *Davis-Besse*, the Commission narrowed the original SAMA analysis to a source term challenge that is identical to the contention at issue here. *Davis-Besse*, CLI-12-08, 75 NRC at 406-09.

³⁴ *FirstEnergy Nuclear Operating Co.*, (Davis-Besse Nuclear Power Station, Unit 1), LBP-12-26, (slip op. at 17-18, 22-23, 28) (Dec. 28, 2012).

28 facts, has determined that the statements contained in NextEra's Statement of Material Facts are correct, with certain minor clarifications and corrections noted by the Staff's affiants and in the Staff's Statement of Material Facts.

The Staff is in full agreement with 24 of the 28 stated. As to the 4 additional facts, the Staff provided some additional clarifications but these clarifications are not material to the issue before the Board in Contention 4B and do not preclude the Board from ruling for NextEra. As indicated in the attached declaration these clarifications do not materially change the underlying facts. See Declaration of Randy Gauntt Concerning the Motion for Summary Disposition of Contention 4B ("Gauntt's Declaration"); The Staff's Response to NextEra's Statement of Material Facts ("Staff's Statement of Material Facts"). Therefore, the Staff has concluded that no genuine dispute of material fact exists with respect to Contention 4B and Contention 4B may be resolved as a matter of law.

B. NextEra is Entitled to a Judgment as a Matter of Law

As explained by the Commission, the adequacy of a SAMA analysis is not determined by whether different or alternative inputs could have been used.³⁵ A SAMA analysis, under NEPA, is evaluated as to whether it is reasonable such that a change suggested by Intervenor's challenging the analysis could credibly alter the conclusions.³⁶

Here, Intervenor's contention argues that NextEra's SAMA analysis is unreasonable because source terms developed from the Modular Accident Analysis Program ("MAAP") Verison 4 results in an under-estimation of the true consequences of a severe accident.³⁷ Specifically, Intervenor's claim that instead of using the source terms generated by the MAAP4 code NextEra should have used the source terms identified in NUREG-1465 or NUREG-1150,

³⁵ *Pilgrim*, CLI-10-22 72 NRC at 208-09.

³⁶ *Id.*

³⁷ See *Seabrook*, CLI-12-05, 75 NRC at 325-26.

instead.³⁸ As explained by the Staff's expert, source terms from NUREG-1465 and NUREG-1150 are not relevant or appropriate for a site-specific SAMA analysis at Seabrook. The source terms in NUREG-1465 and NUREG-1150 do not appropriately account for removal mechanisms or site-specific removal mechanisms prior to being released into the environment. Moreover, the source terms calculated in NUREG-1465 and NUREG-1150 are inappropriate in light of the substantial changes to severe accident modeling during the last two decades.³⁹ Even assuming *arguendo* that NUREG-1150's two decade old calculations might be applicable to evaluating the proper source term, the source terms used by NextEra for Seabrook, source terms generated from modern accident codes like MAAP and MELCOR, and even the source term found in NUREG-1150 are in remarkable agreement.⁴⁰

1. NUREG-1465 Is an Inappropriate Reference for
Determining the Proper Source Term for a SAMA Analysis

Intervenors' reliance on NUREG-1465 to show that the source terms used by NextEra are inappropriately too small is fundamentally in error.⁴¹ NUREG-1465, an NRC document, is primarily related to siting criteria for a nuclear reactor.⁴² The source term described in NUREG-1465 occurs at a different point during a severe accident sequence than the source terms used by MELCOR Accident Consequence Code Systems ("MACCS2").⁴³ The NUREG-1465 source term describes the radionuclides released into the containment.⁴⁴ Alternatively, the SAMA

³⁸ See *Seabrook*, CLI-12-05, 75 NRC at 325; *Seabrook*, LBP-11-02, 73 NRC at 66-68.

³⁹ Declaration of Randy Gauntt Concerning the Motion for Summary Disposition of Contention 4B ("Gauntt's Declaration") at ¶¶ 19 – 23.

⁴⁰ *Id.* at ¶¶ 24 – 31.

⁴¹ *Id.* at ¶ 16.

⁴² Staff's Statement of Material Facts at ¶ 15.

⁴³ See Gauntt's Declaration at ¶ 16.

⁴⁴ *Id.*

analysis source terms are concerned about radionuclides released into the environment.⁴⁵ As Dr. Gauntt explains, radionuclides released into containment undergo a multitude of physical and chemical processes that serve to preclude their uncontrolled release into the environment.⁴⁶ These physical and chemical removal mechanisms include settling, adsorption, washing by the containment spray, and scrubbing.⁴⁷ As a result of these active and passive radionuclide removal processes, the source term released into the environment should be and is significantly smaller than source term that was calculated for a release into containment.⁴⁸ As Dr. Gauntt explains, the source terms released into containment are simply not applicable to a SAMA analysis, which is concerned with the impact from releasing radionuclides into the environment.⁴⁹ Thus, Intervenor's concern about the differences between source terms calculated from MAAP4 or calculated in NUREG-1465 are simply not relevant to whether NextEra's SAMA analysis was conducted in a reasonable manner. Thus, NextEra is entitled to a judgment as a matter of law.

