

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

In the Matter of
FPL Energy Seabrook, LLC (NextEra, Inc)
(Seabrook Station, Unit 1 – License Renewal Application)

November 22, 2010

Docket No. 50-443

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**

Raymond Shadis
Pro se Representative
Post Office Box 98
Edgecomb, Maine 04556

TABLE OF CONTENTS

INTRODUCTION

I. FRIENDS OF THE COAST/NEC (FRIENDS/NEC) HAS STANDING.

II. FRIENDS OF THE COAST/NEC (FRIENDS/NEC) SUBMITS ADMISSIBLE CONTENTIONS

A. CONTENTION ONE - INACCESSIBLE CABLES

Safety Contention Supported by Fact and Expert Testimony

B. CONTENTION TWO- TRANSFORMERS

Safety Contention Supported by Evidence and Expert Testimony

C. CONTENTION THREE – BURIED, BELOW-GROUND, OR HARD-TO- ACCESS PIPING

A Safety-related Contention Supported by Evidence and Expert Testimony

D. CONTENTION FOUR- SEVERE ACCIDENT COAST UNDERESTIMATED

An Environmentally-related Contention Supported by Evidence.

IV. CONCLUSION

Now comes Friends of the Coast/New England Coalition (herein after, “Friends/NEC”) through its *pro se* representative, Raymond Shadis, to make Reply to the Answers of NextEra and NRC Staff to the Friends/NEC Petition for Leave to Intervene in the above captioned matter.

I. FRIENDS/NEC HAS STANDING. PETITION WAS TIMELY FILED.

NRC Staff and NextEra have filed very different accounts of Friends/NEC standing.

NRC Staff expresses no reservations regarding Friends/NEC interests or the interests of Friends/NEC members as reflected in members declarations requesting Friends/NEC representation of their interests and attached to the Petition for Leave to Intervene.

NRC Staff allows that the Friends/NEC Petition was timely filed.¹

Entergy, in contrast to NRC Staff complains that (A) electronically filed member declarations did not display handwritten signatures, but only typewritten signatures,, and (B) that Friends//NEC service of its Petition was not provided to NextEra until some minutes after midnight, and that electronic submission of the Petition was not effected, with the help of NRC electronic submissions assistance, until early the next day. NextEra complains that NEC should have anticipated the possibility of technical difficulties with NRC’s new electronic filing system and not waited until the eleventh hour to file.

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

A. Friends/NEC replies, with respect NextEra’s complaint that were no handwritten signatures to declarations, that NEC was unaware of any instruction from NRC on how to transmit handwritten signatures in the electronic submissions system. NEC/Friends, lacking a scanner with which to transfer hardcopy signatures to an electronic image file, advised the NRC Office of the Secretary and Rulemaking and Adjudications Staff in its certificate of service² that NEC would, “Should the Commission require it for the record [promptly provide via First Class Mail] hardcopies of declarations bearing hand signatures of . . . expert witness and represented members.”

Friends/NEC apologizes for its unfamiliarity with the details of the requirements in 10 C.F.R. § 2.304. On examination, it is apparent that signatures in handwriting are not required of affiants, but that “typed signature blocks of affiants” must include, “ the phrase "Executed in Accord with 10 CFR 2.304(d)" or its equivalent typed on the signature line as well as the name and the capacity of the person signing . . . etc.” 10 C.F.R. § 2.304. d (ii).

Friends/NEC , as a simple oversight, did not include the specific phrase.

Notwithstanding these defects, the Office of the Secretary placed the Friends/NEC Petition for Leave to Intervene and its attached declarations in the docket signifying their acceptance for filing under 10 C.F.R. § 2.304 (f)

Acceptance for filing. Any document that fails to conform to the requirements of this section may be refused acceptance for filing by the Secretary or the presiding officer and may be returned with an indication of the reason for nonacceptance. Any document that is not accepted for filing will not be entered on the Commission's docket.

With hopes that it will ease NextEra’s uncertainty as to the authenticity of the Friends/NEC members declarations, Friends/NEC has taken the originals to a computer service; had them scanned to pdf files, and now attaches the pdf images of the originals

² ibid

to this reply filing³. Friends/NEC hopes that will suffice, but if the Board finds the discrepancies with 10 C.F.R. § 2.304 insufferable, then Friends/NEC begs an opportunity to remedy them with a corrected filing of member's declarations.

B. As to timeliness, Friends/NEC made a diligent, repeated, good faith effort to electronically file on the due date; only to be frustrated by a system malfunction. Friends/NEC then promptly (as soon as files and addresses could be loaded into its e-mail system) provided service to all parties at 12:14 AM , October 21, 2010; thus ensuring that no party was unduly disadvantaged.

NRC electronic submissions support staff and Friends/NEC worked together for close to two hours on the morning of October 21, 2010 to remedy the electronic issues preventing transmission and successfully completed Friends/NEC's electronic filing. On contacting the NRC rulemaking and Adjudications Staff, Friends/NEC was advised that NRC had accepted the filing. Friends/NEC, in an abundance of caution, nonetheless then filed a post facto request for extension of time with the Secretary of the Commission.

NextEra asserts that Friends/NEC [having already taken instruction from NRC's electronic filings help staff] acted irresponsibly in assuming that NRC's electronic submissions system would function as advertised, "By waiting until 10 p.m. on the day the Petition was due to be filed, Petitioners assumed the risk that they may encounter technical difficulties that would require the assistance of the NRC's help desk." The flip side of NextEra's insistence that a filing deadline is a filing deadline is that 11:59 is not

³ All attached member declarations are provided with a handwritten signature, except that of Friends member, Deborah Breen , who provided a hardcopy declaration to Friends/NEC with a typed cursive signature. If the Board requires it in order that Deborah Breen may be listed among those members represented, Friends/NEC will obtain and provide a declaration from Deborah Breen with a handwritten signature..

10 p.m. and it is more certainly not 8p.m.

NextEra's arguments with respect to the timeliness of the Friends/NEC Petition are spurious and extravagant; and should be rejected.

II. FRIENDS OF THE COAST/NEC (FRIENDS/NEC) SUBMITS ADMISSIBLE CONTENTIONS

As a general preface to replying to both NRC Staff and NextEra Answers with respect to the proposed Contentions, Friend/NEC respectfully requests the Board's consideration of an extensive history of opinions and decisions both at the ASLB and the Commission level that make it very clear that contentions are not to be litigated on their merits at this preliminary stage of the proceedings.

Both NRC Staff and NextEra have filed detailed Answers that attempt to do just that: litigate the Friends/NEC contentions on their technical merits.

At this point, Friends/NEC is , reasonably, unprepared to try its contentions against what are, all but for the label, motions for summary disposition.

NRC Staff and NextEra have focused heavily, as they would in a motion for summary disposition, on the assertion that a legitimate material dispute does not exist between the applicant and Friends/NEC. A key point at which their arguments fail is that none of Friends/NEC proposed contentions are contentions of omission. Friends/NEC does not claim that NextEra has no Severe Accident Mitigation Alternatives ("SAMA") analysis, but rather that it is inadequate, inaccurate, non-conservative to the extent that it ultimately has a negative effect on the assurance of public health and safety.

Friends/NEC has provided a number of examples, supported by specific references to technical documents and scientific papers, to show that NextEra's SAMA analysis is inadequate, inaccurate, non-conservative , and non-protective.

To argue counter the merits and interpretation of Friends/NEC references without showing conclusively how they are irrelevant, or immaterial, or devoid of substance, or how Friends/NEC and NextEra are in substantial agreement, is only to drive home the point that a substantive, material dispute exists. And such a dispute, if it can be shown to be within the scope of what the Board is authorized to review, is appropriate for litigation under NRC regulation through a Subpart L hearing.

If the contention is accepted for a hearing, then NextEra may, assuming the burden of proof, move for summary disposition; not now.

With respect to Friends/NEC's proposed contentions on inaccessible cables, transformers, and buried below-ground, or hard-to-access piping, Friends/NEC likewise asserts that NextEra's time limited aging analysis ("TLAA") and/or aging management programs ("AMP") are inadequate; and that adequate analyses or programs must be developed before realistic and credible assurance of public health and safety for the proposed period of extended ("PEO") operation can be obtained.

Even in the case of transformers, where NextEra has no TLAA or AMP, Friends/NEC does not argue merely that the LRA, has no plan; should include a plan, but rather that it should include an adequate plan; one that can anticipate and prevent transformer/transformer equipment failures. Metaphorically speaking, Friends/NEC is not merely pointing to a pothole (to be filled with any sort of fill, detritus, etc), but to a lack in a given location of durable, safe road material. Friends/NEC would want the pothole filled not with just any sort of fill, but with certifiably durable, safe road material.

