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

July 17, 2015

Mr. Dean Curtland, Site Vice President
c/o Mr. Michael Ossing
Seabrook Station, Unit 1
NextEra Energy Seabrook, LLC
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT REGARDING CHANGES TO TECHNICAL SPECIFICATION 3.3.3.1, "RADIATION MONITORING FOR PLANT OPERATIONS" (TAC NO. MF4572)

Dear Mr. Curtland:

The Commission has issued the enclosed Amendment No. 149 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 July 24, 2014, as supplemented by two letters dated December 11, 2014, and a letter dated June 30, 2015.

The amendment proposed changes to modify Seabrook TS 3.3.3.1, "Radiation Monitoring for Plant Operations," to eliminate a duplicate requirement, resolve an inconsistency, and correct a deficiency.

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

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. Amendment No. 149 to NPF-86
2. Safety Evaluation

cc w/enclosures: Distribution via Listserv

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

NEXTERA ENERGY SEABROOK, LLC, ET AL.*

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 149
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 July 24, 2014, as supplemented by letters dated December 11, 2014, and June 30, 2015, 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 Specificaitons 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. 149 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

Douglas A. Broaddus, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications
and Facility Operating License

Date of Issuance: July 17, 2015

ATTACHMENT TO LICENSE AMENDMENT NO. 149

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

Replace the following page of the Facility Operating License with the revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove	Insert
3	3

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

Remove	Insert
3/4 3-37	3/4 3-37

(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. 149 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".

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS

FUNCTIONAL UNIT	CHANNELS TO TRIP/ALARM	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	ACTION
1. Deleted					
2. Containment Ventilation Isolation					
a. Deleted					
b. Manipulator Crane Area Monitor	1	2	6#	**	23
3. Main Steam Line	1/steam line	1/steam line	1, 2, 3, 4	N.A.	27
4. Fuel Storage Pool Areas					
a. Fuel Storage Building Exhaust Monitor	N.A.	1	***	****	25
5. Control Room Isolation					
a. Air Intake-Radiation Level					
1) East Air Intake	1/intake	2/intake	All	****	24
2) West Air Intake	1/intake	2/intake	All	****	24
6. Primary Component Cooling Water					
a. Loop A	1	1	All	≤ 2 x Background	28
b. Loop B	1	1	All	≤ 2 x Background	28

TABLE NOTATIONS

** Two times background or 15 mR/hr, whichever is greater.
*** With irradiated fuel in the fuel storage pool areas.
**** Two times background or 100 CPM, whichever is greater.
# During CORE ALTERATIONS or movement of irradiated fuel within the containment.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 149

TO FACILITY OPERATING LICENSE NO. NPF-86

NEXTERA ENERGY SEABROOK, LLC.

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

1.0 INTRODUCTION

By letter dated July 24, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14209A919), as supplemented by two letters dated December 11, 2014 (ADAMS Accession Nos. ML14349A644 and ML14349A646), and June 30, 2015 (ADAMS Accession No. ML15182A419), NextEra Energy Seabrook, LLC (NextEra or the licensee) requested changes to the technical specifications (TSs) for Seabrook Station, Unit No. 1 (Seabrook). Specifically, the licensee requested to modify TS 3.3.3.1, "Radiation Monitoring for Plant Operations," to eliminate a duplicate requirement, resolve an inconsistency, and correct a deficiency. The supplements dated December 11, 2014, and June 29, 2015, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on September 30, 2014 (79 FR 58821).

By letter dated July 24, 2014 (ADAMS Accession No. ML13212A069) the NRC issued Amendment No. 141 to Facility Operating License No. NPF-86 for Seabrook, which modified Seabrook's TSs by relocating specific surveillance frequencies to a licensee-controlled program with implementation of Nuclear Energy Institute 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies." The changes were consistent with NRC-approved Technical Specification Task Force Traveler (TSTF)-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control – RITSTF [Risk-Informed Technical Specifications Task Force] Initiative 5b," It is noted that Seabrook has a Surveillance Frequency Control Program. As stated in its letter dated December 11, 2014, the licensee noted that Amendment No. 141 eliminated in its entirety Table 4.3.3 located on Seabrook TS page 3/4 3-39.

