

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 ANSWER TO  
NEXTERA'S MOTION FOR SUMMARY DISPOSITION  
OF FRIENDS OF THE COAST/NEW ENGLAND COALITION CONTENTION 4D  
(SAMA ANALYSIS ATMOSPHERIC MODELING)

INTRODUCTION

Pursuant to 10 C.F.R. § 2.1205, and the Atomic Safety and Licensing Board's ("Board") Orders,<sup>1</sup> the staff of the U.S. Nuclear Regulatory Commission ("NRC Staff" or "Staff") hereby files its answer<sup>2</sup> to "NextEra's Motion for Summary Disposition of Friends of the Coast/New England Coalition Contention 4D (SAMA Analysis Atmospheric Modeling)" ("NextEra's Motion").<sup>3</sup> As more fully set forth below, the Staff does not support NextEra's Motion because NextEra did not consider uncertainty in determining whether the potential 32% increase in total benefit (accounting for NextEra's Exposure Index correction factor) would result in the

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<sup>1</sup> 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).

<sup>2</sup> The Staff is filing the following items along with this Answer: a separate Statement of Material Facts; an affidavit supporting the Staff's position, Affidavit of John G. Parillo Concerning NextEra's Motion for Summary Disposition of Friends of the Coast/New England Coalition Contention 4D (SAMA Analysis Atmospheric Modeling) ("Parillo Aff."); a Statement of Professional Qualifications for John G. Parillo (Attachment ("Att.") 4D-A); an excerpt of NextEra Energy Seabrook, LLC, Supplement 2 to Severe Accident Mitigation Alternatives Analysis (SBK-L-12053) (March 19, 2012) ("March 2012 SAMA supplement (SBK-L-12053)") (Att. 4D-B); and an excerpt from NEI 05-01, Rev. A, "Severe Accident Mitigation Alternatives (SAMA) Analysis Guidance Document" (Nov. 2005) ("NEI 05-01") (Att. 4D-C).

<sup>3</sup> NextEra's Motion for Summary Disposition of Friends of the Coast/New England Coalition Contention 4D (SAMA Analysis Atmospheric Modeling) (May 10, 2013) ("NextEra's Motion").

identification of additional potentially cost-beneficial SAMAs. Because NextEra did not consider uncertainty, NextEra has not shown that use of a different methodology would not result in the identification of additional potentially cost-beneficial SAMAs. Therefore, NextEra has not demonstrated that it is entitled to judgment as a matter of law. Accordingly, NextEra's Motion should be denied.

## BACKGROUND

### A. Procedural History

This proceeding concerns the May 25, 2010 application of NextEra to renew its operating license for Seabrook Station, Unit 1 ("Seabrook") for an additional 20 years from the current expiration date of March 15, 2030.<sup>4</sup> On October 20, 2010, Friends of the Coast/New England Coalition Contention ("Friends/NEC") and Beyond Nuclear filed separate petitions to intervene.<sup>5</sup> On November 15, 2010, NextEra and the Staff filed answers opposing the petitions to intervene.<sup>6</sup> 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.<sup>7</sup> On March 8, 2012, the Commission affirmed in part, and reversed in part, the Board's decision.<sup>8</sup> Specifically, the Commission held that the Board erred in admitting

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<sup>4</sup> 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").

<sup>5</sup> See Friends of the Coast and New England Coalition Petition for Leave to Intervene, Request for Hearing, and Admission of Contentions (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).

<sup>6</sup> 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); 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).

<sup>7</sup> See *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), LBP-11-02, 73 NRC 28 (2011).

<sup>8</sup> See *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-05, 75 NRC 301 (2012).

Beyond Nuclear's contention challenging the adequacy of the 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).<sup>9</sup> Thus, 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.<sup>10</sup>

Contention 4D states that:

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.<sup>11</sup>

In affirming the Board's admission of Contention 4D, the Commission referenced the Board's holding that "'Friends/NEC have raised plausible limitations of air dispersion modeling at the [Seabrook] site,' and [the] asserted limitations of the atmospheric dispersion model plausibly could affect the SAMA cost-benefit conclusions."<sup>12</sup> However, the Commission agreed with NextEra that "Friends/NEC did not provide specific expert or factual support for its claim that use of the straight-line Gaussian plume model 'underestimates' radiological doses," and noted that Friends/NEC suggested in its reply before the Board that "they will, at a later 'stage' in the proceeding, 'present factual evidence that indeed the straight-line Gaussian plume model is

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<sup>9</sup> See *id.*

<sup>10</sup> *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.