In the case of Friends/NEC proposed contentions, it is asserted that there is unwarranted risk to the public inherent in the referenced sections of the LRA, and the

remedy is, by conservative analysis and planning, to restore full and wholesome assurance of public health and safety.⁴

Until assurance of public health and safety is restored on the topics of Friends/NEC proposed contentions in the LRA, Friends/NEC is in valid material dispute with NextEra.⁵

A. CONTENTION ONE - INACCESSIBLE CABLES

Safety Contention Supported by Fact and Expert Testimony

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.⁶

Next Era complains that Contention 1 is copied, nearly verbatim, from New York State Contention 6, which challenged the *Indian Point* LRA.¹³ See New York State Notice of Intention to Participate and Petition to Intervene (Nov. 30, 2007) at 92-100

⁴ Assurance of Public Health and Safety is implicit in the requirement that activities with the PEO are conducted within the Current Licensing Basis (“CLB”). It is assumed that the CLB is in order. The Hearing Notice describes the scope of the safety portion of this proceeding by describing the findings the NRC must make prior to issuance of a renewed license:

In accordance with 10 CFR 54.29, the NRC may issue a renewed license on the basis of its review if it finds that actions have been identified and have been or will be taken with respect to: (1) Managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified as requiring aging management review, and (2) time-limited aging analyses that have been identified as requiring review, such that there is reasonable assurance that the activities authorized by the renewed licens will continue to be conducted in accordance with the current licensing basis (CLB) and that any changes made to the plant’s CLB will comply with the Act and the Commission’s regulations.

{Emphasis Added]

Hearing Notice, 75 Fed. Reg. at 42,463.

⁵ Each contention must “provide sufficient information to show that a genuine dispute exists with the applicant . . . on a material issue of law or fact.” 10 C.F.R. § 2.309 (f)(1)(vi).

⁶ See, footnote 4 above, re: assurance of public health and safety.

(ADAMS Accession No. ML073400187) (“New York Petition”).

NextEra asserts, without basis or supporting evidence that,

“ Instead of performing an independent review of the Seabrook LRA, Petitioners have simply removed the references to the *Indian Point* LRA from New York State Contention 6 and added a single block quotation from the Seabrook LRA. *See* Petition at 14. As a result, Petitioners fail to provide sufficient information to demonstrate the existence of a genuine dispute with this particular LRA in contravention of 10 C.F.R. § 2.309(f)(1)(vi), which requires petitioners to review the application at issue and identify specific deficiencies.”

Friends/NEC objects to this libelous twaddle. Friends/NEC and its expert reviewed NextEra’s voluminous and somewhat vacuous tome of an LRA until we were bug-eyed. What Friends/NEC did not see and what Friends/NEC did complain about in its Petition was the lack of an AMP that contained elements for non-qualified safety-related cables of any voltage that would preclude or prevent wetting and submergence. Friends/NEC saw no plan for timely and orderly replacement or relocation of non-qualified cables susceptible to submergence or periodic wetting.

NextEra alleges that Contention 1 also suffers flaw of failing to include “a concise statement of alleged facts or expert opinion in support of its claims. 10 C.F.R. § 2.309(f)(1)(v). This also is patently untrue. Friends/NEC ‘s Contention is in fact followed in the Petition with a concise statement of the facts and supported by the declaration of Paul Blanch. In fact, the Petition , pages 9-19 quotes at length from the declaration of its expert in setting forth a concise, specific, particularized set of claims regarding the Seabrook LRA and further suggesting at Page 19, specific remedies.

Next Era says, “The only support offered for Contention 1 is (1) an unsigned declaration of Paul Blanch, a former nuclear industry engineer, that is not cited anywhere in the Petition.[Not true. In its opening comments on Friends/NEC standing , NextEra

comments that Paul Blanch signed his declaration by the same method as the member affiants.] and (2) "...with respect to this Contention, does not address the Seabrook LRA. *See* Pet. at 10-20.

NextEra complains further, "Indeed, Mr. Blanch does not even claim to have read the Seabrook LRA. *See* Blanch Decl. at 4 ("have reviewed Vermont Yankee's License Renewal Application and the subsequent submittals by Entergy to renew the operating licenses for Indian Point Unit 2 and Unit 3. I have also reviewed pertinent sections of the NRC's Safety Evaluation Report [for Vermont Yankee] dated May 2008 (NUREG 1907)").

NextEra then attempts to capitalize on what is obviously an editing error; Mr. Blanch having served as an expert witness on a nearly identical topic in both the Vermont Yankee and Indian Point Proceedings. NextEra chortles, "Perhaps because he has not read the Seabrook LRA, Mr. Blanch claims, incorrectly, that his "diligent review of the LRA and the NRC Staff's SER finds **no such** [emphasis added] Time Limited Aging Analysis (TLAA) or Aging Management Program (AMP)" for electrical cables." *Id.* at 7.

First, of course, the Friends/NEC witness has read the LRA and has so declared. The key here of course, is the simple qualifier, "no such" meaning, if taken in context, no TLAA's and AMPs for ALL voltages, which take into consideration mitigating or preventative measures for non-qualified cables susceptible to submergence.

The ASLBP in the Vermont Yankee LRA makes a similar error. From the Board's Order of November 11, 2010, For example, the Board takes a shot at NEC witness Blanch as follows:

At one point, NEC seems to be arguing that the LRA contains no AMP that addresses the subject of age related degradation of safety-related electrical

cables. Blanch Declaration at 8 (“A diligent review of the LRA . . . finds no such [TLAA or AMP]”). This is patently incorrect because the LRA contains an AMP for such cables. Entergy Answer at 27, Entergy Declaration at 1-3. Thus, we do not examine this issue. Likewise, given that the LRA contains an AMP, there is no need for a TLAA on the same subject. See 10 C.F.R. § 54.21(c)(1)(i)-(iii). Thus, we do not need to analyze the TLAA prong of Contention 7. Order at p.21, note 18

In fact the Blanch (Vermont Yankee) declaration at 22 is preceded by a definition of the cables in question at 21.

Mr. Blanch first says at 21,

Based on my review of 10 C.F.R. § 54.21(a)(1), and 10 CFR § 54.4, electrical cables are included within the scope of § 10 CFR 54, **irrespective of the design of or the applied voltage.** [Emphasis added]

And then says at 22,

A diligent review of the LRA and the NRC Staff’s SER finds **no such** [Emphasis added] Time Limited Aging Analysis (TLAA) or Aging Management Program (AMP); thus I am led to conclude that the LRA is inaccurate and incomplete with respect to TLAA or AMP of below-grade, buried, underground, or otherwise inaccessible safety-related electrical cable.

Indeed **no such** TLAA or AMP for cables **irrespective of the design of or the applied voltage** exists in the LRA either at Vermont Yankee or at Seabrook. Albeit it should be noted that NextEra has recently submitted an AMP for Low Voltage Cables, in part authenticating Friends/NEC concerns, as expressed in Contention 1. NextEra holds that this LRA amendment moots the concerns or issues raised in Contention 1. It most emphatically does not. No cable AMP in the Seabrook LRA makes any provision for mitigating or preventing the acceleration of aging due to submergence or wetting.

Mr. Blanch’s declaration directly addresses the relevant AMPs in the Seabrook LRA, and further directly supports Friends/NEC claims in the Contention itself pertaining to the Non-EQ Inaccessible Medium-Voltage Cables Program.

NEC's claim that it "defies engineering logic" to limit this AMP to cable subjected to "system voltage more than 25 percent of the time."¹⁵ Pet. at 14 ¶13 should also be to defy regulatory logic. Plainly, dedicated emergency power and control cables are energized less than 25% of the time. All cables must be able to perform their safety function regardless of how often they are energized, what is the safety mindedness or the engineering logic that allows bypass of an aging management regimen based on how infrequently the cables are energized? There is none.

Likewise, NEC provides no support whatsoever for questioning the two-year *maximum* interval for inspecting for water collection. Pet. at 15 ¶17. Similarly, NEC provides no support for its claim that "[t]here are no testing methods available to adequately assure the submerged or previously submerged cables will perform their [intended] functions. . ." Pet. at 14 ¶15. Friends/NEC relies on simple logic and the disturbing absence in the LRA of any physical or engineering justification for leaving non-qualified safety-related cables potentially submerged for a year or two; and with no plan in sight to remove them to a less vulnerable location or to replace them with appropriate submersible-rated cables.

NextEra asserts that Friends/NEC fails to raise a genuine dispute with the LRA. Much of Contention 1 either expresses agreement with the LRA or simply mischaracterizes it. To the contrary, the differences made plain in the Petition and supporting declaration, as in the foregoing discussion in this Reply, are sufficient to demonstrate the existence of *genuine* dispute with the applicant. 10 C.F.R. § 2.309(f)(1)(vi).

NextEra cites ." *Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-10-19, 72 NRC ___, ___ (slip op. at 25-26). In fact, the Board reasoned, "the potential for such wetting or

submergence seems to be assumed, otherwise there would be no need for an AMP to manage it.” *Id.* at 26.

As a result, NextEra says, “Petitioners’ claim that cables may become submerged is in agreement with the LRA and so does not demonstrate the existence of a genuine dispute with the applicant. 10 C.F.R. § 2.309(f)(1)(vi).”

No, we all know they are going to get wet, the difference is that the licensee and, apparently NRC Staff, plan to do nothing about it in a timely and pro-active way.