2. NUREG-1150's Source Terms are Consistent with the Source Terms Used by NextEra

Intervenor's arguments asserting that source terms produced by MAAP are consistently smaller than the source terms produced by MELCOR or as identified in NUREG-1150 do not withstand even the most limited scrutiny. As Dr. Gauntt explains, the draft NUREG-1150 statements comparing MAAP to MELCOR were not included in the final version of NUREG-1150 and do not make a proper comparison of similar accident source terms.⁵⁰ The draft

⁴⁵ Gauntt's Declaration at ¶ 16.

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.* at ¶¶ 16 – 17.

⁴⁹ *Id.* at ¶ 16.

⁵⁰ *Id.* at ¶ 21.

NUREG-1150 compared mean source terms generated under MAAP with maximum source terms generated by MELCOR for different plants, potentially using different inputs, and different accident sequences.⁵¹ Dr. Gauntt compared the source terms identified in NUREG-1150 and the source terms used in NextEra's SAMA analysis.⁵² Once the source terms were compared on a consistent basis, including looking at the entire statistical description of the source term and the type of accident, it is apparent that the source terms generated by NextEra using MAAP4 are very consistent with NUREG-1150 and actually produced higher amounts of the key radionuclides of concern in some accident calculations.⁵³ Since the source terms produced by MAAP4 were consistent with the source terms identified in NUREG-1150, Intervenor's concern that MAAP produces non-conservative source terms is simply not supported by the clear facts. Thus, NextEra is entitled to judgment as a matter of law.

3. NUREG-1150's Analysis is Not Reasonable in light of the Improved Modeling Performance Reflected in MELCOR and MAAP

The Staff's expert explains that Intervenor's assertions regarding the NUREG-1150 source terms and even the comparison between source terms appearing in NUREG-1150 has no real value or relevance to determining whether modern source term codes are producing reasonable results.⁵⁴ The severe accident modeling capabilities that existed at the time of NUREG-1150 were severely limited in comparison to the modern models being used today.⁵⁵ Dr. Gauntt explains that since NUREG-1150 was first published, more modern accident codes have introduced more realistic physics and thermo-hydraulic models. Many of the early codes

⁵¹ Gauntt's Declaration at ¶¶ 24 – 29.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.* at ¶ 30.

⁵⁵ *Id.* at ¶¶ 22 – 23.

were predominantly parametric where modern codes have adopted more mechanistic calculations.⁵⁶ Since the accident source terms produced in NUREG-1150 represent decades old analysis with limited performance compared to the more modern and complete codes used now like MAAP4, Intervenor's concern that the MAAP4 code may produce non-conservative results is unsupported by the facts and immaterial to the issue currently before the Board. Thus, Intervenor's Contention 4B should be dismissed and NextEra's Motion granted.

4. NextEra's Source Terms Are Reasonable in Light the most recent State of the Art Reactor Consequence Analysis

Dr. Gauntt also compared NextEra's source terms to the most recent source terms developed for the Staff's State of the Art Reactor Consequences ("SOARCA"). The Staff's expert showed that NextEra's source terms for Seabrook are reasonable and somewhat conservative.⁵⁷ One of the key aspects of Seabrook's release fractions and source terms is NextEra's decision to utilize four plume segments in the analysis.⁵⁸ The fourth plume segment is not released until at least 48 hours after the start of the accident.⁵⁹ As a result of extending the accident release time past the 48 hour mark, NextEra's release fractions and source terms are larger than the comparable release fractions from the SOARCA study, when all four plume segments are included.⁶⁰ The release fractions and source terms are comparable even when Seabrook's fourth plume segment is removed from the comparison.⁶¹ As such, NextEra's source terms for Seabrook's SAMA analysis are reasonable and conservative. Intervenor's

⁵⁶ Gauntt's Declaration at ¶¶ 22-23

⁵⁷ *Id.* at ¶¶ 32 – 34.

⁵⁸ *Id.* at 31.

⁵⁹ *Id.*

⁶⁰ *Id.* at ¶¶ 34 – 35.

⁶¹ *Id.*

assertions that MAAP produces anomalously low source terms is unsupported by the underlying facts. Thus, Contention 4B should be dismissed and NextEra's Motion should be granted.

CONCLUSION

For the reasons discussed above, NextEra's motion for summary disposition on Contention 4B should be granted and Contention 4B should be dismissed.

Respectfully submitted,

Signed (electronically) by

Brian G. Harris
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop – O-15D21
Washington, DC 20555
Telephone: (301) 415-1392
E-mail: brian.harris@nrc.gov
Date of signature: July 15, 2013

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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NEXTERA ENERGY SEABROOK, LLC)	Docket No. 50-443-LR
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CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC STAFF'S ANSWER TO NEXTERA'S MOTION FOR SUMMARY DISPOSITION OF FRIENDS OF THE COAST/NEW ENGLAND COALITION CONTENTION 4B (SAMA ANALYSIS SOURCE TERMS)," "THE STAFF'S RESPONSE TO NEXTERA'S STATEMENT OF MATERIAL FACTS," "DECLARATION OF RANDY GAUNNT CONCERNING THE MOTION FOR SUMMARY DISPOSITION OF CONTENTION 4B," Randy Gauntt's Statement of Professional Qualifications, and Attachments 4B-A – 4B-N in the above-captioned proceeding have been served on the following by Electronic Information Exchange this 15th day of July, 2013.

/Signed (electronically) by/

Brian G. Harris
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop – O-15D21
Washington, DC 20555
Telephone: (301) 415-1392
E-mail: brian.harris@nrc.gov
Date of signature: July 15, 2013