

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



January 9, 2015

Mr. Dean Curtland, Site Vice President
c/o Michael Ossing
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 REVISE THE TECHNICAL SPECIFICATION PRESSURE-TEMPERATURE LIMITS AND REQUEST FOR EXEMPTION FROM 10 CFR PART 50, APPENDIX G MINIMUM TEMPERATURE REQUIREMENTS (TAC NOS. MF4576 AND MF4577)

Dear Mr. Curtland:

By letter dated July 24, 2014 (Agencywide Documents Access and Management System Accession Number ML14216A404), NextEra Seabrook, LLC (NextEra or the licensee) requested an amendment to Facility Operating License Number NPF-86 for the Seabrook Station, Unit 1 (Seabrook). The proposed license amendment would revise the pressure-temperature (P-T) limits in Technical Specification 3.4.9.1, "Reactor Coolant System Pressure-Temperature Limits," to be applicable to 55 effective full-power years (EFPY). The licensee also requested an exemption from the applicable requirements of Title 10 of the *Code of Federal Regulations*, Part 50, Appendix G, to support the implementation of the proposed 55 EFPY P-T limits without the minimum temperature limitation for the reactor pressure vessel flange region.

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. Mike Ossing of your staff on December 5, 2014, with an opportunity to have a teleconference to ensure that NextEra understood the questions and their regulatory basis, as well as to verify that the information was not previously docketed.

A call was held on December 19, 2014, with Mr. Ossing of your staff, who agreed that NextEra would respond to the RAI within 60 days of the date of this letter. Please note that if you do not respond to the RAI by the agreed upon date, the NRC staff may reject your amendment under the provisions of Title 10 of the *Code of Federal Regulations*, Section 2.108, "Denial of application for failure to supply information."

***Enclosure 1 transmitted herewith contains sensitive unclassified information.
When separated from Enclosure 1, this document is decontrolled.***

D. Curtland

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The NRC staff has determined that Enclosure 1 contains proprietary information pursuant to 10 CFR 2.390. Accordingly, the staff has prepared a redacted, publicly available, non-proprietary version (i.e., Enclosure 2).

If you have any questions, please contact me at (301) 415-3100.

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

Enclosures:

1. Request for Additional Information (Proprietary)
2. Request for Additional Information (Non-Proprietary)

cc w/encl 2: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION REGARDING THE
LICENSE AMENDMENT REQUEST TO REVISE THE TECHNICAL SPECIFICATION
PRESSURE-TEMPERATURE LIMITS AND REQUEST FOR EXEMPTION FROM 10 CFR
PART 50, APPENDIX G MINIMUM TEMPERATURE REQUIREMENTS

NEXTERA ENERGY SEABROOK, LLC.

SEABROOK STATION, UNIT 1

DOCKET NUMBER 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 [[]].

1.0 SCOPE

By letter dated July 24, 2014 (Agencywide Documents Access and Management System Accession Number ML14216A404), NextEra Seabrook, LLC (NextEra or the licensee) requested an amendment to Facility Operating License Number NPF-86 for the Seabrook Station, Unit 1 (Seabrook). The proposed license amendment would revise the pressure-temperature (P-T) limits in Technical Specification (TS) 3.4.9.1, "Reactor Coolant System Pressure-Temperature Limits," to be applicable to 55 effective full-power years (EFPY). The licensee also requested an exemption from the applicable requirements of 10 CFR Part 50, Appendix G, to support the implementation of the proposed 55 EFPY P-T limits without the minimum temperature limitation for the reactor pressure vessel (RPV) flange region.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is required to complete its review.

2.0 REQUEST FOR ADDITIONAL INFORMATION

2.1 EXEMPTION REQUEST

2.1.1 Table 4-2 of WCAP-17444-P (the WCAP) lists values for the reference nil-ductility temperature (RT_{NDT}) for the Seabrook closure head region. [[

]] are measured heat-specific values from certified material test reports that were obtained in accordance with ASME Code, Section III, NB-2331 requirements. If not, identify whether NUREG-0800, Branch Technical Position

Enclosure 2

(BTP) 5-3, was used to establish the RT_{NDT} values listed in Table 4-2 for these base metal components. If BTP 5-3 was used, identify the specific position of that document that was used, and provide the calculations used to determine the RT_{NDT} for each of these materials.

2.1.2 [[

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2.1.3 Section 4 of the WCAP indicates that the stress analysis of the flange region was carried out with both temperature and pressure varying with time, for heatup and cooldown transients of 100 °F per hour. Additionally, the proposed TS P-T limits for 55 EFPY were developed based on a maximum allowable heatup and cooldown rate of 100 °F per hour.

[[

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2.1.4 [[

]] The NRC staff's calculations show that the fracture toughness increases as heatup progresses, reaching the upper shelf value of 200 ksi√in by 82 minutes. However, the staff is concerned that the applied K_I values could peak at some time between boltup and 82 minutes due to a combination of boltup stress plus pressure and thermal stresses while the toughness is still relatively low, resulting in a more limiting ratio of K_{IC} to 2 times K_I .

[[

]]

Provide the values of K_{IC} and K_I at several intermediate times between boltup and 82 minutes for the same location. If the most limiting ratio does not occur at boltup, provide the limiting K_{IC} to 2 times K_I ratio, the corresponding time, and the values of K_I and K_{IC} at that time.

2.2 LICENSE AMENDMENT REQUEST

2.2.1 The current TS P-T limit curves for 23.7 EFPY have margins to account for pressure and temperature instrument errors; the proposed 55 EFPY TS P-T limits do not have these margins.

Please address how instrumentation errors will be accounted for to ensure that the RCS is operated in accordance with the proposed TS P-T limits for 55 EFPY.

~~OFFICIAL USE ONLY — PROPRIETARY INFORMATION~~

D.Curtland

- 2 -

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If you have any questions, please contact me at (301) 415-3100.

Sincerely,

/RA/

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

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ADAMS Accession No: ML14363A367

***via memo dated December 22, 2014**

OFFICE	LPL1-2/PM	LPL1-2/PM	LPL1-2/LA*	EVIB/BC	LPL1-2/BC	LPL1-2/PM
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DATE	1/2/15	1/5/15	12/22/14	12/4/14	1/7/15	1/9/15

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