2.0 REGULATORY EVALUATION

2.1 Background

Containment Ventilation Isolation On-Line Purge Monitor

The containment on-line purge (COP) system provides filtered and heated air for purging the containment area during normal operation. The containment is normally maintained at a slight positive pressure by the system. If this system is in operation, the initial pressure inside containment is always positive as an initial starting condition. The COP system, in conjunction with the containment structure recirculation filter system, is designed to reduce the airborne activity levels in the containment below the limits specified in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20.

The COP penetrations each consist of a pipe sleeve (a rolled and welded pipe section, 8-inch outside diameter (OD) by 1/2-inch wall thickness). A short section of pipe with a nipple is welded to the sleeve on the outside of the containment, and a 3/4-inch valve and test connection is attached to it. The ends of this resulting assembly are welded to 8-inch weld neck flanges, which are through-bolted to the inner and outer isolation valves. The isolation valves are Safety Class 2, Seismic Category I. These valves are 8-inch diameter butterfly valves having fail-safe pneumatic operators. The weld between the pipe sleeve and the containment liner is equipped with a leak chase for pressure testing.

The COP system has inner and outer containment isolation valves in its supply (i.e., COP-V1 and COP-V2 at Containment Penetration Number 18) and exhaust (i.e., COP-V3 and COP-V4 at Containment Penetration Number 16) lines. Numerous signals, including automatic safety injection, manual containment spray actuation, manual Phase "A" containment isolation, and high radiation, initiate closure of the COP system isolation valves. The on-line purge monitor measures the activity of the air exhausted through the system and isolates the COP lines on a high radiation condition. The on-line purge monitor consists of two channels of safety-related radiation monitors supplied from Class 1E uninterruptible power supplies.

The containment isolation system has been designed in accordance with Regulatory Guide (RG) 1.11, "Instrument Lines Penetrating the Primary Reactor Containment," Design Criteria 54, 55, 56, and 57. Accordingly, it has been specifically designed to shut the isolation valves in the COP system upon detection of high radioactivity.

The isolation valve closure time for containment isolation valves COP-V1, COP-V2, COP-V3, and COP-V4 is 2 seconds. This time reflects the maximum time required to isolate a system so that radioactive release to the environs during a design basis accident (DBA) is within limits in 10 CFR Part 100.

Containment Air Purge and Heating System

The containment air purge (CAP) and heating system supplies ventilation air and heat to maintain tritium and ambient temperature within containment at acceptable levels during refueling. The purge system, operating in conjunction with the containment recirculation filter

subsystem, will reduce the airborne activity level within the containment below the levels specified in 10 CFR Part 20 within 24 hours following reactor shutdown.

The CAP system lines, which provide an open path from the containment environs, are equipped with radiation monitors that are capable of isolating these lines upon receipt of a high radiation signal, in addition to automatic safety injection actuation, manual containment spray actuation, and manual Phase "A" isolation signals.

The CAP penetrations (i.e., heating, ventilation, and air conditioning (HVAC)-1 and HVAC-2) consist of a pipe sleeve that is flanged at each end. The CAP penetrations each consist of a pipe sleeve (a rolled and welded pipe section, 36-inch OD by 1/2 inch wall thickness), which is flanged at each end with 36-inch weld neck flanges. Attached to these flanges is a butterfly valve inside containment and a testable blind flange outside containment. Together with the pipe, the blind flanges form a part of the containment pressure boundary during plant Modes 1, 2, 3, and 4. During Modes 5 and 6, the blind flanges are replaced by spool pieces to configure the CAP system to perform its heating and ventilation functions.