According to Petitioners says NextEra, “[e]xperience indicates that not all inaccessible cables are capable of inspection via ‘manholes,’” which “leaves open the questions of how many cycles of wetting and drying (and freezing?) the insulation of a given cable may be expected to undergo in two years, and the potential effect on operability of the anticipated wet/dry cycles.”

Petitioners, says NextEra, ignore the contents of the LRA, which explains that the program does not rely simply on manhole inspections, but also aims to prevent submergence by draining water. . The LRA, says NextEra, also explains that more frequent inspections will be undertaken, if necessary. Draining water? When and on what signal? Is this absolute protection against episodic and periodic submergence? How so? NextEra did not refer to those cable sections which are not in manholes but nonetheless susceptible to submergence, as did Friends/NEC (see above). Why not? What is the plan? Rather than to put away the dispute, NextEra’s argument serves to enlarge it and so fails to show that Friends/NEC’s a genuine dispute with the applicant is resolved

NextEra claims that because the applicant's cables AMP is consistent with GALL, Contention 1 fails to raise a material issue, that is, one that can be litigated before the ASLB. NUREGS are guidance and not regulation. NRC is, in effect, endorsing the Seabrook plant's non-conformance with safety regulation into a somewhat distant extended period of operation.

10 C.F.R. § 50 *Criterion 4--Environmental and dynamic effects design bases. **Structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation,** maintenance, testing, and postulated accidents, including loss-of-coolant accidents. These structures, systems, and components shall be appropriately protected against dynamic effects, including the effects of missiles, pipe whipping, and discharging fluids, that may result from equipment failures and from events and conditions outside the nuclear power unit. .. [Emphasis added]*

In its Answer, NextEra ducks the fact that safety-related cables at Seabrook are employed are in service for which they are not rated by stating that EQ is not required for cables that will not experience harsh accident environments (conditions). Further, NextEra according to its LRA will not take preventative or pro-active steps to prevent wetting or submergence. One or two year intervals between inspections could hardly be called a robust program of surveillance considering the safety significance of the issue.

Moreover, the affected cables could be called upon to feed power, controls, or signals to or from equipment directly affected by severe accident conditions; potential increasing "normal" loads on the cables. Petitioners appropriately reiterate their claim that "[t]here are no testing methods available to adequately assure the submerged or previously submerged cables will perform their functions for the duration of the postulated accident." Pet. at 14 ¶15. The Blanch Declaration asserts that:

a cable circuit with undetected damaged or degraded insulation could pass an in-service functional test, but still fail unexpectedly when *called upon to operate under anticipated environmental conditions or the severe stresses*

encountered during a design basis event (i.e., fully loaded equipment, more extreme environmental conditions, extended operation in a heavily loaded state).
[Emphasis Added]

Finally, the applicant justifies the application for addressing electrical cables as a commodity group and not identifying the location for each relevant cable “as the GALL Report explains, “[e]lectrical cables and their required terminations (i.e., connections) are typically reviewed as a single commodity”. Without drawings however, “reviewers cannot identify the location, rating, and purpose of cables that may be subjected to moisture and submergence because that information is otherwise not readily available. Petitioners provide no support for their assertion that required information

⁸ This discussion is included with Mr. Blanch’s discussion of transformers, but refers to cables and appears to be misplaced.

⁷ The basis for including structures or components in a single commodity group can be such characteristics as similar design, similar materials of construction, similar aging management practices and similar environments. Also, the License Renewal SRP explains that applicants may use a “plant spaces” approach to determine the applicable environment for electrical components:

Under the “plant spaces” approach, an applicant would identify all “passive,” “long-lived” electrical equipment within a specified plant space as subject to an AMR, regardless of whether these components perform any intended functions. For example, an applicant could identify all “passive,” “long-lived” electrical equipment located within the turbine building (“plant space”) to be subject to an AMR for license renewal. In the subsequent AMR, the applicant would evaluate the environment of the turbine building to determine the appropriate aging management activities for this equipment.

SRP at 2.5.1. Therefore, aging effects for cables can be reviewed without identifying the precise location of every cable in the LRA.

is missing. The information requested by the Standard Review Plan for license renewals is provided in the LRA.²⁸

Petitioners have failed to demonstrate that their concerns related to the aging

management of inaccessible cables not subject to EQ requirements of 10 C.F.R. § 50.49 are material to the findings the NRC must make.

NextEra claims that under 10 C.F.R. § 2.309(f)(1)(iv), Contention 1 raises issues beyond the scope of license renewal. NextEra then quotes from 10 C.F.R. § 54.4.

Friends/NEC has added emphasis to mark to non-EQ cables with which Contention 1 is concerned as subject to AMR and ASLB Review.

In accordance with 10 C.F.R. § 54.4, the scoping and screening of electrical systems is described in LRA Section 2.5 (Scoping and Screening Results: Electrical and Instrumentation and Control (I&C) Systems/Commodity Groups), which discusses components subject to aging management review. All electrical insulated cables and connections not subject to the EQ requirements of 10 CFR 50.49 are included in a single commodity group that is within the scope of license renewal (LRA at 2.5-3) and is subject to an aging management review (LRA at 2.5-6). This commodity group includes **“non-EQ cables and connections, connectors, electrical splices, fuse holders, terminal blocks, power cables, control cables, instrument cables, insulated cables and communication cables.”** LRA at 2.5-6. LRA Table 2.5.4-1 explains that these components have an intended function of “electrical continuity.” LRA at 2.5-7. LRA Table 3.6.2-1 provides the results of the aging management review for these cables, indicates that the aging effect requiring management is “[l]ocalized damage and breakdown of insulation leading to electrical failure,” and explains that the aging effect will be managed by the Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements program (B.2. 1.34). LRA at 3.6- 15.

Finally NextEra complains that petitioners have “raised a number of current operational issues that are not within the scope of this license renewal proceeding.”

For example, Petitioners claim that “[c]ables experiencing periodic submergence must be replaced with cables designed to operate in the environment to which they may be exposed,” citing General Design Criteria (“GDC”) III and IV and NUREG-7000. Pet. at 15 ¶16.²⁹ Similarly, Petitioners claim that “[m]ost of the inaccessible cables at Seabrook are not specified to operate in a submerged environment therefore operation of these cables is a clear violation of many NRC

regulations including 10 CFR 50 Appendix A and B.” Pet. at 14 ¶14. These unfounded assertions that Seabrook is not in compliance with its CLB do not raise aging management issues, but instead present matters relevant to current operations that are beyond the scope of this license renewal proceeding. *See* 10 C.F.R. § 54.30(b).

Friends/NEC does not intend to attempt to litigate and find remedy for any alleged current non-compliance with the CLB; Friends/NEC is concerned that non-compliance is by omission, default, intent or neglect embodied for the PEO in the LRA. At this juncture, Friends/NEC intends to address current issues through designated for a , such as 10 C.F.R.2.206

NextEra claims that,

to the extent that Petitioners raise issues that will be covered by GALL Rev. 2 and the Board determines that those issues are otherwise admissible, Petitioners’ Contention has been mooted by NextEra’s recent supplement to its LRA to incorporate a revised AMP in Appendix B.2.1.34, titled “Inaccessible Power Cables Not Subject to 10 CFR 50.49 EQ Requirements” (“Non-EQ Inaccessible Power Cables Program”). Petitioners challenge the original AMP, which is consistent with GALL Rev. 1, because it defined significant voltage exposure “as being subjected to system voltage for more than 25% of the time.” Pet. at 14. The new program eliminates this 25% threshold and applies to cables exposed to significant moisture regardless of the frequency of energization, thus making this issue moot.

LRA Supplement, Encl. 2 at 6. Where “a contention is ‘superseded by the subsequent issuance of licensing-related documents’...the contention must be disposed of **or modified.**” *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382 (2002) (footnote omitted). [Emphasis Added]

Friends/NEC takes this statement by NextEra as an admission that modifications to the AMP for cables as articulated by Friends/NEC has been recognized by NextEra as a necessary plus for public safety. Until Friends/NEC has had an opportunity to review the LRA amendment, it is unclear which issues raised in Contention 1 have been entirely mooted; if any.

In the meanwhile, Friends/NEC will proceed with advocacy of its contention as written.

B. CONTENTION TWO- TRANSFORMERS

Safety Contention Supported by Evidence and Expert Testimony

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 to plant safety

NextEra asserts that Contention 2 is “inadmissible because it is not supported by any basis or support indicating a genuine, material dispute with the applicant.” That, is statement is patently untrue on simple comparison with Friends/NEC’s October 20, 2010 Petition. NEC’s expert, Mr. Paul Blanch, an electrical engineer with impeccable credentials and 40 years of experience in nuclear generation, cites fact, NRC regulation, and additional documentation in his supporting declaration. Next Era complains that Friends/NEC has,

... taken a contention that was admitted in the *Indian Point* proceeding and copied it nearly verbatim, without performing a sufficient review of the Seabrook LRA, resulting in quotations in the Petition with no relationship to the Seabrook LRA.³² See New York State Contention 8, New York State Petition at 103-05.