<sup>11</sup> *Seabrook*, CLI-12-05, 75 NRC at 327; *Seabrook*, LBP-11-02, 73 NRC at 69.

<sup>12</sup> *Id.* at 329 (citing *Seabrook*, LBP-11-02, 73 NRC at 71).

NOT conservative.”<sup>13</sup>

On March 19, 2012, NextEra submitted a supplement to its SAMA analysis (“March 2012 SAMA supplement (SBK-L-12053)”)<sup>14</sup> On April 26, 2013, the NRC Staff issued its second draft supplemental environment impact statement for Seabrook (“DSEIS”) reviewing the updated analysis of severe accident mitigation alternatives.<sup>15</sup> On May 6, 2013, the Board granted the parties’ joint motion regarding the timing of NextEra’s summary disposition motions.<sup>16</sup> On May 10, 2013, NextEra moved for summary disposition of Contention 4D.<sup>17</sup>

## 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 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.<sup>18</sup> The standards are based upon those the federal courts apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure.<sup>19</sup> 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

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<sup>13</sup> *Id.* at 328-29 (emphasis in original).

<sup>14</sup> March 2012 SAMA supplement (SBK-L-12053) (Att. 4D-B).

<sup>15</sup> 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) (“DSEIS”).

<sup>16</sup> Memorandum and Order (Granting Motion Regarding Timing of Summary Disposition Motions) (May 6, 2013) (ADAMS Accession No. ML13126A124).

<sup>17</sup> NextEra’s Motion at 1.

<sup>18</sup> See 10 C.F.R. § 2.1205(c).

<sup>19</sup> *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 297 (2010) (citing *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-93-22, 38 NRC 98, 102 (1993)).

entitled to a decision in its favor as a matter of law.<sup>20</sup> This standard establishes a two-part test: first, the Board must determine if any material facts remain genuinely in dispute; and second, if no such disputes remain, the Board must determine if the movant's legal position is correct.<sup>21</sup>

A party seeking summary disposition bears the burden of demonstrating that no genuine issue of material fact exists.<sup>22</sup> The evidence submitted must be construed in favor of the non-moving party.<sup>23</sup> 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.<sup>24</sup>

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.<sup>25</sup> Bare assertions and general denials, even by an expert, are insufficient to oppose a properly supported motion for summary disposition.<sup>26</sup> Although the burden is on the moving party to show there is no genuine issue of material fact,

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<sup>20</sup> 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).

<sup>21</sup> *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit1), LBP-12-26, \_\_\_ NRC \_\_\_, (slip op. at 5) (Dec. 28, 2012), (citing *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-11-31, 74 NRC 643, 648 (2011)).

<sup>22</sup> See *Sequoyah Fuels Corp. & General Atomics Corp.* (Gore, Okla. Site Decontamination and Decommissioning Funding), LBP-94-17, 39 NRC 359, 361 (1994).

<sup>23</sup> *Id.*

<sup>24</sup> *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).

<sup>25</sup> See 10 C.F.R. § 2.710(b); *Advanced Medical Sys.*, CLI-93-22, 38 NRC at 102.

<sup>26</sup> *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).

the non-moving party must controvert any material fact proffered by the moving party or that fact will be deemed admitted.<sup>27</sup>

Absent any probative evidence supporting the claim, mere assertions of a dispute as to material facts does not invalidate the licensing Board's grant of summary disposition.<sup>28</sup> 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.<sup>29</sup> Material facts are those with the potential to affect the outcome of the case.<sup>30</sup>

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.<sup>31</sup> At issue is not whether evidence unmistakably favors one side or the other, but whether there is sufficient evidence favoring the non-moving party for a reasonable trier of fact to find in favor of that party.<sup>32</sup> If reasonable minds could differ as to the import of the evidence, summary disposition is not appropriate.<sup>33</sup>

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<sup>27</sup> *Advanced Medical Sys.*, CLI-93-22, 38 NRC at 102-03.

