

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)

December 6, 2010  
Docket No. 50-443 LR  
ASLBP No. 0-906-02-LR

**SUPPLEMENT**  
**To**  
**Friends Of The Coast And New England Coalition**  
**Petition For Leave To Intervene, Request For Hearing,**  
**And Admission Of Contentions**

**ERRORS AND CORRECTIONS**

**And**

**NEW INFORMATION**

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

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, Seabrook Unit 1 –  
License Renewal Application)

December 6, 2010

Docket No. 50-443 LR  
ASLBP No. 0-906-02-LR

**SUPPLEMENT**  
**To**  
**Friends Of The Coast And New England Coalition**  
**Petition For Leave To Intervene, Request For Hearing,**  
**And Admission Of Contentions**

**ERRORS AND CORRECTIONS**  
**And**  
**NEW INFORMATION**

Friends of the Coast – Opposing Nuclear Pollution (Friends of the Coast) and New England Coalition, Inc. (“NEC”) jointly (herein as, Friends /NEC), in accord with orders of the Presiding Officer issued November 30, 2010 and in response to queries of Atomic Safety and Licensing Board Panel (“Board”) members, now provides a corrected Declaration of its expert witness, Mr. Paul M. Blanch, and a single clarifying correction to proposed Contention Four regarding Severe Accident Mitigation Alternatives analyses.

**I. Declaration of Paul M. Blanch** (corrected and provided as Friends/NEC Petition Supplement - Attachment One) – Following the November 30, 2010 prehearing conference in this matter, where the Board pointed out a number of errors in the Declaration of Friends/NEC’s witness Mr. Paul Blanch, Friends/NEC undertook an

evaluation of the submitted document. Friends/NEC found that the several errors (misstatements, numeric errors, incorrect or incomplete citations to regulation, inadvertent omissions, and broken sequences) were an artifact of some confusion in composing the declaration while drawing on other earlier declarations on file. Friends/NEC deeply regrets and apologizes for any concern or confusion that filing an inadvertently flawed declaration may have caused.

In accordance with the Board's order, Friends/NEC and its witness, Mr. Blanch strove to remedy the declaration's flaws without unduly introducing substantive changes to the thrust of Mr. Blanch's testimony. Some changes involving the alteration of text were found to be necessary in order to remedy inadvertent omissions, for purposes of clarification, and to restore narrative order.<sup>1</sup> Examples (selected for contrast with the original and listed in italic) are as follows:

A. Qualifications to testify regarding piping – At the prehearing conference, the Board pointed out that it did not find in the Friends/NEC filings any reference to Mr. Blanch's qualifications to testify regarding piping. Mr. Blanch's December 6, 2010 Declaration cures the inadvertent omission(s).

At 4, Mr. Blanch includes *piping* and *valves* in his list of Navy nuclear reactor operation duties.

At 8, Mr. Blanch explains that while at Northeast Utilities, he was *under the direction of the Nuclear Engineering Department*. [emphasis added]

At 10, Mr. Blanch affirms, "My duties at Northeast Utilities included *piping system designs* and also all Instrument and control systems. *I also served as Nuclear Operations Engineer providing liaison services between the NU headquarter and*

---

<sup>1</sup> Changes other than those of typographic, punctuation, grammatical, or formatting nature.

*Millstone Unit 2 responsible for coordination of all system design, operation and backfits of operating systems.* [emphasis added].

At 15, Mr. Blanch explains that in 1993, he was named “Engineer of the Year” by Westinghouse Electric and Control magazine for his efforts in identifying the subtle failures of active electrical devices such as pressure, level, and flow transmitters and indicators. These failures *included generic design deficiencies of piping and mechanical systems in reactor level monitoring systems.* [emphasis added]

### B. Clarification of Issues

Text emphasized in italics indicates identified changes or additions.

At 19, Mr. Blanch offers for purposes of clarification, “*10 CFR 54.21 addresses electrical cables and connections and does not differentiate between low, medium and high voltage cables and connections. It is only the GALL document that makes the differentiation. All cables meeting the requirements of 10 CFR 54.21 must be addressed and provided with an aging management program (AMP).*” [emphasis added]

At 20, Mr. Blanch adds, “*Based upon more than 40 years of engineering, operation and design experience, I am aware there are cables within the scope of 10 CFR 54.4 and 10 CFR 54.21 that operate from less than 1000 volts to 35,000 volts.*”

[emphasis added]

At 23, Mr. Blanch offers for purposes of clarification, “Based on my review of 10 C.F.R. § 54.21(a)(1), and 10 CFR § 54.4, electrical cables are clearly included within the scope of § 10 CFR 54, *irrespective of the applied voltage.*” [emphasis added]

At 29, Mr. Blanch explains for purposes of clarification, “*Seabrook has experienced cable failures submerged cables within the scope of 10 CFR 54*” [emphasis

added].

