UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 14, 2017

LICENSEE: NextEra Energy Seabrook, LLC

FACILITY: Seabrook Station, Unit No. 1

SUBJECT: SUMMARY OF NOVEMBER 17, 2017, MEETING WITH NEXTERA ENERGY SEABROOK REGARDING LICENSE AMENDMENT REQUEST ON ALKALI-SILICA REACTION - REQUESTS FOR ADDITIONAL INFORMATION (CAC NO. MF8260; EPID L-2016-LLA-0007)

On November 17, 2017, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of NextEra Energy Seabrook, LLC (NextEra, the licensee) at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss with NextEra the path to resolution for the stage three requests for additional information (RAIs) related to the NRC staff's review of the alkali-silica reaction (ASR) license amendment request (LAR) for Seabrook Station, Unit No. 1 (Seabrook). The meeting notice and agenda, dated November 2, 2017, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML17306A764. A list of attendees is enclosed.

The LAR proposes to change the Seabrook licensing basis with a methodology to account for the effects of ASR in seismic Category I structures. A portion of this methodology describes a tiered approach of structural evaluations based on the level of ASR impact on each building. The different tiers are called stages one, two, and three, with stage three being the most complex evaluation. By letter dated October 11, 2017 (ADAMS Accession No. ML17261B217), the NRC staff issued RAIs regarding stage three evaluations. The meeting focused on the licensee's discussion of its responses to the stage three RAIs.

The meeting started with the licensee's presentation (ADAMS Accession No. ML17341A062). NextEra began with an overview of its ASR evaluation process and its methodology document. NextEra explained that the methodology document provides a consistent, repeatable approach for performing all three stages of analyses described in the LAR. NextEra specified that the methodology document provides actions when ASR deformation approaches limits and provides monitoring parameters and threshold limits. NextEra indicated that the methodology document provides supplements to the code of record with justifications. The NRC staff stated that if any of the supplements to the code of record are other industry codes or later additions to American Concrete Institute (ACI) 318, "Building Code Requirements for Structural Concrete and Commentary," the methodology document and updated final safety analysis report should clearly state the appropriate sections of these codes and ensure that any related requirements are met. NextEra indicated that the loads and factored loads are supplemented to include ASR loads and load factors and that ASR load factors provide safety margins consistent with the original code of record. The NRC staff asked the licensee about the recalculation of the seismic loading. NextEra indicated that it does not expect the seismic loading to change because the frequency of the building is not expected to change.

As a result of the NRC staff's RAIs, NextEra discussed in detail its stage three evaluation process. The NRC staff questioned the difference between field measurements and field observations. NextEra stated that the field measurements are to be used as inputs to the model, and that the field observations will be used to calibrate the model. The NRC staff commented that the field observations should include an acceptance criteria for validation. As part of the discussion of its RAI responses, NextEra indicated that the use of moment redistribution for structures will be in accordance with ACI 318-71, Section 8.6, and that the 100-40-40 method will not be considered for calculating seismic demand for any Seismic Category I structures. With regard to the NRC staff's RAIs on structural elasticity, NextEra stated that compliance with the ACI Code, as supplemented by its methodology document, will ensure that structures behave elastically and that the rebar and concrete stresses and strains will remain within acceptable limits. NextEra concluded by discussing its schedule and the completion percentage for its structure deformation analyses. The NRC staff agreed with NextEra that the methodology document will be submitted on December 10, 2017, as an attachment to the RAI response.

Members of the public were in attendance and had questions/comments as follows.

Mr. Ray Lutz asked about the determination of threshold values of the ASR. The NRC staff directed him to slide 8 of the licensee's presentation for details on the threshold parameters and limits. Mr. Lutz commented that the response to RAI number 8 did not address the NRC staff's question. The NRC staff thanked Mr. Lutz and indicated that his comments will be taken into consideration as part of the NRC staff's review.