There are three points to be made here:

(1) NextEra does not explain why a valid technical argument must be recast by its author for each time it is deployed. Certainly there is no regulatory basis for the complaint and none offered by NextEra.

(2) NextEra does not (and should) point out that the “nearly verbatim” contention to which it refers was accepted for litigation in the Indian Point LRA proceeding and survived a Motion for Summary Disposition as well.

(3) NextEra also assumes and complains that Friends/NEC did perform, “a

sufficient review of the Seabrook LRA. “ [Emphasis in the original] Friends/NEC will not quibble over what “sufficient” means in this context, but NextEra fails to point out how a “sufficient” review as it imagines it would have revealed anything more or better in the way of a TLAA or AMP. Of course, Friends/NEC editing errors aside, nothing plus nothing equals nothing.

In contradiction to Friends/NEC’s Petition and the Declaration of Paul M. Blanch, Next Era then asserts that Transformers are Active Components Not Subject to Aging Management Review, as opposed to Passive components, which are subject to Aging Management Review.

NextEra then appropriately adds”

10 C.F.R. § 54.4 defines the plant SSCs within the scope of the NRC’s license renewal rule, but 10 C.F.R. § 54.21(a)(1) then limits the structures and components subject to an aging management review [“AMR”] to those structures and components “that perform an intended function . . . without moving parts or without a change in configuration or properties.”³³ These are considered “passive” components. *Pilgrim*, CLI-10-14, 71 NRC at ___ (slip op. at 5).

NextEra, citing some NRC staff opinions and guidance⁷, then takes the position that transformers are an active component because they change “properties” based, presumably, on the amount of electricity going through them; therefore NextEra says, they are not subject to AMR. If this thesis had a corollary with respect to high energy piping, vital electrical cables, or even the reactor pressure vessel, and so on, there would be little left that is subject to AMR. Following and applying the transformer “properties” thesis; high energy piping is not passive because it changes temperature and size and it vibrates as steam courses through it,

⁷ Guidance is neither regulation nor is it unassailable by intervenors.

electrical cables of course heat up and change temperature and diameter as a function of electrical resistance, and the reactor vessel also changes temperature size and shape. As in Alice's Wonderland; in the guidance and opinions cited by NextEra, a word means what you want it to mean.

In any case, the Indian Point LRA ASLBP decided that Mr. Blanch's testimony raised sufficient credible professional dispute on the active/passive question to preserve the "nearly verbatim" contention for litigation.⁸

Because transformers are active components, NextEra says Petitioners have failed to show that their claim that NextEra's LRA omitted an AMP for transformers is a material issue, i.e., one whose resolution "*would make a difference in the outcome* of the licensing proceeding." 54 Fed. Reg. at 33,172.

Conversely then, if the Board finds that transformers can be considered passive components, then the Board, as at Indian Point, must find that an AMR for transformers is a material issue and resolution of the issue would make a difference in the outcome of the proceeding.

NextEra asks how a transformer's intended function could be compromised by the lack of an AMP, because transformer performance can be monitored and so transformers do not require aging management. NextEra does cite examples of age-related failure phenomena that would be intercepted by performance monitoring or how such monitoring could anticipate catastrophic failure of insulation for example.

C. CONTENTION THREE – BURIED, BELOW-GROUND, OR HARD-TO-ACCESS PIPING

A Safety-related Contention Supported by Evidence and Expert Testimony

⁸ ADAMS – ML093070521- Order-August 28, 2009, Docket 50-247-LR, Docket 50-286-LR

In Contention 3, Petitioners assert:

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

Pet. at 22-23 ¶1.

Since Friends/NEC Petition was filed, NextEra has filed a number of amendments to its LRA , including changes to the piping and tanks AMPs. Although NextEra claims that these amendments render much of this contention moot, Friends/NEC has yet to find an adequate opportunity to review the supplements or the NRC Staff responses to those supplements, and cannot therefore now say whether they have indeed mooted any portion of Friends/NEC Contention 3. Friends/NEC notes, as with Contention 1, where a question of mootedness is raised:

Where “a contention is ‘superseded by the subsequent issuance of licensing-related documents’...the contention must be disposed of **or modified.**” *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382 (2002) (footnote omitted). [Emphasis Added]

Friends/NEC notes also that a similar contention alleging the need to prevent leakage of radioactive liquids from buried piping was admitted in the *Pilgrim* proceeding (LBP-06-23, 64 NRC at 3 10-15)..

NextEra asserts that Petitioners have raised issues that are beyond the scope of a license renewal proceeding, contrary to § 2.309(f)(1)(iv). To the contrary, Friends/NEC

has provided testimony and cited to regulation and guidance that include appropriate aging management for buried, below-grade, and hard-to-access pipes and tanks. (see Blanch Declaration and pleading generally).

NextEra asserts that Friends/NEC has raised issues that are not material, contrary to § 2.309(f)(1)(iv). This is untrue, NEC has raised issues upon which the Board must deliberate and find resolution before it can find that NextEra Seabrook gives reasonable assurance that it will operate within its CLB during the PEO.

Friends/NEC has provided more than sufficient information through testimony and citations to technical documents and NRC regulation to show that a genuine dispute exists with regard to a material issue of law or fact, in compliance with § 2.309(f)(1)(vi).

Therefore, until Petitioners have been accorded an opportunity to review NextEra's new amendments, Friends/NEC Contention 3 must be adjudicated in its entirety.

D. CONTENTION FOUR- SEVERE ACCIDENT COAST UNDERESTIMATED

An Environmentally-related Contention Supported by Evidence.

RESPONSE TO NEXTERA'S ANSWER OPPOSING THE PETITION TO INTERVENE AND REQUEST FOR HEARING OF FRIENDS OF THE COAST AND THE NEW ENGLAND COALITION FILED NOVEMBER 15, 2010

In Contention 4, Petitioners assert that:

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.

I. INTRODUCTION

NextEra and Staff's objection to Friends of the Coast ("Friends/NEC" herein) file nearly identical responses; therefore Petitioner's comments made may be applied to NRC Staff's comments, as appropriate. Section I below is virtually identical in both responses.

NextEra and the Staff appear to have forgotten at least three basic principles.

First, a proceeding, even one before this Board, has at least three distinct phases: Pleading, Summary Disposition, and Hearing.

The issue at the Pleading stage is whether, taking all of the facts pleaded as true, Intervenor's contentions provide sufficient alleged factual or legal bases; or, as said in the Federal Rules of Civil Procedure, state a claim upon which relief can be granted. "Intervenors are not asked to prove their case at the contention stage, or to provide an exhaustive list of possible bases, but simply to provide sufficient alleged factual or legal bases to support the contention, and to do so at the outset." (NRC Staff Practice and Procedure Digest ("NRC Digest"), Prehearing Matters, pg. 16). "Commission Rules of Practice make no provision for motions for orders of dismissal for failing to state a legal claim. However, the Federal Rules of Civil Procedure do in Rule 12(b)(6), and Licensing Boards occasionally look to federal cases interpreting that rule for guidance. In the consideration of such dismissal motions, which are not generally viewed favorably by the courts, all factual allegations of the complaint are to be considered true and to be read in a light most favorable to the nonmoving party. Sequoyah Fuels Corp. and General Atomics (Gore, Oklahoma Site Decontamination and Decommissioning Funding), LBP-94-17, 39 NRC 359, 365 (1994)" (NRC Digest, Hearings, 80)

Similarly, the issue at this stage is not whether summary disposition should be granted. There are plainly material facts in dispute, and summary disposition is proper only after giving the Intervenor the opportunity to present all pertinent material. Further, even after discovery is completed, the material facts must be undisputed." "If there is any possibility that a litigable issue of fact exists or any doubt as to whether the parties should have been permitted or required to proceed further, the motion must be denied." (NRC Digest, Hearings 64, 65, underlining added; see also, 10 C.F.R. § 2.710(d)(2)).

Even more clearly, the issue now before the Board is not whether, after both discovery and hearing, all of those disputed facts should be decided in favor of the industry and the NRC. And it is the licensee, not the Intervenor that has the burden of

proving that it is entitled to its license extension. (See NRC Digest, Hearings, 82-83)

Second, NRC “practice” is not a law or rule, and is open to challenge on numerous grounds: e.g., it does not provide the required protection to the public, it is not “reasonable,” and that it is not supported by proved facts applicable not in the past but to whether, in 2010, Seabrook should be relicensed. Like NRC NUREGs and Regulatory Guidance documents are routine policy pronouncements that do not carry the binding effect of regulations. International Uranium (USA) Corp., CLI-00-1,51 NRC 9,19 (2000); Southern Nuclear Operating Co. (Early Site Permit for Vogtle ESP Site), LBP-07-3,65 NRC 237,254(2007). PHM 105. “Adjudicatory decisions must be supported by evidence properly in the record. Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2), ALAB-580, 11 NRC 227, 230 (1980); Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-836, 23 NRC 479, 499 n.33 (1986).

