



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

July 25, 2012

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

SUBJECT: SEABROOK STATION, UNIT 1 - REQUEST FOR ADDITIONAL INFORMATION
REGARDING LICENSE AMENDMENT REQUEST TO CHANGE
APPLICABILITY OF TECHNICAL SPECIFICATION PRESSURE-
TEMPERATURE LIMITS TO 23.7 EFFECTIVE FULL-POWER YEARS
(TAC NO. ME7645)

Dear Mr. Walsh:

By letter dated November 17, 2011, NextEra Energy Seabrook, LLC (NextEra or the licensee) submitted a license amendment request (LAR) for Seabrook Station, Unit 1 (Seabrook). The LAR proposes to revise the applicability period for the technical specification pressure-temperature (P-T) limits and cold overpressure protection system (COPS) setpoints from 20 effective full-power years (EFPY) to 23.7 EFPY, based on an updated neutron fluence evaluation. The actual P-T limits and COPS setpoints are unchanged by the proposed LAR.

The U.S. Nuclear Regulatory Commission (NRC) has determined that additional information is required to complete its review. The NRC staff's request for additional information (RAI) is contained in the enclosed RAI. A draft of these questions was previously sent to Mr. Michael O'Keefe of your staff with an opportunity to have a teleconference to ensure that the questions were understandable, the regulatory basis was clear, and to determine if the information was previously docketed. Calls were held on June 18 and July 23, 2012, and Mr. Michael O'Keefe of your staff agreed that NextEra would respond to the RAI by September 27, 2012. Please note that if you do not respond to the RAI by September 27, 2012, the NRC staff may reject your request under the provisions of Title 10 of the *Code of Federal Regulations*, Section 2.108, "Denial of application for failure to supply information."

K. Walsh

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If you have questions, you can contact me at 301-415-3100 and/or John.Lamb@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "John G. Lamb". The signature is fluid and cursive, with the first name "John" being the most prominent.

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

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST TO CHANGE APPLICABILITY OF
TECHNICAL SPECIFICATION PRESSURE-TEMPERATURE LIMITS
NEXTERA ENERGY SEABROOK, LLC
SEABROOK STATION, UNIT 1
DOCKET NUMBER 50-443

By letter dated November 17, 2011 (Agencywide Documents and Management System (ADAMS) Accession No. ML11329A017), NextEra Energy Seabrook, LLC (NextEra or the licensee) submitted a license amendment request (LAR) for Seabrook Station, Unit 1 (Seabrook). The LAR proposes to revise the applicability period for the technical specification pressure-temperature (P-T) limits and cold overpressure protection system (COPS) setpoints from 20 effective full-power years (EFPY) to 23.7 EFPY, based on an updated neutron fluence evaluation. The actual P-T limits and COPS setpoints are unchanged by the proposed LAR.

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 provided below.

1.0 BACKGROUND

The Seabrook Technical Specification (TS) P-T limits were established for 20 EFPY of facility operation using the methodologies documented in Westinghouse report WCAP-15745, "Seabrook Unit 1 Heatup and Cooldown Limit Curves for Normal Operation," December 2001. WCAP-15745 was provided in an enclosure to Seabrook's October 11, 2002, LAR (ADAMS Accession No. ML022940024) to implement the current TS P-T limit curves for 20 EFPY. The 20 EFPY P-T limit curves were calculated using adjusted RT_{NDT} values for the limiting reactor vessel (RV) beltline shell material, Lower Shell Plate R-1808-1. By letter dated September 11, 2003 (ADAMS Accession No. ML032250621), the NRC staff issued Seabrook License Amendment No. 89, wherein the staff approved the implementation of the current TS P-T limit curves through 20 EFPY. The proposed LAR, which was submitted by letter dated November 17, 2011, revises the TS applicability period for the current P-T limits and COPS setpoints from 20 EFPY to 23.7 EFPY, based on an updated neutron fluence assessment.

Title 10 of the *Code of Federal Regulations*, (10 CFR) Part 50, Appendix G, Paragraph IV.A states that, "*the pressure-retaining components of the reactor coolant pressure boundary [RCPB] that are made of ferritic materials must meet the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code [ASME Code, Section III], supplemented by the additional requirements set forth in [paragraph IV.A.2, "Pressure-Temperature (P-T) Limits and Minimum Temperature Requirements"]...*" Therefore, 10 CFR Part 50, Appendix G requires that P-T limits be developed for the ferritic materials in the reactor vessel (RV) beltline (neutron fluence $\geq 1 \times 10^{17}$ n/cm², E > 1 MeV), as well as ferritic materials not in the RV beltline (neutron fluence < 1×10^{17} n/cm², E > 1 MeV). Further, 10 CFR Part 50,

Enclosure

Appendix G requires that all RCPB components must meet the ASME Code, Section III requirements. The relevant ASME Code, Section III requirement that will affect the P-T limits is the lowest service temperature requirement for all RCPB components specified in Section III, NB-2332(b).

2.0 ISSUE

P-T limit calculations for ferritic RCPB components that are not RV beltline shell materials may define P-T curves that are more limiting than those calculated for the RV beltline shell materials. This may be due to the following factors:

1. RV nozzles, penetrations, and other discontinuities have complex geometries that may exhibit significantly higher stresses than those for the RV beltline shell region. These higher stresses can potentially result in more restrictive P-T limits, even if the reference temperature (RT_{NDT}) for these components is not as high as that of RV beltline shell materials that have simpler geometries.
2. Ferritic RCPB components that are not part of the RV may have initial RT_{NDT} values, which may define a more restrictive lowest operating temperature in the P -T limits than those for the RV beltline shell materials.

3.0 REQUEST FOR ADDITIONAL INFORMATION

Describe how the P-T limit curves, and the methodology used to develop these curves, considered all RV materials (beltline and non-beltline) and the lowest service temperature of all ferritic RCPB materials, consistent with the requirements of 10 CFR Part 50, Appendix G.

K. Walsh

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If you have questions, you can contact me at 301-415-3100 and/or 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

Enclosure:
Request for Additional Information

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ADAMS Accession No.: ML121180084

*via memorandum

**via email

OFFICE	LPL1-2/PM	LPL1-2/LA	EVIB/BC	LPL1-2/BC	LPL1-2/PM
NAME	JLamb	ABaxter w/comments **	JPoehler for SRosenberg*	MKhanna	JLamb
DATE	6/ 9/2012	6/25/2012	6/18/2012	7/25/2012	7/25/2012

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