The variable sensed by the engineered safety features actuation system, which has spatial dependence, is the containment manipulator crane area radiation monitor. The spatial dependence of the radiation field associated with a fuel handling accident is considered in the placement of the radiation sensors on the containment manipulator crane. In this location, the sensors are as close as possible to a dropped fuel assembly, while remaining above water level in the refueling canal.

In the event of a fuel handling accident and high radiation in containment, the redundant manipulator crane area radiation monitors (i.e., Channels 6535 A and B), in conjunction with safeguards actuation signals, isolate the COP purge and offline CAP isolation valves and the trip containment air pre-entry, refueling supply, and COP purge fans. Indication and alarm are provided locally and in the main control room.

The containment isolation system has been designed in accordance with RG 1.11 and GDC 54, 55, 56, and 57. Accordingly, it has been specifically designed to shut the isolation valves in the CAP system upon detection of high radioactivity.

Control Room Air Intake Radiation Monitors

The control room ventilation system, which includes redundant emergency cleanup subsystems, prevents the buildup of airborne particulates and radioactive iodines in the control room complex during an accident. Two remote air intakes (east and west), with two radiation monitors in each intake, are provided to furnish makeup air to the control room complex. The locations were selected to preclude both intakes from being susceptible to accident-generated airborne radioactivity or toxic gases at the same time.

Four detectors (i.e., two detectors per radiation monitor Channels 6506A and 6506B) are located in the east air intake piping and four detectors (i.e., two detectors per radiation monitor Channels 6507A and 6507B) are located in the west air intake piping (ADAMS Accession No. ML14349A644). These detectors are located in the control and diesel building. These Geiger-Muller Class 1E detectors monitor the control room air intake and automatically shut

down, on a high radiation signal, the control room ventilation fans and isolation dampers. Each monitor utilizes a two-out-of-two detector logic, such that two detectors must be in alarm before the monitor initiates an isolation signal. These detectors are directly mounted in the air intake stream and do not require shielding.

During normal plant operation, the makeup air system is aligned to deliver outside air to the control room from both remote intakes, and the emergency cleanup fans are idle with their discharge dampers closed. High radiation at either remote air intake actuates both emergency cleanup fans and trips the normal makeup air fans.

The control scheme of the normal makeup air fans and dampers is "cross-trained" to ensure automatic isolation, regardless of any single active failure. This means detection of high radiation in either intake by Train A monitor or actuation of the Train A emergency makeup air fan will trip the Train A normal makeup air fan and close the discharge damper downstream of the Train B normal makeup air fan. Detection of high radiation in either intake by either the Train B monitor or actuation of the Train B emergency makeup air fan will trip the Train B normal makeup air fan and close the discharge damper downstream of the Train A normal makeup air fan. This "cross-trained" design also ensures that the normal makeup air subsystem automatically isolates on an outage or failure of either vital electrical bus.

Containment Post Loss-of-Coolant Accident Area Monitor

The containment post-loss-of-coolant accident (LOCA) area monitors are ion chamber type radiation detectors. The two redundant Class 1E monitors are provided to monitor containment conditions under accident situations. The detector range is 1 through 1E08 roentgen equivalent man (rem)/hour. The detectors are located on the steam generator biological shield wall. The locations were selected to provide the detectors as large a view of containment as possible, consistent with affording ease of access for maintenance and calibration. The instruments are used to ensure sufficient information is available on selected plant parameters to monitor and assess plant variables following an accident.

2.2 Technical Specification Changes

The proposed TS changes include the following for TS Table 3.3-6, "Radiation Monitoring Instrumentation for Plant Operations":

1. Delete Functional Unit 1.a, Containment - Post LOCA Area Monitor.

2. Delete Functional Unit 2.a, On Line Purge Monitor.

3. Delete the current wording of the table notation associated with the Alarm/Trip Setpoint for Functional Unit 2.a: "* Two times background; purge rate will be verified to ensure compliance with [offsite dose calculation manual] ODCM Control C.7.1.1 requirements."