At 33, Mr. Blanch cures a simple omission with the addition of “*Appendix A.*”

At 41, an inadvertence is cured with the addition of the word “*passive.*”

At 45, Mr. Blanch offers for purposes of clarification, “*Figure 2.5-1 clearly illustrates that transformers are part of the SBO recovery path and there are numerous additional transformers within the scope of 10 CFR 54.4 that are not discussed in the LRA. There is no proposed AMP for these transformers.*”

At 57, Mr. Blanch adds in a footnote a few examples of safety-related pipe failure by way of clarification, “*Indian Point failure of Condensate Storage Tank buried piping and severe degradation of Salem Unit 1 AFW buried discharge piping.*”

Changes are not overall substantive in nature. The foregoing additions or changes to Mr. Blanch’s Declaration do not represent, even taken in total, any substantive change in that information (substantiated by expert declaration) that is adequate to put the licensee on notice as to the issues brought by the petitioners.

It is clear that Mr. Blanch and Friends/NEC have kept the introduction of information to a minimum necessary to maintain a narrative of their concerns. No new issues are raised.

By and large the changes incorporated in the Paul M. Blanch Declaration of December 6, 2010 are editorial in nature and serve only to provide the Board and the licensee with an appropriately more coherent and clear understanding of Friends/NEC’s technical position regarding technical/safety issues raised in its petition.

## **II. Correction to Severe Accident Mitigation Alternative (“SAMA”)**

**Contention** – One inadvertent dislocation and citation error occurred in the petition

regarding the SAMA contention, which led the Board to ask clarification. By way of follow-up on the Board's queries and hopefully to make the petition easier to apprehend, Friends/NEC offers the following citation correction

At Page 74, under Basis (first sentence)

Please strike citation made in error, ~~LRA, Appendix E, 2.10.~~

Please insert instead correct citation , LRA , Page F-158 –F.8.2 Uncertainty)<sup>2</sup>

Friends/NEC recognizes and regrets numerous other errors and defects in its Petition for Leave to Intervene and attendant pleadings (many of which have been pointed out by the Board); however, absent direction from the Board, Friends/NEC does not offer corrections for the body of its petition at this time, for fear that a multiplicity of large, multi-part filings would only cause more confusion than the corrections would correct.

**III. New Information-** On December 2, 2010, NRC issued, Information Notice 20 10-26: Submerged Electrical Cables, which is attached hereto as Friends/NEC Petition Supplement-Attachment Two.

In as much as numerous ASLB Panels and the Commission have consistently ruled that parties have an absolute obligation to promptly bring to the adjudicatory

---

<sup>2</sup> Seabrook Station Unit 1 Page F-158 License Renewal Application

**F.8.2 UNCERTAINTY**

Because the inputs to PRA cannot be known with complete certainty, there is the possibility that the actual plant risk is greater than the mean values used in the evaluation of the SAMA described in the previous sections. To consider this uncertainty, a sensitivity analysis was performed in which an uncertainty factor was applied to the frequencies calculated by the PRA and the subsequent upper bound (UB) benefits were calculated based upon the mean risk values multiplied by this uncertainty factor. The uncertainty factor applied is the ratio of the 95th percentile value of the CDF from the PRA uncertainty analysis to the mean value of the CDF. For Seabrook Station, the 95th percentile value of the CDF is 2.75E-05/yr; therefore, the uncertainty factor is 1.90. Table F.8-1 provides the benefit results from each of the sensitivities for each of the SAMA cases evaluated [emphasis added]

board's attention material new information<sup>3</sup>, Friends/NEC has attached Information Notice 20 10-26: Submerged Electrical Cables ("Notice") hereto as Friends/NEC Petition Supplement-Attachment Two.

The document is material because it affirms throughout Friend/NEC's concerns with the challenges to maintaining safety of submerged electrical cables.

Some specific and particular examples from the document test follow:

At page 5,

Cable failures have a variety of causes, including manufacturing defects, damage caused by shipping and installation, and exposure to electrical transients or abnormal environmental conditions during operation. Latent shield or insulation damage could result from errors during cable installation, which could be caused by cable jamming, cable pull-bys, cable sidewall bearing pressure, pulling cables through conduits and flexible conduit, or computerized cable routing system software routing cables through the wrong raceway. The likelihood of failure

---

<sup>3</sup> NRCStaff, and all parties have a duty to bring significant new information to the boards' attention. Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1), ALAB-738, 18 NRC 177, 197 n.39 (1983), rev'd in part on other grounds, CLI-85-2, 21 NRC 282 (1985), citing Tennessee Valley Authority (Browns Ferry Nuclear Plant, Units 1, 2 and 3), ALAB-677, 15 NRC 1387, 1394 (1982); Union Electric Co. (Callaway Plant, Unit 1), ALAB-750, 18 NRC 1205, 1210 n.11 (1983). Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station), CLI-93-3, 37 NRC 135, 152-53 n.46 (1993).