Third, the decisions in the prior proceedings to which Entergy and the Staff refer are essentially irrelevant. Those decisions were dependent on exactly what the intervenor(s) there did or did not plead or prove. A decision that an issue was not part of an Intervenor’s contention, for example, that Pilgrim’s original contention did not specifically include health or clean-up costs or that Riverkeeper’s contention did not raise whether the choice of source term was proper, has nothing to do with whether the issues that are raised by the Intervenor here must be considered. A prior decision that an Intervenor did not prove an admitted contention similarly has nothing to do with whether a contention should be admitted here.

The Commission has long said (Fed. Register, Vol. 63, No. 150, August 5, 1998, repeated in the 2010 Edition of the NRC Digest) that

“ the Commission's objectives are to provide a fair hearing process,... and to produce an informed adjudicatory record that supports agency decision making on matters related to the NRC's responsibilities for protecting public health and safety, the common defense and security, and the environment,”

and that “the opportunity for hearing should be a meaningful one that focuses on genuine issues and real disputes....”

The most recent edition of the NRC Digest says that “Public participation through intervention is a positive factor in the licensing process and Intervenor perform a

valuable function and are to be complimented and encouraged.” (Prehearing Matters, 11)

Intervenor trusts that the NRC means what it has said, and that the Intervenor here will be permitted to perform their indisputably “valuable function,” and help insure that the NRC will fulfill its “responsibilities for protecting public health and safety, the common defense and security, and the environment.”

II. NEXTERA’S ADMISSIBILITY ARGUMENT

NextEra divides its argument into two sections. The first incorrectly argues that Contention 4 is inadmissible for three fundamental reasons; and the second section addresses each material dispute raised by the Petitioner.

NextEra incorrectly asserts that Contention 4 is inadmissible. Their arguments are fundamentally flawed. They argue that Friends-NEC ignored NEPA’s rule of reason; failed to present a genuine dispute by not proving issues raised with facts supported by expert testimony; and repeatedly attempted to support their mistaken arguments by citing opinions and decisions made at other license renewal adjudications - out of context and not applicable here.

A. NEPA’S RULE OF REASON

Both NextEra and Staff bring forward the “the rule of reason” in their arguments so that the discussion below applies to both, as appropriate.

NextEra argues (at 65) that “Petitioners’ argument boils down to their assertion that there are better methods available for determining the offsite dose consequences and costs in the SAMA analysis. But because it is subject to NEPA’s rule of reason, the pertinent question for a SAMA analysis is not whether they are “plainly better” models or whether the analysis can be further refined, but rather whether the selected methodology is reasonable.” They conclude that, “Unless it looks *genuinely plausible* that inclusion of an additional factor or use of other assumptions or models may change the cost-benefit conclusions for the SAMA candidates evaluated, no purpose would be served to further refine the SAMA analysis.”

NextEra’s argument is seriously flawed on two counts. First Friends/NEC did not argue that there were “plainly better” methods to determine offsite consequences; instead

we correctly stated that NextEra's methods were plainly outdated, inappropriate for Seabrook's site and significantly flawed.. NextEra's choice of methods served to severely underestimate consequences so that offsite costs appeared to not justify mitigations to reduce risk and better protect the health and safety of the public.

Second Friends/NEC, unlike NextEra, fully understands the rule of reason. NEPA does not allow, or find reasonable, the applicant's decision to use outdated methodologies and assumptions in their analysis. Friends/NEC's alternative methods are available, in use by other federal agencies, industries and parties, and are both reliable and applicable to Seabrook's SAMA cost benefit analyses. Examples:

1. Meteorological plume model (4c): NextEra states that an environmental impact statement is not intended to be "a research document." We agree with that statement. However, the statement is not applicable to the issue at hand.

The plume modeling that Friends/NEC present as appropriate for Seabrook's SAMA analysis, instead of NextEra's decision to use the straight line Gaussian model, are not techniques that require research. They are, in fact, established methods that are publically available, routinely used, and appropriate for quantifying atmospheric dispersion of contaminants. Although an effort may be required to adapt them for SAMA analyses, this would be very straightforward and research would not be required.

Appropriate meteorological data or modeling methodology is available. There is no shortage of appropriate meteorological data for a licensing model application. Alternative modeling methods that would use more extensive meteorological data are also available.

The applicant chose to use only one year of onsite data collected at the Seabrook site. Meteorological data is also available from nearby airports and, importantly, processed data on a gridded basis can be obtained NOAA to augment the onsite meteorological data relied upon for the SAMA analyses that have been provided by NextEra. Friends/NEC demonstrated this by including the Thorpe site-specific meteorological study that used available meteorological data. Also there are several publically available meteorological modeling methods that can simulate variable trajectory transport and dispersion phenomena. MM5 is one which is routinely used nationally and internationally. There are other options as well. The present state of art of

an appropriate meteorological model would use multi station meteorological measurement data as input to the meteorological model. The numerical computations, based upon numerical weather prediction techniques, would compute wind fields appropriate for modeling dispersion over a much larger geographic area than the a single measurement site would be appropriate for.

A second reasonableness criterion is that the modeling method must be reliable. The outputs from such meteorological models that are used to produce inputs for the dispersion models are well accepted and form the basis for the weather predictions provided by the national weather service as well as analyses of air pollution impacts of concern to regulatory agencies . These techniques have been proven to be reliable and acceptable for air quality permitting and policy applications in complex terrain and over large distances for the US EPA , the US Park Service as well as internationally. Friends/NEC argued with sufficient particularity that for complex meteorological situations such as for the Seabrook, these techniques would be *more* reliable than using the straight line Gaussian model.

The third reasonableness criterion is that the modeling methods be applicable to SAMA analyses. The methods Friends/NEC recommended are applicable because with straightforward modifications to incorporate nuclear radiation decay rates, they can produce the fields of concentration values and deposition rates needed for dosage calculations.

The fourth reasonableness criterion is that the modeling methodology be adaptable for evaluating SAMA analysis cost benefit conclusions. There is nothing inherent in variable trajectory models that would prohibit the output concentration and deposition fields from being applied to SAMA analyses.

None of the criteria cited would make the use of alternative models unreasonable to apply to the Seabrook's SAMA analyses.

Further there is no basis to the argument that there may be no way to assess through mathematical or precise model to model comparisons, how alternative meteorological models would change the SAMA analysis results. Some assessments may necessarily be qualitative, based simply upon expert opinion. But this argument seems to undercut the very value of mathematical simulation models in general as a method to

assess the impacts of nuclear reactor emissions.

Last, the rationale offered that the use of advanced models would be computationally too expensive and/or burdensome to use are not justified by the actual run time shown in our review of MACCS2 output files. With modern computers, the use in inappropriate models on the basis of differences of computational costs is indefensible.

Invoking the “practical rule of reason “to the present disagreement about the most appropriate modeling methodology for application to the Seabrook SAMA analyses is blatantly dismissive of the concept that the present methods are inappropriate and outdated and that there are indeed alternative modeling methods that would be quite reasonable to use.

2. MAAP code (4b):

Friends/NEC explained that the source terms used by NextEra to estimate the consequences of severe accidents (radionuclide release fractions generated by the Modular Accident Analysis Progression, MAAP) are consistently smaller for key radionuclides than the release fractions specified in NUREG-1465 and its recent revision for high-burnup fuel.

The source term used results in lower consequences than would be obtained from NUREG-1465 release fractions and release durations. New research is not required. Friends/NEC’s alternative model is reliable. Instead, independent studies and a study by the Brookhaven National Laboratory, cited in Friends/NEC’s motion showed use of the MAAP code is unreliable by significantly underestimating collective dose.

We expect to be allowed to demonstrate this at the hearing. Friends/NEC’s alternative model is applicable to SAMA analyses and adaptable for evaluating the SAMA analysis cost benefit conclusions. The effect of alternative source codes for evaluating SAMA analysis cost benefit conclusions has been demonstrated at other sites. NextEra knows this. They discussed the research done by Dr. Edwin Lyman, Senior Scientist Union of Concerned Scientists, at Indian Point.

3. MACCS2 risk consequence code (4c):

The Applicant’s SAMA analysis uses MELCOR Accident Consequence Code System (MACCS2) computer program. Friends/NEC stated the plain fact that there is no NRC regulation *requiring* the use of that code, or any other particular code. It was NextEra’s choice. There are other

consequence computer codes in use for nuclear accidents around the world. Research is not necessary.

Further, Friends/NEC explained that it is reasonable to require NextEra to update the code if as we shall demonstrate it provides the “wrong” answer by significantly underestimating offsite consequence costs.

The user (NextEra is this instance) controls what is put into the consequence code – the meteorological data, decay chain data, the dose conversion factor file data, the population input file data, the data into the COMIDA 2 model. The MACCS2 code’s OUTPUT file does the averaging and ranks the data into a cumulative distribution function (CDF) – the mean, 50th quartile, 90th quartile, 95th quartile, peak consequence, peak probability, peak trial. NextEra chose to take the mean value; and, there is no NRC rule requiring the mean. The mean is the wrong choice, it underestimates consequences. A mean divides the sum by the number of entries. There are thousands of individual data entries so that dividing the sum by so many entries unreasonably dilutes the results. Further NextEra multiplied the mean by their estimate of the probability of the accident scenario.