4. In table notation #, change the word "movements" to "movement."

2.3 Regulatory Review

The regulatory requirements, criteria, and guidance applied by the NRC staff in the review of the proposed changes are as follows:

Appendix A to 10 CFR Part 50 – General Design Criteria for Nuclear Power Plants.

Criterion 13 – *Instrumentation and control.* Instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.

Criterion 19 – *Control room.* A control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. Equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

Criterion 54 - *Piping systems penetrating containment.* Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities, which reflect the importance to safety of isolating these piping systems. Such piping systems shall be designed with a capability to test periodically the operability of the isolation valves and associated apparatus and to determine if valve leakage is within acceptable limits.

Criterion 56 - *Primary containment isolation.* Each line that connects directly to the containment atmosphere and penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

(1) One locked closed isolation valve inside and one locked closed isolation valve outside containment; or

(2) One automatic isolation valve inside and one locked closed isolation valve outside containment; or

(3) One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or

(4) One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to the containment as practical and upon loss of actuating power, automatic isolation valves shall be designed to take the position that provides greater safety.

Criterion 64 – *Monitoring radioactivity releases.* Means shall be provided for monitoring the reactor containment atmosphere, spaces containing components for recirculation of loss-of-coolant accident fluids, effluent discharge paths, and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents.

10 CFR 50.36(c)(2)(ii) - A technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:

(A) *Criterion 1.* Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

(B) *Criterion 2.* A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

(C) *Criterion 3.* A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

(D) *Criterion 4.* A structure, system, or component, which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

10 CFR Part 100, Section 100.11(a)(1) - An exclusion area of such size that an individual located at any point on its boundary for 2 hours immediately following onset of the postulated fission product release would not receive a total radiation dose to the whole body in excess of 25 rem (see Note) or a total radiation dose in excess of 300 rem (see Note) to the thyroid from iodine exposure.

NOTE: The whole body dose of 25 rem referred to above corresponds numerically to the once in a lifetime accidental or emergency dose for radiation workers which, according to National Council on Radiation Protection and Measurements recommendations, may be disregarded in the determination of their radiation exposure status (see National Bureau of Standards

Handbook 69, dated June 5, 1959). However, neither its use nor that of the 300 rem value for thyroid exposure as set forth in these site criteria guides are intended to imply that these numbers constitute acceptable limits for emergency doses to the public under accident conditions. Rather, this 25 rem whole body value and the 300 rem thyroid value have been set forth in these guides as reference values, which can be used in the evaluation of reactor sites with respect to potential reactor accidents of exceedingly low probability of occurrence and low risk of public exposure to radiation.

10 CFR 100.11(a)(2) - A low population zone of such size that an individual located at any point on its outer boundary who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage) would not receive a total radiation dose to the whole body in excess of 25 rem or a total radiation dose in excess of 300 rem to the thyroid from iodine exposure.

The NRC staff used the regulatory guidance provided in applicable sections of the following documents in performing this review:

- TSTF-51-A, Revision 2, "Revise Containment Requirements During Handling Irradiated Fuel and Core Alterations" (ADAMS Accession No. ML040400343)

- NUREG-1431, Revision 4, "Standard Technical Specifications: Westinghouse Plants" (ADAMS Accession No. ML12100A222)

- NUREG-0800 Branch Technical Position 6-4, Revision 3 – March 2007, "Containment Purging During Normal Plant Operations"

- NUREG-0800, Standard Review Plan (SRP) 6.2.4, Revision 3 – March 2007, "Containment Isolation System"

The NRC staff also reviewed the Seabrook Updated Final Safety Analysis Report (UFSAR) for verification of design basis input.