<sup>28</sup> *Advanced Med. Sys., Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 308-10 (1994).

<sup>29</sup> *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). 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.

<sup>30</sup> *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).

<sup>31</sup> *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986).

<sup>32</sup> *Pilgrim*, CLI-10-11, 71 NRC at 297.

<sup>33</sup> *Id.* at 297-98.

## II. Legal Standards 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.<sup>34</sup> The NRC fulfills its obligations under NEPA for license renewal of operating licenses, through the Generic Environmental Impact Statement (“GEIS”) and preparation of a Final Supplemental Environmental Impact Statement (“FSEIS”).<sup>35</sup> The Commission has 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.”<sup>36</sup> 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.”<sup>37</sup>

## III. Legal Standards Governing SAMA Analysis under NEPA

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

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<sup>34</sup> See, e.g., *Baltimore Gas and Elec. Co. v. Nat. Res. Def. Council*, 462 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 (8th Cir. 2006); *Louisiana Energy Services, L.P.* (Clairborne Enrichment Center), CLI-98-3, 47 NRC 77, 87-88 (1998); *Hydro Resources, Inc.* (P.O. Box 777, Crownpoint, New Mexico 87313), LBP-06-19, 64 NRC 53, 63-64 (2006); see also *Winter v. Nat. Res. Def. Council*, 555 U.S. 7, 23 (2008)(stating that “NEPA imposes only procedural requirements” and does not mandate any particular result).

<sup>35</sup> 10 C.F.R. § 51.2.

<sup>36</sup> *Pilgrim*, CLI-10-11, 71 NRC at 315.

<sup>37</sup> *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)).

NEPA standards—a SAMA-related dispute will not be material to the licensing decision, and is not appropriate for litigation in an NRC proceeding.<sup>38</sup>

Further, 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.”<sup>39</sup>

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.<sup>40</sup>

In other words, it is not enough for an intervenor to take issue with a particular aspect of the SAMA analysis. Instead, an intervenor’s challenge to a SAMA analysis must show that it is unreasonable as a whole.<sup>41</sup> 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.’”<sup>42</sup> A petitioner may not simply assert a deficiency. Rather to challenge an applicant’s SAMA analysis “a petitioner must point with support to an asserted deficiency that renders the SAMA analysis unreasonable under NEPA.”<sup>43</sup> Specifically,

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<sup>38</sup> *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Station), CLI-12-01, 75 NRC 39, 57-58 (2012) (emphasis added).

<sup>39</sup> *Id.* at 58.

<sup>40</sup> *Id.* at 57.

<sup>41</sup> *Id.* at 57-58.

<sup>42</sup> *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit1), CLI-12-08, 75 NRC 393, 406 (2012). (reversing the admission of contention challenging the costs to clean-up a severe accident) (internal citations omitted).

<sup>43</sup> *Id.* at 406-07.



“[a] contention proposing alternative inputs or methodologies must present some factual or expert basis for why the proposed changes in the analysis are warranted . . . .”<sup>44</sup> Even more, intervenors must show “why the inputs or methodology used is unreasonable, and the proposed changes or methodology would be more appropriate.”<sup>45</sup>

Finally, the Commission has concluded that “[u]ltimately, NEPA requires the NRC to provide a ‘reasonable’ mitigation alternatives analysis, containing ‘reasonable’ estimates . . . .”<sup>46</sup>

The Commission explained that the Staff’s FSEIS need only explain

any known shortcomings in available methodology, . . . incomplete or unavailable information and significant uncertainties, and a reasoned evaluation of whether and to what extent these or other considerations credibly could or would alter the [SAMA] analysis conclusions . . . .<sup>47</sup>

However, at the summary disposition stage, the Commission has indicated that reasonableness turns on whether the moving party has demonstrated that use of different inputs or a different methodology would not result in the identification of additional potentially cost-beneficial SAMAs.<sup>48</sup>

#### IV. NextEra’s Failure to Consider Uncertainty Precludes Judgment as a Matter of Law

In its motion, NextEra seeks summary disposition of Friends/NEC Contention 4D on the grounds that no genuine issue of material fact exists and NextEra is entitled to a decision as a matter of law.<sup>49</sup> The Staff has carefully reviewed NextEra’s Motion, statement of material facts,

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<sup>44</sup> *Id.* at 407.