The point is that NextEra’s choices – inputs and choice of averaging and probability – resulted in significantly underestimating costs. It is not unreasonable to require further analysis using different data and parameters.

Last it is obvious that NextEra has time to do a proper analysis; Seabrook’s license does not expire for 20 years, they clearly have time to do so.

B. MOTIONS TO INTERVENE – REQUIREMENTS

Friends/NEC largely covered this issue in the foregoing Introduction, Section I. However we shall take this opportunity to address points raised by NextEra. NextEra argues that “to make a necessary showing, Petitioners must rely upon fact or expert opinion.” Friends/NEC quiet clearly met this standard. It provided genuine disputes and did not rest upon mere allegations or denials; rather disputes raised were supported by ample references to experts, government documents and site specific studies.

Expert testimony is not required at this stage in the proceeding. If it were so, most members of the public, non-profit public interest groups, and local governments would be

unable to file due to lack of resources. Resources for these groups necessarily must be preserved for expert witnesses required at the summary disposition and hearing stage of these proceedings. Clearly it is not the intent of the Commission to restrict initial participation only to insiders with deep pockets.

What NextEra forgets is that we are at the initial stage of the proceeding (not the summary disposition or hearing stage) and are following requirements to introduce with sufficient particularity areas that the Applicant must defend against.

C. UNCERTAINTY

NextEra makes an absurd argument (at 67) that “Contention 4 is focused mainly on uncertainty and (contention 4) alleges that greater precision in NextEra’s SAMA analysis is required (and) uncertainty is unavoidable and it is inarguable that precise predictions of complex phenomena are not possible (and NEPA ‘does not call for certainty or precision, but an estimate of anticipated (not unduly speculative) impacts.’”

Friends/NEC fully appreciates that there is uncertainty. For example, source term, meteorological conditions and evacuation (protective action measures cannot be definitively predicted to be occurring at any given time and must be addressed probabilistically in SAMA analyses; but NEPA requires an honest probabilistic analysis based on available, reliable and up-to-date models. NextEra failed to do so - the dispute.

Further there is no basis to the argument that there may be no way to assess through mathematical or precise model to model comparisons, how alternative models would change the SAMA analysis results. Some assessments may necessarily be qualitative, based simply upon expert opinion. But this argument seems to undercut the very value of mathematical simulation models in general as a method to assess the impacts of nuclear reactor emissions offsite in a severe accident. Surely the board does not believe this.

NextEra (at 69) argues that they performed a number of sensitivity analyses to account for uncertainty. However Friends/NEC clearly refuted the value of these studies; because they relied on the exact same flawed methodology. Repeating the same mistakes over and over does not provide the correct answer or, in this case, demonstrate that they properly accounted for uncertainty.

III. SECTION-BY-SECTION REBUTTAL

NextEra and NRC Staff make similar arguments; therefore Friends/NEC's reply to NRC would be applicable here, as appropriate.

A. CONTENTION 4A – PROBABILISTIC MODELING

In Contention 4A, Petitioners assert that: NextEra's use of probabilistic modeling underestimated the deaths, injuries, and economic impact likely from a severe accident by multiplying consequence values, irrespective of their amount, with very low probability numbers, the consequence figures appeared minimal. NextEra's claim that contention 4A is inadmissible (pages 70-73) is incorrect.

1. NextEra says that, "Any serious evacuation of costs and benefits of proposed alternatives to mitigate severe accidents must account for risk." We do not disagree; but, what is important is for the Applicant to accurately estimate risk by using appropriate, up-to-date, and available methodology and assumptions. NextEra failed to do so; and that is the point of Friends/NEC's dispute.

2. In refuting Friends/NEC's dispute regarding probabilistic modeling, NextEra cites from the Pilgrim LRA. That Board deemed such a challenge inadmissible because the 'use of probabilistic risk assessment and modeling is obviously accepted and standard practice in SAMA analyses.'" (Emphasis added) However this is Seabrook's LRA and not Pilgrim's. Further, we underscore the key word "practice." It is a practice not a rule.

3. We agree probability must be taken into consideration; but must be taken with caution. That is why we referenced Kamiar Jamali's (DOE Project Manager for Code Manual for MACCS2) *Use of Risk Measures in Design and Licensing Future Reactors* (Attachment A). It made clear that "PRA" uncertainties are so large and so unknowable that it is a huge mistake to use a single number coming from them for any decision regarding adequate protection. "Examples of these uncertainties include probabilistic quantification of single and common-cause hardware or software failures, occurrence of certain physical phenomena, human errors of omission and commission, magnitudes of source terms, radionuclide release and transport, atmospheric dispersion, biological effects of radiation, dose calculations, and many others." (Jamali, Pg., 935) Emphasis

added.

4. Also, human error is not considered in PRAs. PRAs project into the future and come up with some very small number that an accident scenario only is likely to occur in so many hundreds-to-thousands of years. But no reactor has operated 45 or more years so actual experience is absent to base predictions. Uncertainty must be respected by making certain that appropriate and up-to-date methods and assumptions are used in the analysis. NextEra has not done so.

5. NextEra argument (page 71) misinterprets the GEIS. They say that “Petitioners’ challenge to the use of probabilistic modeling is inadmissible because it amounts to a challenge to the NRC’s generic and probabilistic determination of the environmental impact of severe accidents. This finding is codified as follows:

SMALL. 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. However, alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives. *See* § 51.53(c)(3)(ii)(L).

10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, Issue 76 (emphasis added).

Thus, the SAMA analysis...must ignore risk and focus only on consequence.”

However NextEra’s conclusion is wrong. They misinterpret what the GEIS said. The GEIS says not that accident consequences are small, but after going through the “probability weighted consequences” that they then appear small. Therefore, we conclude that the GEIS supports our dispute regarding NextEra’s choice to multiply the “mean” by the “weighted probability” in the MACCS2 OUTPUT File.

6. Finally, NextEra argues that Petitioner’s claim that the use of probabilistic modeling is improper for considering intentional malevolent acts because the “Commission concluded that NEPA ‘imposes no legal duty on the

NRC to consider intentional malevolent acts...in conjunction with commercial power reactor license renewal applications.” And further that the GEIS 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.” However that argument fails in that the GEIS, Section 5, Friends/NEC focuses on the potential consequences to determine whether or not a potential accident is severe; and nothing in Section 5 excludes severe accidents that result from a terrorist attack. Absent a site specific PRA at Seabrook to determine its specific vulnerabilities and consequences, the risk at Seabrook is unknown.

A. CONTENTION 4B –MINIMIZATION RELEASE

In Contention 4B, Petitioners assert that the SAMA analysis for Seabrook minimizes the potential amount of radioactive release in a severe accident. (Pet. at 41)

NextEra’s claim that contention 4B is inadmissible, pages 73-77, is incorrect.

1. Spent Fuel Pool Accidents

a. NextEra argues that no mitigation analysis is required for spent fuel pool accidents- an argument similar to the one above regarding terrorist attacks. Friends/NEC clearly established the dispute.

We noted specifically that although 10 C.F.R. § 51.53(c)(3)(ii)(L), does not provide a definition of severe accidents. The GEIS,⁹ which provides the factual background for the SAMA requirement in the regulations, *does* define a “severe accident.” According to Section 5.2.1 of NUREG 1437 “General Characteristics of Accidents,” the “term ‘*accident*’ refers to any unintentional event outside the normal plant operational envelope that results in a release or the potential for release of

⁹ See NUREG-1437, Generic Environmental Impact Statement for License Renewal of Nuclear Plants (May 1960) [hereinafter GEIS]; Final Rule, “Environmental Review for Renewal of Nuclear Power Plant Operating Licenses,” 61 Fed., Reg., 28, 467 (June 5, 1960, amended by 61 Fed. Reg. 66, 537 (Dec. 18, 1996); 10 C.F.R. Pt. 51, Subpart A, Appendix B n.1)

radioactive materials into the environment” and ‘severe’ ... [includes] those involving multiple failures of equipment or function and, therefore, whose likelihood is generally lower than design basis accidents but where consequences may be higher . . .” (Emphasis added). This section recognizes the potential for a severe accident in which there are “releases substantially in excess of permissible limits for normal operation.”¹⁰

Section 5 focuses on potential *consequences* to determine whether or not a potential accident is severe – and thus is within the scope of a Severe Accident Mitigation Analysis. The question is not whether the source of the Severe Accident is the first or second largest inventory of radioactive materials. Perhaps NextEra confused Section 6 of the GEIS with Section 5. Section 6 deals with *normal operations* (see, for example, section 6.1: “Accidental releases ... could conceivably result in releases that would cause moderate or large radiological impacts. *Such conditions are beyond the scope of regulations controlling normal operations....*” (Emphasis added).