3.0 TECHNICAL EVALUATION

3.1 Proposed Change to Functional Unit 2.a - Containment Ventilation Isolation On-Line Purge Monitor

Technical Specification Table 3.3-6

1. Delete Functional Unit 2.a, On-Line Purge Monitor.

FUNCTIONAL UNIT	CHANNELS TO TRIP/ALARM	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	ACTION
2. Containment Ventilation Isolation					
a. ~~On Line Purge Monitor~~ Deleted	~~1~~	~~2~~	~~1, 2, 3, 4~~	~~*~~	~~23~~

2. Delete the table notation associated with the Alarm/Trip Setpoint for Functional Unit 2.a.

TABLE NOTATIONS

~~* Two time background; purge rate will be verified to ensure compliance with ODCM Control C.7.1.1 Requirements~~

TS 3.3.3.1, "Radiation Monitoring for Plant Operations," and TS 3.3.2, "Engineered Safety Features Actuation System Instrumentation," provide requirements for the containment ventilation isolation on-line purge monitor. These requirements are represented in Table 3.3-6 as Functional Unit 2.a and Tables 3.3-3 and 3.3-4 as Functional Unit 3.C.4. With the exception of the instrument trip setpoints, the requirements for the monitor in both TSs are essentially the same.

The Seabrook containment ventilation COP system has a pair of 8-inch containment penetrations for reactor on-line purging. The two containment penetrations each contain two resiliently-seated butterfly-type isolation valves, one inside the primary containment and the other located outside the primary in the secondary containment annulus. The 8-inch valves are qualified as capable of closure under the dynamic conditions of a DBA: LOCA or main steam line break. The valves are provided with fail-close, solenoid pilot-valve-actuated air cylinder operators and automatic isolation actuation instrumentation.

NUREG-0800, SRP 6.2.4, Section II, "SRP Acceptance Criteria," 13 states:

> To improve the reliability of the isolation function, addressed in GDC 56 system lines, which provide open paths from the containment to the environs (e.g., purge, evacuation, and vent lines addressed in 10 CFR 50.34(f)(2)(xiv)) should be equipped with radiation monitors capable of isolating these lines upon a high-radiation signal, which should not be considered a diverse containment isolation parameter.

The proposed change to Functional Unit 2.a deletes the on-line purge monitor from TS 3.3.3.1, because TS 3.3.2 provides essentially the same requirements for the instrument with the exception of the trip setpoints. However, the setpoint (i.e., "< 2 x Background) specified in TS 3.3.2, Table 3.3-4, which will be retained in the TSs, is more conservative than the setpoint (i.e., "Two times background; purge rate will be verified to ensure compliance with the Offsite Dose Calculation Manual (ODCM) Control C.7.1.1 requirements") in TS 3.3.3.1.

In NRC Request for Additional Information (RAI)-2, the NRC staff invoked the TS 3.3.3.1, Table 3.3-6, "Table Notation" (i.e., associated with the "Alarm/Trip Setpoint" of "*"), which reads in its entirety, "*Two times background; purge rate will be verified to ensure compliance with ODCM Control C.7.1.1 requirements." The NRC staff noted that with the proposed change to Functional Unit 2.a, which is the requirement to verify that the purge rate is in compliance with the ODCM Control C.7.1.1 requirements, would be deleted. The NRC staff inquired as to the regulatory justification for the deletion of this TS requirement.

NextEra provided a comprehensive response by letter dated December 11, 2014, which reads, in part:

> The footnote proposed for deletion is a procedural detail related to implementation of the requirements in the ODCM, which contains the TS required Radioactive Effluent Controls Program. As discussed in GL 89-01 [i.e., implementation of programmatic and procedural controls for radiological effluent TSs], the programmatic requirements in the administrative section of the TS and the ODCM establish appropriate controls for the requirements related to radiological effluents. Seabrook TS 6.7.6.g requires that the Radioactive Effluent Controls Program include limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM. Therefore, NextEra concludes that the footnote associated with the setpoint for the containment on line purge monitor can be removed from the TS because TS 6.7.6.g and the ODCM provide adequate controls that ensure the limits on radioactive gaseous effluents are not exceeded."