<sup>45</sup> *Id.*

<sup>46</sup> *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-22, 72 NRC 202, 208-09 (2010).

<sup>47</sup> *Id.*

<sup>48</sup> *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-09-11, 69 NRC 529, 533 (2009) (stating that the “ultimate concern” is whether any additional SAMA should have been identified as potentially cost-beneficial).

<sup>49</sup> NextEra’s Motion at 1.

joint declaration in support of its motion, and accompanying attachments that form the basis of NextEra's Motion. NextEra has listed 23 material facts. The Staff is in full agreement with 21 of the 23 stated material facts. However, as explained in further detail below, the Staff does not fully support NextEra's Motion or NextEra's conclusions in the two remaining stated material facts because NextEra did not consider uncertainty in determining whether the potential 32% increase in total benefit (accounting for NextEra's Exposure Index correction factor) would result in the identification of additional potentially cost-beneficial SAMAs. Had NextEra performed an uncertainty analysis or provided some sort of explanation for why an uncertainty analysis was not necessary, the Staff might have been inclined to support NextEra's Motion.

In support of the motion, NextEra's experts performed a bounding type of analysis to fully characterize the impacts from using an alternative meteorological model that is suggested by Friends/NEC in Contention 4D. However, this type of bounding analysis is not required under NRC regulations or expected by the Staff as part of a license renewal application.

Specifically, NextEra's experts performed a confirmatory wind trajectory analysis using the CALMET meteorological model.<sup>50</sup> NextEra's experts also conducted an "Exposure Index" analysis to compare the results of the CALMET annual wind trajectory roses with the annual wind rose from the Seabrook Station SAMA analysis.<sup>51</sup> In its motion, NextEra asserts that this Exposure Index analysis, "suggests that use of a more complex model like CALMET could potentially increase the calculated benefit of a SAMA by about 32%."<sup>52</sup> NextEra argues that "[i]n contrast, an increase by more than a factor of two" is necessary before another SAMA would be

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<sup>50</sup> NextEra's Motion at 9. CALMET is a meteorological model that develops three-dimensional time dependent meteorological fields. *Id.* See also Joint Declaration of Steven R. Hanna and Kevin R. O'Kula in Support of NextEra's Motion for Summary Disposition of Contention 4D (SAMA Analysis Atmospheric Modeling) ("Hanna & O'Kula Joint Decl.") at ¶¶ 117-125;

<sup>51</sup> NextEra's Motion at 9-10; Hanna & O'Kula Joint Decl. at ¶¶ 126-131.

<sup>52</sup> NextEra's Motion at 10.

considered potentially cost-beneficial.<sup>53</sup> Therefore, NextEra concludes that this 32% increase in total benefit,<sup>54</sup> “is not large enough to make the next closest SAMA potentially cost beneficial.”<sup>55</sup> However, as the Staff’s expert, John Parillo explains, NextEra applied the 32% increase (“Exposure Index correction factor”) to the SAMA total benefit without accounting for uncertainty.<sup>56</sup>

The NRC Staff’s expectation is that applicants will consider uncertainty in the identification of potentially cost-beneficial SAMAs.<sup>57</sup> NextEra has acknowledged the importance of considering uncertainty in its previous submissions to the NRC Staff, including its most recent supplement to its SAMA analysis.<sup>58</sup> Moreover, the Commission noted 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.”<sup>59</sup> The Commission further explained that, “baseline results . . . are multiplied by an uncertainty factor. The final cost-benefit comparisons are based

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<sup>53</sup> NextEra’s Motion at 10.

<sup>54</sup> Total benefit includes internal and external risk factors including a 2.1 seismic multiplier. It does not account for uncertainty. NextEra uses the terms “SAMA’s total benefit value (with seismic multiplier)” and “SAMA’s best estimate (with seismic multiplier)” interchangeably to describe the total benefit. See Hanna & O’Kula Joint Decl. at ¶ 131; NextEra’s Statement of Material Facts at ¶¶ 10, 11.