Section 5, not Section 6, deals with severe accidents. Nothing in Section 5 excludes severe accidents involving what at Seabrook Station is the largest inventory of radioactive materials – the spent fuel pool. Due to 40 years of operations, the “inventory of radioactive materials” in Seabrook’s spent fuel pool will be many times over that in its reactor core.

b. NextEra dismisses the fact that interactions between the spent fuel pool and the reactor need to be studied in the context of severe accidents. Their argument is foolish on its face. They say, at 75, that the report Friends/NEC cited as reference was prepared for

¹⁰ The term "accident" refers to any unintentional event outside the normal plant operational envelope that results in a release or the potential for release of radioactive materials into the environment. Generally, the U.S. Nuclear Regulatory Commission (NRC) categorizes accidents as "design basis" (i.e., the plant is designed specifically to accommodate these) or "severe" (i.e., those involving multiple failures of equipment or function and, therefore, whose likelihood is generally lower than design-basis accidents but where consequences may be higher), for which plants are analyzed to determine their response. *The predominant focus in environmental assessments is on events that can lead to releases substantially in excess of permissible limits for normal operation. Normal release limits are specified in the NRC's regulations (10 C.F.R. Part 20 and 10 C.F.R. Part 50, Appendix A). GEIS, 5.2.1, Italics added*

Vermont Yankee and Pilgrim, specifically; and that Petitioners have not shown that it has any bearing on Seabrook. First, it is not the Petitioner's responsibility to demonstrate proof at this stage of the proceeding; and second, the interactions between the reactor and the pool apply to Seabrook- one does not require a nuclear engineering degree to figure that out.

2. MAAP Code

NextEra incorrectly found inadmissible Petitioners dispute regarding NextEra's use of the MAAP code to generate source terms. NextEra improperly and incorrectly say that "Petitioner's offer no fact or expert opinion in support of the contention."

a. Friends/NEC is not required to prove our case at this juncture – this is not summary disposition.

b. Friends/NEC referenced multiple sources (Motion at 44). For example: NRC, Brookhaven National Laboratory, and J. Schaperow were referenced. Further, NextEra knows that we referenced experts. NextEra, in the next breath complains that Friends/NEC virtually "copied almost verbatim" from a submission by Dr. Edwin Lyman. Dr. Lyman is an expert - a Senior Scientist at the Union of Concerned Scientists. Hence, NextEra fully acknowledges that Petitioners are not relying on mere speculation but expert opinion – the opinion of one of the expert witnesses that we intend to provide the Board with a site specific analysis at the required stage of this adjudicatory process.

c. NRC Staff 's brief opposing our motion agree with Friends/NEC's position that the MAAP code has not been formally reviewed and approved by NRC; and that its use is not required.

B. CONTENTION 4C –MACCS2 COMPUTER CONSEQUENCE CODE

In Contention 4C, Petitioners assert that the SAMA analysis for Seabrook uses an outdated and inaccurate proxy to perform its SAMA analysis, the MACCS2 computer program. (Pet. at 46)

1. NextEra incorrectly argues that contention 4c is inadmissible because, "Petitioners do not raise any specific challenge to NextEra's SAMA analysis in

Contention 4C; instead, they make only general and unsupported assertions about the MAACS2 code.” It is clear that NextEra, like NRC Staff, forgets that this is the preliminary pleading stage of these proceedings and that we are neither in the summary disposition or hearing stage, as explained in the Introduction to Petitioner’s response.

2. They argue further that Friends/NEC “includes conclusory and unsupported challenges to the MACCS2 code specifically that its cost formula and assumptions underestimate the costs of a Severe Accident (*See* Pet. at 46-7) Without any support for these assertions, they fail to demonstrate the existence of a genuine, material dispute with the applicant.” Not so.

We very clearly say that “The cost formula and assumptions contained in the MACCS2 underestimates the costs likely to be incurred as a result of a severe accident, explained in greater detail further below.” And, most certainly, there is far greater detail provided in our Motion below.

For example in section 4D we dispute the straight-line Gaussian plume model that is embedded in the ATMOS module of the code; a model that calculates air and ground concentrations, plume size and timing information for all plume segments as a function of downwind distance. NextEra acknowledges this at 78 where they say that the straight-line Gaussian plume is embedded in the MACCS2 model. In section 4 E, we dispute the assumptions regarding cleanup and health costs embedded in the code. In Section 4F, we dispute the averaging performed in the MACCS2 output file.

Friends/NEC devoted separate sections to these subparts because each subpart contributes to the whole or fundamental dispute that 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.

3. NextEra’s argues, opposing Friends/NEC’s assertion that the MACCS2 code is not quality assured and was developed for research purposes and *not* licensing purposes, has no merit. Friends/NEC’s key and relevant factual dispute was provided by an article

written by David I. Chanin. Mr. Chanin wrote the FORTRAN for the MACCS and MACCS2 codes. He specifically wrote the referenced paper because, as described in an endnote:

The QA distinctions between an NQA-1 "licensing code" and a "research code" like MACCS2 have been emphasized in light of the fact that MACCS2 calculations are being used to support the Severe Accident Mitigation Alternatives (SAMA) analyses required for the license renewal of commercial nuclear power plants. It seems to me that the code's QA shortcomings and the lack of input justifications are again being ignored, just as they were prior to DNFSB TECH-25 and the veritable firestorm that soon followed. D.C.]

4. NextEra criticism of Petitioners statement that “there is no explanation of exactly how [MACCS2] works” is invalid. They argue that MACCS2 User’s Guide explains how it works and that Friends/NEC must have known that because they reference the User’s Guide. However what Friends/NEC knows is what is and is not in the Guide – information that NextEra apparently has missed.

C. CONTENTION 4D –STRAIGHT-LINE GAUSSIAN PLUME MODEL

In Contention 4D, Petitioners challenge the 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. (Pet. at 47)

1. NextEra properly acknowledges that Friends/NEC pled a number of disputes that include: the straight-line Gaussian plume model; sea breeze; plumes remaining concentrated over water resulting in “hot spots;” terrain effects; input data restricted to one year; and input data from one source, the onsite meteorological tower. NextEra does not take issue with Petitioner’s dispute that the meteorological input data

came solely from the onsite meteorological tower and was insufficient in Seabrook's complex setting. Therefore, we can conclude that they agree with Friends/NEC.

2. NextEra, like NRC Staff, forgets that requirements for a Motion to Intervene are very different from those at summary disposition or a hearing. (See Section II) It is clear that these issues have been pled and that NextEra has been properly forewarned of what to expect at hearing. Examples:

a. NextEra incorrectly says, at 79, that "Petitioners fail to provide adequate support for their assertions." Not true. Friends/NEC provided more than adequate support for a pleading. A plethora of citations to government studies, site specific studies, and more general but applicable research published in prestigious journal articles. (Refer to Appendix I in Friends/NEC's response to NRC Staff)

b. NextEra argues that Friends/NEC "provided no explanation why sea breezes are not already accounted for in the meteorological data used in the Seabrook analysis; that our support regarding the behavior of plumes of water was limited to citations in two professional journal articles and expert testimony prepared for the Massachusetts Attorney General discussing this issue at a reactor likewise located on Massachusetts' coast; that our dispute that the straight line model is inappropriate and cannot account for changes in terrain simply referred to EPA Guidance and that guidance "addresses the modeling of hazardous pollutants." Are we to believe radionuclides are not hazardous pollutants? NextEra's entire argument forgets the central issue – what is and is not required at the pleading stage.

3. NextEra in its response makes constant reference to comment and decisions in prior proceedings, especially to the on-going SAMA adjudicatory proceeding at Pilgrim NPS. However these references are irrelevant. Those decisions were dependent on exactly what the intervenor(s) there did or did not plead or prove and have nothing to do with whether a contention should be admitted here.

For example, at 80, NextEra says that, "Petitioners must show that it is "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.” *Pilgrim*, CLI-10-11 71 NRC at ___ (slip op. at 39) Petitioners have attempted no such showing” in this Motion to Intervene. NextEra’s above reference refers to the Commission’s Remand of the SAMA contention back to the Board March 26, 2010. Petitioner’s Motion to Intervene was filed in May 2006 and admitted in October 2006. It should have been clear to NextEra that pleading requirements are far less than at the remanded hearing stage.

4. NextEra alleges that “methodological shortcomings are as likely to result in overly conservative results.” We find it telling that NextEra chooses only to very selectively quote from Pilgrim’s SAMA filings; but avoided, for example, Pilgrim Watch’s Brief in Response to CLI-09-11, at 11, that responded to the Commission’s request for briefing on whether the straight-line Gaussian plume model was conservative. It is unnecessary to respond here. Suffice it to say, we will provide evidence at the required stage here and, like at Pilgrim, present factual evidence that indeed the straight-line Gaussian plume is NOT conservative.

5. NextEra, at 81-82, says that “NEPA allows agencies “to select their own methodology as long as the methodology is reasonable.” Petitioners in Section II discussed this; suffice it to say that the core issue is that NextEra did not choose a reasonable methodology and there are models that are appropriate, up-to-date, reliable, and suitable to Seabrook’s site that would be reasonable – examples were provided.