Based on the detailed response, the NRC staff concluded that Seabrook's Radioactive Effluent Controls Program adequately controls the operability of radioactive liquid and gaseous monitoring instrumentation and that the Functional Unit 2.a requirement to verify that the purge rate is in compliance with ODCM Control C.7.1.1 requirements could be deleted from the TSs.

TS 3.3.3.1, Action 23, refers to containment ventilation isolation valves, while Action 16 in TS 3.3.2 refers to the containment purge supply and exhaust valves; however, the two actions are referring to the same valves. The containment ventilation systems include the CAP and COP systems. As discussed in Section 2.0, "Regulatory Evaluation," and displayed in UFSAR Table 6.2-83, the CAP containment penetrations (i.e., HVAC-1 and HVAC-1 as listed in UFSAR Table 6.2-83 and shown on Figure 6.2-91, Sheet 10) are isolated by a blind flange in Modes 1 through 4, so the associated 36-inch valves do not perform a containment isolation function during Modes 1 through 4. The valves referenced in both Actions 23 and 16 are the four COP system containment isolation valves (i.e., 8-inch Supply Valves COP-V1 & COP-V2 at Containment Penetration X-18 and COP-V3 and COP-V4 at Containment Penetration X-16 as

listed in UFSAR Table 6.2-83 and shown on Figure 6.2-91, Sheet 10). These are the only containment ventilation system valves that perform a containment isolation function in Modes 1 through 4. The four COP valves are listed in Technical Requirement 6, "Containment Isolation Valves," in the Seabrook Technical Requirements Manual.

The containment isolation system has been designed in accordance with RG 1.11 and 10 CFR Part 50, Appendix A, Design Criteria 54, 55, 56, and 57. General Design Criterion (GDC) 64 provides requirements for monitoring radioactive releases within containment. Of these regulatory requirement and guidance documents, only Design Criteria 54, 56, and 64 are relevant to the discussion of the proposed TS change to Functional Unit 2.a.

NUREG-0800, SRP 6.2.4, Section II, "SRP Acceptance Criteria," 20 reads in part, "In meeting 10 CFR 50.34(f)(2)(xv) purging requirements, the regulatory guidance of BTP [Branch Technical Position] 6-4, "Containment Purging During Normal Plant Operations," should be used to establish compliance with this regulation."

Per BTP 6-4, "Containment Purging During Normal Plant Operations," Position B.1.E:

> As required by GDC 54, the containment isolation provisions for the purge system lines should meet the standards appropriate to engineered safety features (i.e., quality, redundancy, testability and other appropriate criteria) to reflect the importance to safety of isolating these lines. GDC 56 establishes explicit requirements for isolation barriers in purge system lines.

NUREG-0800, SRP 6.2.4, Section II, "SRP Acceptance Criteria," 18 reads, in part, with respect to GDC 54, "...The isolation valve testing program should be consistent with that proposed for other engineered safety features. ..."

Therefore, the selected retention of Functional Unit 3.c.4 in Tables 3.3-3 and 3.3-4 of TS 3.3.2, "Engineered Safety Features Actuation System Instrumentation," and the deletion of Functional Unit 2.a from Table 3.3-6 of TS 3.3.3.1, "Radiation Monitoring Instrumentation for Plant Operations," are appropriate.

NUREG-0800, SRP 6.2.4, Section II, "SRP Acceptance Criteria," 14 reads, in part:

> Containment isolation valve closure times should be selected for rapid isolation of the containment following postulated accidents. ... For lines providing open paths from the containment to the environs (e.g., the containment purge and vent lines), isolation valve closure times of five seconds or less may be necessary. The closure times of these valves should be established to minimize the release of containment atmosphere to the environs, to mitigate the offsite radiological consequences, and to prevent degradation of emergency core cooling system effectiveness by reduced containment back-pressure.

As noted in Section 2.0 above, the isolation valve closure time for containment isolation valves COP-V1, COP-V2, COP-V3, and COP-V4 is 2 seconds. This time reflects the maximum time required to isolate a system so that radioactive release to the environs during a design basis accident is within the limits of 10 CFR Part 100.

