



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
2100 RENAISSANCE BLVD., SUITE 100  
KING OF PRUSSIA, PA 19406-2713

December 23, 2015

**LICENSEE:** NextEra Energy Seabrook, LLC

**FACILITY:** Seabrook Station, Unit 1

**SUBJECT:** SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON  
DECEMBER 22, 2015, BETWEEN THE NRC AND NEXTERA  
CONCERNING A REQUEST FOR ADDITIONAL INFORMATION  
PERTAINING TO SEABROOK STATION OPERABILITY  
DETERMINATIONS FOR THE ALKALI-SILICA REACTION (ASR)-  
AFFECTED CONTAINMENT ENCLOSURE BUILDING AND THE  
RESIDUAL HEAT REMOVAL EQUIPMENT VAULT

The NRC Region I and Division of License Renewal staffs and representatives of NextEra Seabrook Station held a telephone conference call on December 22, 2015 to discuss and clarify the NRC's request for additional information concerning the ongoing operability evaluations for ASR-affected structures at Seabrook Station. The telephone conference call was useful in clarifying the purpose and scope of the ongoing Problem Identification and Resolution (PI&R) inspection of this issue and the additional information requested by the staff to complete the inspection.

Enclosure 1 provides the list of participants and Enclosure 2 contains the list of questions and information requested of NextEra to support the staff's inspection effort.

Docket No. 50-443  
License No. NPF-86

**Enclosures:**

1. List of Participants
2. Question and Information Request

[ADAMS ML15357A326](#)

**ENCLOSURE 1**

Telephone Conference Call  
Seabrook Station, Unit 1

List of Participants  
December 22, 2015

<u>Participants</u>	<u>Affiliation</u>
Mel Gray	NRC
William Cook	NRC
Paul Cataldo	NRC
Chris Newport	NRC
Angela Buford	NRC
Bryce Lehman	NRC
Michael Collins	NextEra
Brian Brown	NextEra
Al Dodds	NextEra
Rick Noble	NextEra
Ted Vasallo	NextEra
Ken Browne	NextEra
Mike Ossing	NextEra

## ENCLOSURE 2

### Seabrook Station – 4<sup>th</sup> Quarter PI&R Sample Inspection - December 22, 2015

#### **Containment Enclosure Building (CEB) Local Deformation – Root Cause Evaluation (CR 2014325) Review - Questions**

- 1) What is the role of the Finite Element Analysis (FEA) with respect to a CEB structural analysis (FP 100985) and its applicability to an update/revision to the open Prompt Operability Determination (POD) for the CEB (AR 01664399)?
- 2) If used in support of an update/revision to the POD, provide a comprehensive description of the FEA, with applicable inputs, assumptions and outputs, to the NRC staff for review.
- 3) The following are specific FEA review issues/questions of interest to the NRC staff include:
  - a) What variable or input to the FEA was used to mimic ASR expansion (reference p. 12);
  - b) What variable or input to the FEA was used to mimic backfill ASR expansion and what load values were used/assumed and the basis for those values (reference p. 15);
  - c) An ASR-attributed expansion value of between 0.03 and 0.14% was used to represent the circumferential growth and associated deformation in the FEA. What is the rationale for applying this block/wall design expansion value to a cylindrical design model? And, what conservatisms or uncertainties are introduced as a result? (p. 14);
  - d) How was the FEA model developed and validated? How was it derived and/or compared to the original UE&C design/construction model and the 2012 CEB FEA model used to inform POD AR 01664399?
- 4) What is the basis for the conclusion that CEB bulk expansion, and associated deformation has plateaued (p.38)? Absent conclusive evidence, what monitoring is planned or in place to validate this conclusion and provide assurance that further deformation does not compromise CEB structural performance?
- 5) What is the significance of the FEA model output identifying that the deformation values at +22 foot – azimuth 210 and +119 foot (Springline) are not consistent with actual field measurements (p.15)? What additional actions and/or field measurements does NextEra have planned in order to address this apparent disparity?
- 6) How will the results of the FEA be used to update the CEB POD, beyond the assessment of the seismic gaps? Specifically, has the CEB deformation and the assumed backfill ASR expansion (and associated loading) added any additional loads on the ASR-affected structures that potentially undermine the current POD margins analyses?

- 7) Based upon NextEra's proposed methodology for bulk expansion and deformation monitoring, what acceptance criteria, thresholds, or triggers will be established to prompt follow-up corrective actions or further structural evaluations?
- 8) The current PODs for ASR-affected structures highlight that ASR is a localized phenomenon. How does the FEA modeling assumption of uniformly applied ASR expansion across various elevations and assumed expansion rates impact the validity of the FEA and the validity of the current margins-based PODs for all ASR-affected structures?
- 9) What physical evidence supports your conclusion that the CEB deformation is attributable to ASR? This question relates to question 8) above. To date, we understand that only four cores have been removed from the CEB and there are a limited number of CCI locations being used for ASR monitoring. Absence a broader sampling of cores and petrographic exams, what confidence does NextEra staff have that the bulk expansion and associated deformations observed are appropriately associated with ASR, albeit a localized phenomenon?
- 10) Does NextEra plan to update the docketed Integrated ASR Corrective Action Plan with the results of the CEB RCE?
- 11) Is there (or are there plans to develop) an assessment of impact of global deformation in terms of rebar stress, including pre-stress, to understand the impact of this structural attribute on the current licensing basis (CLB) limits?

### **RHR Vault Operability Update - Questions**

- 1) FP100903, Condition Assessment of Cracking in the RHR and CS Equipment Vault, identifies ASR as the probable cause for the structural cracking and observed deformations. FP 100903, Section 5.2, refers to UE&C design calculation set No. PB-30 with respect to a limited structural analysis. Does NextEra plan to update/revise the current RHR Vault POD based upon the insights provided by FP100903?
- 2) If revising the RHR Vault POD, provide the supporting structural analysis for NRC staff review. Include the specific modeling assumptions and associated calculations for the interior through-wall crack (discontinuity) at the minus 26-foot elevation.
- 3) Please provide an update on the progress of NextEra's corrective actions and associated monitoring efforts for the RHR Vault.