<sup>55</sup> Hanna & O’Kula Joint Decl. at ¶ 131; NextEra’s Statement of Material Facts at ¶¶ 10, 11.

<sup>56</sup> Parillo Aff. at ¶ 13.

<sup>57</sup> Parillo Aff. at ¶ 4. The Staff’s expectation that applicants perform an additional uncertainty analysis is based on the NRC-endorsed guidance in NEI 05-01 (Att. 4D-C), and principles and practice for technically adequate probabilistic risk assessments in conjunction with ASME/ANS-RA-Sa-2009, “Addenda to ASME RA-S-2008, Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications,” and RG 1.200, Rev. 2, March 2009, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities.”

<sup>58</sup> See March 2012 SAMA supplement (SBK-L-12053) (Att. 4D-B), at 35.

<sup>59</sup> *Pilgrim*, CLI-12-01, 75 NRC at 58.

not on the baseline analysis results, but on revised results that take into account an uncertainty factor.”<sup>60</sup>

Assuming that each SAMA’s total benefit should be increased by the 32% Exposure Index correction factor, the NRC Staff identified additional potentially cost-beneficial SAMAs when uncertainty was included in the analysis.<sup>61</sup> The Staff identified these SAMAs based on Table 1, “Seabrook – MAB & Phase 2 SAMA Review,” of NextEra’s March 2012 SAMA supplement (SBK-L-12053) (“NextEra’s Table 1”).<sup>62</sup> As John Parillo, the Staff’s expert explains, the Staff took each of the SAMAs listed in NextEra’s Table 1 and multiplied the SAMA total benefit by 1.32 (to account for the Exposure Index correction factor) and by 2.35 (to account for uncertainty).<sup>63</sup> This 2.35 (235%) uncertainty factor is the uncertainty factor NextEra provided in its most recent supplement to the SAMA analysis, and is identified in the Staff’s DSEIS.<sup>64</sup>

NextEra’s experts conclude that the 32% increase “to account for the CALMET-based [Exposure Index] methodology would not result in the identification of any potentially cost beneficial SAMAs.”<sup>65</sup> NextEra’s experts assert that “SAMA #77 is the closest to becoming potentially cost beneficial,” but that its “total benefit of \$6.41 million would need to increase by more than a factor of two in order to meet or exceed the expected SAMA cost of more than \$15

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<sup>60</sup> *Pilgrim*, CLI-12-01, 75 NRC at 58 (emphasis added). The Commission noted that the baseline results were increased by an uncertainty factor – the ratio of the 95<sup>th</sup> percentile core damage frequency (“CDF”) to the mean CDF. *Id.* at 58 n. 86.

<sup>61</sup> Parillo Aff. at ¶¶ 14-21.

<sup>62</sup> Parillo Aff. at ¶ 15. See also Table 1, March 2012 SAMA supplement (SBK-L-12053) (Att. 4D-B), at 38-65.

<sup>63</sup> Parillo Aff. at ¶¶ 14-21. The Staff notes that the 32% increase in benefit accounting for the Exposure Index correction factor is far less than the 235% uncertainty factor.

<sup>64</sup> Parillo Aff. at ¶¶ 8, 10; March 2012 SAMA supplement (SBK-L-12053) (Att. 4D-B), at 35; DSEIS, Appendix F, at F-50.

<sup>65</sup> Hanna & O’Kula Joint Decl. at ¶ 131.

million.”<sup>66</sup> Therefore, NextEra concludes that this 32% increase in total benefit,<sup>67</sup> “is not large enough to make the next closest SAMA potentially cost beneficial.”<sup>68</sup> However, the Staff identified SAMA 77 as potentially cost-beneficial after accounting for uncertainty.<sup>69</sup>

To perform this calculation, the Staff first applied the Exposure Index correction factor to SAMA 77’s total benefit of \$6.41 million, by multiplying \$6.41 million by 1.32.<sup>70</sup> The resulting benefit was \$8.46 million.<sup>71</sup> The estimated SAMA cost for SAMA 77 is \$15 million.<sup>72</sup> Therefore, applying the Exposure Index correction factor alone (as NextEra suggests) would not make SAMA 77 potentially cost-beneficial because the benefit of \$8.46 million is less than the estimated cost of \$15 million.