The requirement of a more conservative "Trip Setpoint" of "< 2 x Background" in Table 3.3-4 of TS 3.3.2 initiates the closure of these isolation valves at an earlier point in time in the applicable accident scenarios. Therefore, the guidance of SRP 6.2.4, SRP Acceptance Criteria 14, is satisfied.

The proposed change to TS 3.3.3.1 deletes Functional Unit 2.a from Table 3.3-6. With the exception of the minor difference in the trip setpoints, the change eliminates duplicate requirements. From the review of the requirements of GDC 54, 56, and 64, and the review of the engineered safety features instrumentation requirements for Functional Unit 3.c.4 contained in Tables 3.3-3 and 3.3-4 of TS 3.3.2, the NRC staff concludes that all three criteria are satisfied, given the more conservative "Trip Setpoint" of "< 2 x Background." With regard to the trip setpoint, the NRC staff finds the proposed change acceptable, because it retains the more conservative setpoint of "less than two times background" and eliminates the setpoint of "two times background."

The NRC staff has reviewed NextEra Energy's safety analysis and the proposed TS changes to TS 3.3.3.1, "Functional Unit 2.a - Containment Ventilation Isolation On-Line Purge Monitor," against the requirements of GDC 54, 56, and 64, and the guidance of SRP 6.2.4 and BTP 6-4. Based on this review, the NRC staff concludes that the changes to TS 3.3.3.1, "Functional Unit 2.a," are acceptable.

3.2 Proposed Change to Functional Units 5.a.1 and 5.a.2, Control Room East/West Isolation Air Intake Radiation Level

By letter dated June 30, 2015, the licensee withdrew the proposed change to Functional Units 5.a.1 and 5.a.2.

3.3 Proposed Change to Functional Unit 1.a, Containment Post LOCA Area Monitor

The requirements for the containment post-LOCA area monitors are currently contained in TS LCO 3.3.3.1, "Radiation Monitoring for Plant Operations," and TS LCO 3.3.6, "Accident Monitoring Instrumentation." The licensee proposed to delete the requirements contained in TS LCO 3.3.3.1 so that control of the instruments is located in one single LCO. No changes to TS LCO 3.3.6 are being proposed.

The licensee stated that the Bases for Seabrook TS LCO 3.3.3.1 contain a discussion that operability of the radiation monitoring instrumentation for plant operation ensures that the associated action will be initiated when the radiation level reaches the monitor's setpoint, the specified coincidence logic is maintained, and sufficient redundancy is maintained to permit a channel to be out-of-service for testing or maintenance. The licensee further stated that the function of the containment post-LOCA area radiation monitor is not aligned with the Bases for TS 3.3.3.1. The function of the post-LOCA area radiation monitor is post-accident monitoring, which is more appropriately controlled under TS LCO 3.3.6.

TS 3.3.6 specifies operability of the accident monitoring instrumentation to ensure sufficient information is available on selected plant parameters to monitor and assess plant variables following an accident. The primary purpose of the post-accident monitoring instrumentation is to display unit variables that provide information required by the control room operators during accident situations.

TS LCO 3.3.6 requires the containment post-LOCA area monitors to be operable in Modes 1, 2, and 3. TS LCO 3.3.3.1 requires the containment post-LOCA area monitors to be operable in Modes 1 – 6. The licensee stated that the current requirement to maintain operability of the monitors through Mode 6 is unnecessarily restrictive and extends beyond the plant conditions for which accident monitoring instrumentation is necessary. The NRC staff requested additional information regarding the change in applicability requirements for these monitors. The licensee responded by letter dated December 11, 2014. In its response, the licensee stated that the proposed applicability requirements were consistent with the guidance contained in NUREG-1431, Revision 4.

