



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

April 4, 2013

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 NO. 1 - ISSUANCE OF AMENDMENT
REGARDING THE EXTENSION OF THE INSPECTION INTERVAL FOR THE
REACTOR COOLANT PUMP FLYWHEELS USING THE CONSOLIDATED LINE
ITEM IMPROVEMENT PROCESS (TAC NO. MF0464)

Dear Mr. Walsh:

The Commission has issued the enclosed Amendment No. 134 to Facility Operating License No. NPF-86 for the Seabrook Station, Unit No. 1 (Seabrook). This amendment consists of changes to the facility technical specifications (TSs) in response to your application dated December 20, 2012.

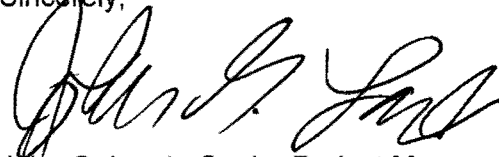
The amendment revises Seabrook TS 6.7.6.m, "Reactor Coolant Pump Flywheel Inspection Program." The amendment extends the reactor coolant pump (RCP) motor flywheel examination frequency from the currently approved 10-year inspection interval, to an interval not to exceed 20 years. The changes are consistent with Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-421, "Revision to RCP Flywheel Inspection Program (WCAP-15666)." The availability of this TS improvement was announced in the *Federal Register* on October 22, 2003, as part of the consolidated line item improvement process.

K. Walsh

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A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

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. Amendment No. 134 to NPF-86
2. Safety Evaluation

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NEXTERA ENERGY SEABROOK, LLC, ET AL.

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 134
License No. NPF-86

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by NextEra Energy Seabrook, LLC, et al., (the licensee) dated December 20, 2012, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

*NextEra Energy Seabrook, LLC is authorized to act as agent for the: Hudson Light & Power Department, Massachusetts Municipal Wholesale Electric Company, and Taunton Municipal Light Plant and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-86 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 134, and the Environmental Protection Plan contained in Appendix B are incorporated into the Facility License No. NPF-86. NextEra Energy Seabrook, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Meena K. Khanna, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the License

Date of Issuance: April 4, 2013

ATTACHMENT TO LICENSE AMENDMENT NO. 134

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

Replace the following page of Facility Operating License No. NPF-86 with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove
3

Insert
3

Replace the following pages of the Appendix A, Technical Specifications, with the attached revised page as indicated. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove
6-14a

Insert
6-14a

- (4) NextEra Energy Seabrook, LLC, pursuant to the Act and 10 CFR 30, 40, and 70, to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (5) NextEra Energy Seabrook, LLC, pursuant to the Act and 10 CFR 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
- (6) NextEra Energy Seabrook, LLC, pursuant to the Act and 10 CFR 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility authorized herein; and
- (7) DELETED

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

NextEra Energy Seabrook, LLC, is authorized to operate the facility at reactor core power levels not in excess of 3648 megawatts thermal (100% of rated power).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.134 *, and the Environmental Protection Plan contained in Appendix B are incorporated into the Facility License No. NPF-86. NextEra Energy Seabrook, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) License Transfer to FPL Energy Seabrook, LLC**

- a. On the closing date(s) of the transfer of any ownership interests in Seabrook Station covered by the Order approving the transfer, FPL Energy Seabrook, LLC**, shall obtain from each respective transferring owner all of the accumulated decommissioning trust funds for the facility, and ensure the deposit of such funds and additional funds, if necessary, into a decommissioning trust or trusts for Seabrook Station established by FPL Energy Seabrook, LLC**, such that the amount of such funds deposited meets or exceeds the amount required under 10 CFR 50.75 with respect to the interest in Seabrook Station FPL Energy Seabrook, LLC**, acquires on such dates(s).

* Implemented

** On April 16, 2009, the name "FPL Energy Seabrook, LLC" was changed to "NextEra Energy Seabrook, LLC".

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS

6.7.6 (Continued)

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREMAFS, operating at a flow rate of less than or equal to 600 CFM at a Frequency of 18 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 18 month assessment of the CRE boundary.
- e. The quantitative limits on unfiltered air in-leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air in-leakage measured by the testing described in paragraph c. The unfiltered air in-leakage limit for radiological challenges is the in-leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
- f. The provisions of SR 4.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered in-leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

m. Reactor Coolant Pump Flywheel Inspection Program

In addition to the requirements of Specification 4.0.5, each reactor coolant pump flywheel shall be inspected per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975 at least once every 20 years. In lieu of Position C.4.b(1) and C.4.b(2), this inspection shall be by either of the following examinations:

- a. An in-place examination, utilizing ultrasonic testing, over the volume from the inner bore of the flywheel to the circle of one-half the outer radius; or
- b. A surface examination, utilizing magnetic particle testing and/or penetrant testing, of the exposed surfaces of the disassembled flywheel.



UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 134 TO FACILITY OPERATING LICENSE NO. NPF-86

NEXTERA ENERGY SEABROOK LLC

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

1.0 INTRODUCTION

By application dated December 20, 2012, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12359A016), NextEra Energy Seabrook, LLC (NextEra, the licensee) requested changes to the technical specifications (TSs) for Seabrook Station, Unit 1 (Seabrook). The amendment revises Seabrook TS 6.7.6.m, "Reactor Coolant Pump Flywheel Inspection Program." The amendment extends the reactor coolant pump (RCP) motor flywheel examination frequency from the currently approved 10-year inspection interval, to an interval not to exceed 20 years. The changes are consistent with Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-421, "Revision to RCP Flywheel Inspection Program (WCAP-15666)." The availability of this TS improvement was announced in the *Federal Register* on October 22, 2003, as part of the consolidated line item improvement process (68 FR 60422).

2.0 REGULATORY EVALUATION

The function of the RCP in the reactor coolant system (RCS) of a pressurized-water reactor plant is to maintain an adequate cooling flow rate by circulating a large volume of primary coolant water at high temperature and pressure through the RCS. Following an assumed loss of power to the RCP motor, the flywheel, in conjunction with the impeller and motor assembly, provides sufficient rotational inertia to assure adequate primary coolant flow during RCP coastdown, thus resulting in adequate core cooling. A concern regarding the overspeed of the RCP and its potential for failure led to the issuance of Regulatory Guide (RG) 1.14, "Reactor Coolant Pump Flywheel Integrity," Revision 1, dated August 1975. RG 1.14 describes a method acceptable to the NRC staff of addressing concerns related to RCP vibration and the possible effects of missiles that might result from the failure of the RCP flywheel. The need to protect components important to safety from such missiles are included in General Design Criterion 4, "Environmental and Dynamic Effects Design Basis," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Licensing of Production and Utilization Facilities," which is applicable to plants that obtained their construction permits after May 21, 1971.

Specific requirements to have an RCP Flywheel Inspection Program consistent with RG 1.14 or previously issued relaxations from the RG are included in the Administrative Controls Section of the TSs. The purpose of the testing and inspection programs defined in the TSs is to ensure

that the probability of a flywheel failure is sufficiently small such that additional safety features are not needed to protect against a flywheel failure. The RG provides criteria in terms of critical speeds that could result in the failure of an RCP flywheel during normal or accident conditions. In addition to the guidance in RG 1.14, the NRC has more recently issued RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," which provides guidance and criteria for evaluating proposed changes that use risk-informed justifications.

A proposed justification for extending the RCP flywheel inspections from a 10-year inspection interval to an interval not to exceed 20 years was provided by the Westinghouse Owners Group (WOG) in topical report WCAP-15666, "Extension of Reactor Coolant Pump Motor Flywheel Examination," transmitted by letter dated August 24, 2001. The topical report addressed the proposed extension for all domestic WOG plants. The NRC accepted the topical report for referencing in license applications in a letter and safety evaluation dated May 5, 2003 (ADAMS Accession No. ML031250595).

3.0 TECHNICAL EVALUATION

TS 6.7.6.m, "Reactor Coolant Pump Flywheel Inspection Program," reflects the licensee's previous adoption of a TS change that defined the allowable alternative to the inspections described in RG 1.14. The inspections are defined as in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle of one-half the outer radius or an alternative surface examination (magnetic particle testing [MT] and/or liquid penetrant testing [PT]) of exposed surfaces defined by the volume of the disassembled flywheel. The allowable interval for these inspections was extended in the previous amendment to "approximately 10-year intervals coinciding with the Inservice Inspection schedule as required by American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code, Section XI." The change proposed in this amendment application would revise the allowable inspection interval to "20 year intervals."

The justification for the proposed change was provided in WCAP-15666, which the staff accepted for referencing in license applications by a letter and safety evaluation dated May 5, 2003. The topical report addresses the three critical speeds defined in RG 1.14: (a) the critical speed for ductile failure, (b) the critical speed for non-ductile failure, and (c) the critical speed for excessive deformation of the flywheel. The staff found that the topical report adequately addressed these issues and demonstrated that acceptance criteria, for normal and accident conditions defined in RG 1.14, would continue to be met for all domestic WOG plants following an extension of the inspection interval. The topical report also provided a risk assessment for extending the RCP flywheel inspection interval. The NRC staff's review, documented in the SE for the topical report, determined that the analysis methods and risk estimates are acceptable when compared to the guidance in RG 1.174.

In conclusion, the NRC staff finds that the regulatory positions in RG 1.14 concerning the three critical speeds are satisfied, and that the evaluation indicating that critical crack sizes are not expected to be attained during a 20-year inspection interval is reasonable and acceptable. The potential for failure of the RCP flywheel is, and will continue to be, negligible during normal and accident conditions. The change is therefore acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Hampshire and Massachusetts State officials were notified of the proposed issuance of the amendment. The State officials provided no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (78 FR 4473). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) There is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Lamb

Date: April 4, 2013

K. Walsh

- 2 -

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

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

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***via email**

OFFICE	LPL1-2/PM	LPL3-1/LAit	LPL1-2/LA	STSB/BC	LPL1-2/BC	LPL1-2/PM
NAME	JLamb	ELee	ABaxter*	RElliott	MKhanna	JLamb
DATE	03/04/2013	02/12 /2013	03/04/2013	04/03/2013	04/03/2013	04/04/2013

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