Next, the Staff applied the uncertainty factor to the benefit (with the Exposure Index correction factor) by multiplying \$8.46 million by 2.35.<sup>73</sup> This resulted in a new total benefit of \$19.9 million.<sup>74</sup> Thus, the Staff identified SAMA 77 as potentially cost-beneficial after accounting for uncertainty because \$19.9 million exceeds the estimated SAMA cost of \$15 million.<sup>75</sup> When both the Exposure Index correction factor and uncertainty factor were applied to

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<sup>66</sup> Hanna & O’Kula Joint Decl. at ¶ 131; NextEra’s Statement of Material Facts at ¶¶ 10, 11.

<sup>67</sup> Total benefit includes internal and external risk factors including a 2.1 seismic multiplier. It does not account for uncertainty. NextEra uses the terms “SAMA’s total benefit value (with seismic multiplier)” and “SAMA’s best estimate (with seismic multiplier)” interchangeably to describe the total benefit. See Hanna & O’Kula Joint Decl. at ¶ 131; NextEra’s Statement of Material Facts at ¶¶ 10, 11.

<sup>68</sup> Hanna & O’Kula Joint Decl. at ¶ 131; NextEra’s Statement of Material Facts at ¶¶ 10, 11.

<sup>69</sup> Parillo Aff. at ¶ 21, Table A.

<sup>70</sup> *Id.*

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

all of the SAMAs listed in Table 1 of NextEra's March 2012 SAMA supplement (SBK-L-12053), the Staff identified some additional SAMAs as potentially cost-beneficial.<sup>76</sup>

At the summary disposition stage, the Commission has indicated that reasonableness turns on whether the moving party has demonstrated that use of a different methodology would not result in the identification of additional potentially cost-beneficial SAMAs.<sup>77</sup> In its motion, NextEra did not address or consider uncertainty in its cost-benefit analysis and provides no explanation for why uncertainty was not considered or what impact using this alternate meteorological model might have on the overall uncertainty of the SAMA analysis.<sup>78</sup> The Staff, based on NextEra's analysis in their motion, identified additional potentially cost-beneficial SAMAs after accounting for uncertainty.<sup>79</sup> Thus, the Staff submits that NextEra has not demonstrated that it is entitled to judgment as a matter of law because NextEra has not shown that use of a different methodology would not result in the identification of additional potentially cost-beneficial SAMAs. Accordingly, the Staff cannot support NextEra's Motion at this time.

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<sup>76</sup> Parillo Aff. at ¶¶ 14-21. See Parillo Aff. at ¶ 21, Table A, for a list of the potentially cost beneficial SAMAs.

<sup>77</sup> *Pilgrim*, CLI-09-11, 69 NRC at 533 (stating that the "ultimate concern" is whether any additional SAMA should have been identified as potentially cost-beneficial).

<sup>78</sup> The Staff notes that an uncertainty analysis was performed by NextEra in earlier submissions, but was not performed for purposes of NextEra's Motion. Parillo Aff. at ¶¶ 8, 10, 13.

<sup>79</sup> Parillo Aff. at ¶¶ 14-21.

CONCLUSION

For the foregoing reasons, NextEra's motion for summary disposition of Contention 4D should be denied.

Respectfully submitted,

**/Signed (electronically) by/**

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Date of signature: 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) )

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing: NRC Staff Answer to NextEra's Motion for Summary Disposition of Friends of the Coast/New England Coalition Contention 4D (SAMA Analysis Atmospheric Modeling); NRC Staff Response to NextEra's Statement of Material Facts for Contention 4D (SAMA Analysis Atmospheric Modeling); Affidavit of John G. Parillo Concerning NextEra's Motion for Summary Disposition of Friends of the Coast/New England Coalition Contention 4D (SAMA Analysis Atmospheric Modeling); and Staff Attachments 4D-A, 4D-B, and 4D-C; have been served over the Electronic Information Exchange, the NRC's E-Filing System, this 15th day of July, 2013.

**/Signed (electronically) by/**

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