The NRC staff reviewed the deletion of the operability requirements for the containment post-LOCA area radiation monitors from TS 3.3.3.1 and finds that appropriate controls for the operability of the monitors are provided by TS 3.3.6. The NRC staff concluded that the function of the monitors is not aligned with the underlying purpose of TS LCO 3.3.3.1. The monitors provide indication only and do not actuate any equipment when the monitor setpoint is reached.

The NRC staff reviewed the Bases for the post-accident monitoring (PAM) TSs contained in the standard TSs. The Bases state that the post-accident monitoring instrumentation LCO is applicable in Modes 1, 2, and 3. These variables are related to the diagnosis and pre-planned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in Modes 1, 2, and 3. In Modes 4, 5, and 6, unit conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore, the PAM instrumentation is not required to be operable in these modes.

Based on the discussion provided above, the NRC staff finds the change to TS LCO 3.3.3.1 to delete the requirements applicable to the containment post-LOCA radiation monitor consistent with the regulations and guidance documents listed in Section 2.3 above, and is, therefore, acceptable.

3.4 Proposed Change to Containment Manipulator Crane Area Monitor Requirements

In the original application, the licensee proposed changes to the requirements for the containment manipulator crane area monitor. By letter dated December 11, 2014, in response to the NRC staff's RAI, the licensee withdrew the request for modification to these requirements.

3.5 Additional Changes

The license amendment request, dated July 24, 2014, included proposed changes to Table 4.3.3. As stated in the letter dated December 11, 2014, Amendment No. 141 eliminated Table 4.3.3 in its entirety.

The license amendment request, dated July 24, 2014, included a proposed editorial change to Table 3.3-6, the table notation #, to change the word "movements" to "movement." The NRC finds this editorial change acceptable.

3.6 Technical Conclusion

The NRC staff finds that the proposed changes to Functional Unit 2.a, "On-Line Purge Monitor" and Functional Units 5.a.1 and 5.a.2, "Control Room East/West Air Intake Radiation Level" of TS Table 3.3-6, "Radiation Monitoring Instrumentation for Plant Operations," satisfy the relevant regulatory requirements and guidance (e.g., GDC, RGs, NUREGs, etc.) of Section 2.0. Accordingly, the NRC staff concludes that the subject changes to the TSs for Seabrook are 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 requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or 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 NRC has previously issued a proposed finding that the amendment involves no significant hazards consideration published on September 30, 2014 (79 FR 58821), and there has been no public comment on such finding. 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 Contributors: D. Nold
M. Chernoff

Date: July 17, 2015

July 17, 2015

Mr. Dean Curtland, Site Vice President
c/o Mr. Michael Ossing
Seabrook Station, Unit 1
NextEra Energy Seabrook, LLC
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT REGARDING CHANGES TO TECHNICAL SPECIFICATION 3.3.3.1, "RADIATION MONITORING FOR PLANT OPERATIONS" (TAC NO. MF4572)

Dear Mr. Curtland:

The Commission has issued the enclosed Amendment No. 149 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 July 24, 2014, as supplemented by two letters dated December 11, 2014, and a letter dated June 30, 2015.

The amendment proposed changes to modify Seabrook TS 3.3.3.1, "Radiation Monitoring for Plant Operations," to eliminate a duplicate requirement, resolve an inconsistency, and correct a deficiency.

A copy of the related 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

Enclosures:
1. Amendment No. 149 to NPF-86
2. Safety Evaluation

cc w/enclosures: Distribution via Listserv

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ADAMS Accession No.: ML15096A131 *by memo

OFFICE	LPL1-2/PM	LPL1-2/LA	SCVB/BC*	STSB/BC*	EICB/BC*
NAME	JLamb	LRonewicz	RDennig	REIliott	JThorp
DATE	7/14/2015	7/14/2015	2/2/2015	4/28/2015	5/5/2015
OFFICE	OGC	LPL1-2/BC	LPL1-2/PM		
NAME	STurk	DBroaddus (TLamb for)	JLamb		
DATE	7/8/2015	7/17/15	7/17/15		

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