



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

February 10, 2014

Mr. Kevin Walsh, Site Vice President
c/o Michael Ossing
Seabrook Station
NextEra Energy Seabrook, LLC
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 – REQUEST FOR ADDITIONAL
INFORMATION FOR LICENSE AMENDMENT REQUEST 13-05, "FIXED
INCORE DETECTOR SYSTEM ANALYSIS METHODOLOGY"
(TAC NO. MF2751)

Dear Mr. Walsh:

By letter dated September 10, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13260A160), NextEra Energy Seabrook, LLC (NextEra) submitted license amendment request (LAR) 13-05 for Seabrook Station, Unit No. 1 (Seabrook). The proposed amendment will modify the Seabrook Technical Specifications (TS). Specifically, the proposed amendment will revise TS 6.8.1.6.b, "Core Operating Limits Report," by adding Areva Licensing Report ANP-3243P, "Seabrook Station, Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," dated July 31, 2013 (ADAMS Accession No. ML13260A161), which supplements and modifies the previously approved methodology. The proposed change also modifies the surveillance requirements associated with the heat flux hot channel factor and nuclear enthalpy rise hot channel factor to include revised uncertainty values when measurement is obtained using the fixed incore detector system.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is required to complete its review. The NRC staff's request for additional information (RAI) is contained in the enclosure. A draft of these questions was previously sent to Mr. Gary Kilby of your staff on January 29, 2014, with an opportunity to have a teleconference to ensure that the licensee understood the questions and their regulatory basis, as well as to verify that the information was not previously docketed.

Enclosure 2 transmitted herewith contains sensitive, unclassified information. When separated from Enclosure 2, this document is decontrolled.

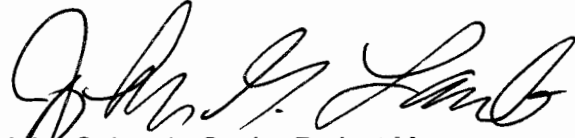
K. Walsh

- 2 -

A conference call was held on February 3, 2014, and Mr. Mike Ossing agreed that NextEra would respond to the RAI in 30 days from the date of the letter. Please note that if you do not respond to the RAI within 30 days from the date of the letter, or provide an acceptable alternate date in writing, the NRC staff may reject your LAR under the provisions of Title 10 of the *Code of Federal Regulations*, Section 2.108, "Denial of application for failure to supply information."

If you have questions, you can contact me at 301-415-3100 or by e-mail at john.lamb@nrc.gov.

Sincerely,



John G. Lamb, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosures:

1. RAI (public)
2. RAI (non-public)

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REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST 13-05

NEXTERA ENERGY SEABROOK, LLC.

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

Proprietary information pursuant to
Title 10 of the Code of Federal Regulations (10 CFR) Section 2.390
has been redacted from this document.
Redacted information is identified by blank space enclosed within double brackets
as shown here **[[]]**.

Enclosure 1

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REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST 13-05

NEXTERA ENERGY SEABROOK, LLC.

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

By letter dated September 10, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13260A160), NextEra Energy Seabrook, LLC (NextEra) submitted license amendment request 13-05 for Seabrook Station, Unit No. 1 (Seabrook). The proposed amendment will modify the Seabrook Technical Specifications (TS). Specifically, the proposed amendment will revise TS 6.8.1.6.b, "Core Operating Limits Report," by adding Areva Licensing Report ANP-3243P, "Seabrook Station, Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," dated July 31, 2013 (ADAMS Accession No. ML13260A161), which supplements and modifies the previously approved methodology. The proposed change also modifies the surveillance requirements associated with the heat flux hot channel factor and nuclear enthalpy rise hot channel factor to include revised uncertainty values when measurement is obtained using the fixed incore detector system.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is necessary to complete its review under TAC No. MF2751.

REQUEST FOR ADDITIONAL INFORMATION (RAI)

1. Describe the post modification testing program that is used to ensure that any manufacturing differences from the original equipment manufacturer process do not create deviations from the original platinum incore detector specifications.
2. Describe what periodic validation will be done, if any, to:
 - a. Ensure that the uncertainty components listed in Table 3 of ANP-3243P (page 37) remain applicable to the Seabrook reactor over the remainder of the reactor's lifetime.
 - b. Ensure that the proposed depletion correction factor, which is empirically based of historical data, continues to be representative for the new platinum incore detectors.

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3. In Figure 5-2 of 32-9161509-000, Seabrook Cycle 14 2-D/3-D incore detector root mean square (RMS) errors, the trend of RMS errors versus core average burnup is significantly higher at beginning of life, trends downward, and stabilizes after ~6 GWd/MT in core average burnup.

[[

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- a. Explain this systematic behavior of 2-D/3-D incore detector RMS errors versus core average burnup.
 - b. Demonstrate whether this bias is seen versus the instrumented assembly's assembly average burnup.
 - c. Explain why it is acceptable to apply a single RMS error value for an entire cycle in the calculation of F_{dh} and F_q uncertainty when the average RMS is non-conservative for early in cycle (e.g., use of 3-D average RMS value of [[]] in Equation 6 and 2-D average RMS value of [[]] in Equation 7 are not representative of actual RMS values calculation for Seabrook in the first ~ 5 Gwd/MT of cycle exposure).
4. Explain and justify the removal of the 39 state points in the uncertainty analysis. What criteria were used to exclude state points? How are the state points covered by the current thermal limits surveillance methodology?

5. Explain how the depletion correction factor (DCP) and the uncertainty on DCP are directly or indirectly accounted for in the uncertainty analysis.
6. Explain the difference in the calculation of neutron conversion factor (NCF) and/or application of the NCF differs from the previously approved method.
7. Explain the application of the DCP and NCF to the overall system used in process of surveillances of F_{dh} , F_q , and axial flux difference. Provide a block diagram of the hardware, software, and plant procedures used by these surveillances, as discussed during the January 2014 audit.

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K. Walsh

- 2 -

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If you have questions, you can contact me at 301-415-3100 or by e-mail at john.lamb@nrc.gov.

Sincerely,

/ra/

John G. Lamb, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosures:

- 1. RAI (public)
- 2. RAI (non-public)

cc w/encl: Distribution via Listserv

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RidsNRRDorlLpl1-2 Resource
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ADAMS Accession Numbers: Package/ML14034A366; Letter & Public RAI/ML14028A194;
Non-public RAI/ML14034A381 *via email

OFFICE	LPL1-2/PM	LPL1-2/LA	SNPB/BC	LPL1-2/BC
NAME	JLamb	ABaxter*	JDean*	MKhanna
DATE	2/06/14	2/4/14	1/29/14	2/10/14

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