6. NextEra refutes our dispute that one year of meteorological data is insufficient. Petitioners are not required to defend or prove our case here. However we will provide a short response for the benefit of the Board – an appetizer. Seasonal wind distributions can vary greatly from one year to the next. The simple fact is that measurements from a single anemometer will not provide sufficient information to project how an accidental release of a hazardous material would travel. For example: A sea breeze effect will not be identified by a single onsite met tower in cases when the sea breeze is just developing and for cases when the onshore component winds do not reach entirely from the ground to the anemometer height; instead, the anemometer would likely indicate an offshore wind indication. Further in MACCS2 Guidance Report June 2004 Final Report page 3-8:3.2 Phenomenological Regimes of Applicability, it says that basing wind direction on the

single on-site meteorological tower data ignores “shifting wind patterns away from the site including temporary stagnations, re-circulations, and wind flow reversals that produce a different plume trajectory.

E. Contention 4E – Economic Consequences

In Contention 4E, Petitioners challenge the 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.

(Pet. at 61)

NextEra, like Staff, mistakenly believes that we are at the Summary Disposition stage of this process. Not so. Please refer again to the initial discussion of what is required, Section I.

NextEra argues that Contention 4 E is inadmissible. They could not be more mistaken.

1. Decontamination and Cleanup Costs :

It is apparent that NextEra does not want to touch this issue any more than NRC, EPA or DHS want to take responsibility for cleanup or industry advertise that Price Anderson does not cover cleanup costs, only damages. It is the big “Elephant in the Room.”

However NextEra’s arguments are ludicrous and disjointed on their face. Again we were not required to prove our case at this contention stage, or to provide an exhaustive list of possible bases, but simply to provide sufficient alleged factual or legal bases to support the contention and do so at the outset. We did – ample references, for example, were provided to government documents and the LRA.

Inexplicably, NextEra believing that we are at summary disposition says (at 91) that, “But to raise a genuine, material dispute they must show “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.” *Pilgrim*, CLI-10-11, 71 NRC at __,(slip op. at 39) (emphasis added).

It is clear that NextEra either does not want to understand the issue or that they

understand it only too well and base their argument upon misrepresentations of Petitioner's motion. For example:

(a) NextEra spends considerable time asking (at 90) why "Petitioners want NextEra to base its analysis on plutonium dispersal in a nuclear weapons event." It is clear that we did not ask for that; instead made plain that a large problem with the MACCS2's code was that it, like its predecessor WASH-1400, assumes that the same methodology used to clean-up weapons events will be used after severe nuclear accident. The methods in MACCS2 (fire hosing and plowing under fields) are modeled assuming that they will be used to clean-up nuclear reactor accidents. Friends/NEC explained why this is not acceptable for Seabrook's site. (a) Radionuclides from reactor accidents differ from those released by a nuclear bomb explosion; therefore, they could not be cleaned up in the same manner, as quickly, or cheaply. Further, because plowing under fields and fire hosing does not cleanup the radionuclides, but simply moves them into the groundwater or deeper into the soil to once again reappear and contaminate the area, this method will not be acceptable to local officials and the public.

(b) NextEra has a most interesting definition of "conservative. They claim, at 94, that moving contamination from one place to another in the same geographical, contaminated area adds conservatism to the MACCS2 code and justifies its use disputing Petitioner's.

(c) NextEra misinterprets Petitioner's reference to SAND-96-0957 (at 91). They say that we were advocating basing cleanup on a plutonium event. To the contrary, Friends/NEC properly referenced the DOE document contrary simply to point out that there were alternative models for cleanup and that DOE had moved far beyond NRC to improve methodology.

(d) NextEra (at 92) misleads the Board regarding decontamination factors (DFs). They avoid the point by failing to say what NextEra put into the MACCS2 code. They simply say that the "User's Guide suggests the use of two decontamination levels. *Id.* at 7-10. And the page immediately following that cited by Petitioners shows the dose reduction factor as an input to the code with suggested values of 3 and 15 for the two decontamination levels. NUREG/CR-6613 at 7-11 ("Variable Name: DSRFCT"); *see also id.*, App. C, "Sample Problem A," at C-32, line item 12." Did NextEra take the

Users Guide's suggestion; and did NextEra use the sample problem data? These are questions to answer as we go along.

(e) NextEra apparently chooses to misunderstand Friends/NEC's references to Luna and Reichmuth's referenced RDD studies for the US Department of Homeland Security. They were provided in the Motion as a yardstick to indicate that if cleanup were properly assessed by NextEra in their SAMA, as required, that costs would be considerably higher, adding additional SAMAs. The studies provided likely costs per kilometer in urban to rural areas. Petitioner's logically concluded that "a severe accident at Seabrook is likely to result in huge costs; costs not accounted for by NextEra, because of the type and magnitude of radionuclides released in comparison with a RDD type device."

2. Health Costs:

(a) Friends/NEC dispute health costs used in the analysis – they were underestimated. The population dose conversion factor of \$2000/person-rem used by NextEra to estimate the cost of the health effects generated by radiation exposure is based on a deeply flawed analysis and seriously underestimates the cost of the health consequences of severe accidents. Petitioners supported its dispute with reference to government documents, the national Academies of Sciences, and independent research reported in respected technical journals. We fully satisfied requirements at this pleading stage.

(b) Petitioners argue that NextEra's "evacuation time input data into the code were unrealistically low and unsubstantiated; and that if correct evacuation times and assumptions had been used, the analysis would show far fewer numbers in the affected population will evacuate in a timely manner, increasing health-related costs." Pet. at 72. NextEra's claim that our dispute is inadmissible does not stand up. They refer to a sensitivity study. *See* ER at F-159. They say that they provided four different evacuation time sensitivity analyses, each showing that there would be little or minor impact to dose or economic cost. However, their sensitivity studies simply entered different inputs into the same flawed model. Repeating the same mistake four times does not give a reliable answer. Friends/NEC supported our dispute as required at this stage and thereby satisfied our pleading. We are not required to prove our case at this time. Friends/NEC notes that

once more NextEra referenced Pilgrim findings.. We remind the Board that a prior decision that an Intervenor did not prove at another reactor and adjudication process has nothing to do whether a contention should be admitted here.

3. Myriad Other Economic Costs

In the third part of Contention 4E, Petitioners allege that NextEra failed to include a myriad of other economic costs including “the business value of property;” loss and/or damage to infrastructure; costs of job training, unemployment costs, and litigation; and underestimated the value of farm land, for example, by not considering the value of the farm property for development purposes as opposed to agricultural, and farm land assessments are intentionally very low to encourage farming and open space. Contrary to NextEra the issue is properly pled and provides sufficient notice to NextEra that this is an dispute to prepare for further down the road.

F. CONTENTION 4F – STATISTICAL ANALYSIS OF DATA

In Contention 4F, Petitioners challenge the 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.

Pet. at 74 and again at 4D; thereby this important dispute is raised at the outset.

1. NextEra properly indicates that we erred in our page reference to the LRA, and we apologize for that.

2. NextEra (at 102) says that “NRC practice is ‘to utilize the mean values of the consequence distributions for each postulated release scenario or category[,]’ which are then ‘multiplied by the estimated frequency of occurrence of specific accident scenarios to determine population dose risk and offsite economic cost risk for each type of accident sequence studied.’” However they disagree with Petitioner’s dispute regarding use of the mean. NextEra justifies its use based upon a quote from the Pilgrim Remand. “As a NEPA analysis, the SAMA evaluation need not incorporate a worst-case impacts analysis. Such an analysis would “distort[] the decision-making process by

overemphasizing highly speculative harms.” What both the Order quoted and NextEra fail to understand is that as a NEPA analysis, the SAMA evaluation should not incorporate a “fantasy case scenario”. Such an analysis would “distort the decision-making process by underestimating harms

Friends/NEC explained above that the MACCS2 code’s OUTPUT file does the averaging and ranks the data into a cumulative distribution function (CDF) –50th quartile, mean, 90th quartile, 95th quartile etc. NextEra chose to take the mean value; and, there is no NRC rule requiring the mean. The mean is the wrong choice, it underestimates consequences. A mean divides the sum by the number of entries. There are thousands of individual data entries so that dividing the sum by so many entries unreasonably dilutes the results. Further NextEra multiplied the mean by their estimate of the probability of the accident scenario. The point is that NextEra’s choices – inputs and choice of averaging and probability – resulted in significantly underestimating costs.

Friends/NEC satisfied pleading requirements for Contention 4 and we look forward to proving our case at the appropriate stages in the process ahead.

V. CONCLUSION AND REQUEST FOR RELIEF

Where with respect to the foregoing NRC Staff’s Answers are identical or very similar to those of NextEra, Friends/NEC respectfully requests that its Replies be taken as applicable to NRC Staff’s Answers as well.

NextEra’s application should be denied. Alternatively, Friends of the Coast and New England Coalition seek protection of their interests through an ASLB Order requiring, as prerequisite to license renewal, that NextEra cure the inadequacies in its application as described above so as to provide assurance of public health and safety.

In addition, Seabrook must operate within the requirements of 10 CFR 50 and 54 and the NRC must provide reasonable assurance to the public that the plant is in compliance with all NRC regulations.

Respectfully submitted,

November 22, 2010

Friends of the Coast

New England Coalition

by

Raymond Shadis
New England Coalition
Post Office Box 98
Edgecomb, Maine 04556
207-882-7801
shadis@prexar.com