Ms. Donna Gilmore asked if there were areas of the potentially affected facilities that were beyond the practical limits of current inspection technology, and if so, how they were being addressed to ensure continued safety of those concrete-based systems. Ms. Gilmore commented that she had participated in an NRC 2-day workshop on concrete vulnerabilities, and that some of the challenges in addressing those areas included limitations of available inspection technology that can be used in the nuclear environment. In addition, Ms. Gilmore commented regarding the potential need for a seismic reevaluation. She indicated that seismic evaluations have assumptions about the conditions of the facility and that it would seem that if margins are being changed, then the seismic evaluation would need to be reanalyzed. She stated that, if seismic impacts were not reanalyzed, then an explanation regarding why they were not reanalyzed should be provided. Ms. Gilmore stated that Seabrook is vulnerable to earthquakes above a 6.0 magnitude. The NRC staff thanked Ms. Gilmore for her comments and indicated that the meeting was about pre-decisional information and that her comments will be taken into consideration as part of the NRC staff's review.

Ms. Ruth Thomas asked if the effect of radiation was factored into the evaluation. In addition, Ms. Thomas asked how she could obtain the documents related to the LAR and indicated that she did not have computer access. The NRC staff thanked Ms. Thomas for her input and indicated that her comments will be taken into consideration as part of the NRC staff's review. In addition, the NRC staff directed Ms. Thomas to the Public Document Room by stating that she could call 301-415-7000 for access to the public documents related to the LAR. No Public Meeting Feedback forms were received.

Please direct any inquiries to me at 301-415-2048 or Justin.Poole@nrc.gov.

Justin C. Poole, Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosure:
List of Attendees

cc w/Enclosure: Distribution via Listserv

LIST OF ATTENDEES

NOVEMBER 17, 2017, MEETING WITH NEXTERA ENERGY SEABROOK

REGARDING LICENSE AMENDMENT REQUEST ON ALKALI-SILICA REACTION

REQUESTS FOR ADDITIONAL INFORMATION

SEABROOK STATION, UNIT NO. 1

NRC Participants:

- Brian Wittick, Branch Chief, NRR/Division of Engineering (DE)/Structural Engineering Branch (ESEB)
- George Thomas, Senior Structural Engineer, NRR/DE/ESEB
- Bryce Lehman, Structural Engineer, NRR/DE/ESEB
- Angela Buford, Structural Engineer, NRR/DE/ESEB
- Justin Poole, Project Manager, Division of Operating Reactor Licensing, NRR/DORL
- Luissette Candelario, Project Manager, NRR/DORL
- Anita Ghosh, Senior Attorney, Office of the General Counsel (OGC)
- Jeremy Wachutka, Attorney, OGC
- Jacob Philip, Senior Geotechnical Engineer, Division of Engineering, Office of Research
- James Danna, Branch Chief, NRR/DORL/Plant Licensing Branch I
- Eric Benner, Deputy Director, NRR/DORL
- Shana Helton, Deputy Director, NRR/DE
- Jose Pires, Senior Level Advisor, Division of Engineering, Office of Research (RES)
- Madhumita Sircar, Senior Structural Engineer, Division of Engineering, RES
- Fred Bower, Branch Chief, Region 1, Division of Reactor Projects, Branch 3*
- Peter Meier, Resident Inspector, Region 1, Division of Reactor Projects, Branch 3*
- Neil Sheehan, NRC Public Affairs, Region 1*
- Richard Morante, Brookhaven National Laboratory*
- Joseph Braverman, Brookhaven National Laboratory*

NextEra Participants:

- Ken Browne, Licensing Manager, Seabrook Station
- Edward Carley, Seabrook Engineering Supervisor
- Jackie Hulbert, Seabrook License Renewal
- Steven Hamrick, Seabrook Attorney
- Said Bolourchi, Senior Principal, SGH
- John Simons, General Manager, MPR
- Jeff Sobotka, Seabrook Design Engineering
- Andrew Sarawit, Senior Project Engineer, SGH
- Steve Catron, Nextera FPL
- Amanda Card, Engineer, MPR*
- James Moroney, Project Manager, MPR*
- Paul Bessette, Attorney, Morgan Lewis*

Enclosure

Public:*
- Donna Gilmore, San Onofre Safety
- Ray Lutz
- Marvin Lewis
- Ace Hoffman
- Natalie Hildt Treat, C-10 Research and Education Foundation (C-10)
- Diane Teed, C-10
- Debbie Grinnell, C-10
- Chris Nord
- Patricia Borchmann

* participated by teleconference

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ADAMS Accession No.: ML17340A186

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NAME	LCandelario	JPoole	LRonewicz	JDanna	JPoole
DATE	12/08/2017	12/11/2017	12/07/2017	12/13/2017	12/14/2017

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