Parties and counsel must adhere to the highest standards in disclosing all relevant factual information to the Licensing Board. Material facts must be affirmatively disclosed. If counsel have any doubt whether they have a duty to disclose certain facts, they must disclose. Consumers Power Co. (Midland Plant, Units 1 & 2), LBP-81-63, 14 NRC 1768, 1778, 1795 (1981); Union Electric Co. (Callaway Plant, Unit 1), ALAB-750, 18 NRC 1205, 1210 n.11 (1983); Louisiana Power & Light Co. (Waterford Steam Electric Station, Unit 3), ALAB-786, 20 NRC 1087, 1092 n.8 (1984); Commonwealth Edison Co. (Braidwood Nuclear Power Station, Units 1 & 2), LBP-85-11, 21 NRC 609, 624 n.9 (1985), rev'd and remanded on other grounds, CLI-86-8, 23 NRC 241 (1986).

If a licensee or applicant has a reasonable doubt concerning the materiality of information in relation to its Board notification obligation or duties under Section 186 of the Atomic Energy Act, 42 U.S.C. § 2236a, the information should be disclosed for the Board to decide its true worth. Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1), ALAB-774, 19 NRC 1350, 1358 (1984), citing Duke Power Co. (William B. McGuire Nuclear Station, Units 1 & 2), ALAB-143, 6 AEC 623, 625 n.15 (1973) and Consumers Power Co. (Midland Plant, Units 1 and 2), ALAB-691, 16 NRC 897, 914 (1982), review declined, CLI-83-2, 17 NRC 69 (1983); Houston Lighting and Power Co. (South Texas Project, Units 1 and 2), LBP-85-6, 21 NRC 447, 461 (1985); General Public Utilities Nuclear Corp. (Three Mile Island Nuclear Station, Unit 1), LBP-86-14, 23 NRC 553, 560 (1986).

from any of these factors increases over time as the cable insulation degrades and/or is exposed to water. (emphasis added)

At page 5 and 6,

The NRR staff reviewed the available operating experience of cable failures and observed that some cables at nuclear power plants, which were qualified for 40 years through licensees' equipment qualification programs, were failing before the end of the qualified life of the cables. The staff identified 23 licensee event reports and two morning reports from 1988 to 2004 that described failures of buried medium-voltage alternating current and low-voltage direct current power cables that resulted from insulation failure. In most of the reported cases, the failed cables had been in service for 10 years or more. The NRR staff confirmed that the subject issue was applicable in accordance with 10 CFR Part 50 for operating reactors.

At Page 6

Cables are not typically designed or qualified for submergence unless they are procured as submarine cables. Demonstration that a cable is designed or qualified for long-term submergence (i.e., submerged in water continuously or for extended periods of time) requires a qualification test report or certification from the cable vendor. The industry's previously conducted post-loss-of-coolant accident cable submergence tests do not demonstrate qualification for long-term cable submergence, and the use of the Arrhenius methodology by some licensees to demonstrate qualification for long-term cable submergence is invalid. For areas in which cables could be submerged, the licensee should identify and demonstrate that these cables are designed or qualified by documented testing for the required duration. (emphasis added)

At Page 7

Some licensees have attempted to periodically drain the accumulated water from the cable surroundings to avoid cable failures. In some cases, the water quickly refilled the cavity in areas in which the water table was above the base level of a cable trench or underground vault. In other cases, water accumulated seasonally (e.g., because of snowfall or rain), filling the conduit or raceways. In both cases, periodic draining could slow the rate of insulation degradation, but it may not prevent cable degradation.

Although the Notice does not directly address license renewal applications it does speak to the topical content, or lack thereof, in the LRA with which this proceeding is concerned.

It should be self-evident that aging management programs that cannot assure reliability and function during present operation are not made whole by inclusion in a LRA AMP.

Friends/NEC believes the Notice to be material in its entirety to the question of the validity of the Friends/NEC on aging management of electrical cables and now hopes

that the Board will review the Notice in that light.

#### **IV. Conclusion**

Again, Friends/NEC deeply regrets any inconvenience, concern, or confusion caused by its first heavily flawed filing and now states that it has taken positive steps within its organization to ensure all pleadings in the future are properly prepared and timely filed.

Respectfully submitted,

*Signed electronically*

---

Raymond Shadis  
Pro se Representative  
Friends of the Coast  
New England Coalition  
Post Office Box 98  
Edgecomb, Maine 04556  
[Shadis@prexar.com](mailto:Shadis@prexar.com)  
207-882-7801