NEXTera® ENERGY SEABROOK

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10 CFR 50.90

SBK-L-14202

Docket No. 50-443

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Seabrook Station

Response to Request for Additional Information Regarding License Amendment 14-03
Changes to Technical Specification 3.3.3.1, Radiation Monitoring for Plant Operations

References:

1. NextEra Energy Seabrook, LLC letter SBK-L-14080, "License Amendment Request14-03, Changes to Technical Specification 3.3.3.1, Radiation Monitoring for Plant Operations," July 24, 2014 [ADAMS Accession No. ML14209A919]

2. NRC letter "Seabrook Station, Unit 1- Request for Additional Information Regarding License Amendment 14-03, Changes to Technical Specification 3.3.3.1, 'Radiation Monitoring for Plant Operations' (TAC No. MF4572)," October 30, 2014 [ADAMS Accession No. ML14276A431]

In Reference 1, NextEra Energy Seabrook, LLC (NextEra) requested a license amendment request (LAR) to change the Technical Specifications (TSs) for Seabrook Station. The proposed LAR would modify TS 3.3.3.1, "Radiation Monitoring for Plant Operations." In Reference 2, the NRC staff requested additional information to complete its review of the LAR.

The Enclosure to this letter contains NextEra's response to the request for additional information. As discussed in the Enclosure, NextEra is withdrawing the proposed changes in TS 3.3.3.1, Radiation Monitoring for Plant Operations, related to the manipulator crane area radiation monitor. The Attachment to the Enclosure provides a revised markup of the TS page affected by elimination of this proposed change. The revised markup supersedes the corresponding page provided in Reference 1. The modifications to the proposed changes in this response to the NRC

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staff's request for additional information do not alter the conclusion in Reference 1 that the changes do not present a significant hazards consideration.

The Station Operation Review Committee has reviewed this supplement to LAR 14-03.

No new commitments are included in this letter.

Should you have any questions regarding this letter, please contact Mr. Michael Ossing, Licensing Manager, at (603) 773-7512.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 12/11/14, 2014.

Sincerely,

NextEra Energy Seabrook, LLC

R Dodds III

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Site Vice President

Enclosure

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Enclosure to SBK-L-14202

Response to Request for Additional Information Regarding License Amendment 14-03
Changes to Technical Specification 3.3.3.1, Radiation Monitoring for Plant Operations

Enclosure

Response to Request for Additional Information (RAI)

ARCB-RAI-1

In a letter dated November 7, 2013 (ADAMS Accession No. ML 13246A358), the NRC staff informed the Technical Specifications Task Force (TSTF) of concerns that the NRC staff had recently identified during a review of plant-specific license amendments requesting adoption of three travelers including traveler TSTF-51, Revision 2, "Revise Containment Requirements during Handling Irradiated Fuel and Core Alterations" (ADAMS Accession No. ML040400343). In a letter dated July 24, 2014, page 9 of the LAR states that the proposed change is consistent with TSTF-51-A.

TSTF-51 states, in part, that:

The addition of the term "recently" associated with handling irradiated fuel in all of the containment function Technical Specification requirements is only applicable to those licensees who have demonstrated by analysis [emphasis added] *that after sufficient radioactive decay has occurred, off-site doses resulting from a fuel handling accident remain below the Standard Review Plan limits (well within 10 CFR 100)* [or 10 CFR 50.67].

NUREG-0800, Standard Review Plan (SRP) 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," dated July 2000 (ADAMS Accession Number ML003734190), states, in part, that:

> *The models, assumptions, and parameter inputs used by the licensee should be reviewed to ensure that the conservative design basis assumptions outlined in RG-1.183 have been incorporated.*

Appendix B of Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors" (ADAMS Accession Number ML003716792), Regulatory Position 1.1 states, in part, that:

> *The number of fuel rods damaged during the accident should be based on a conservative analysis that considers the most limiting case.*

After reviewing the information submitted by NextEra that is consistent with TSTF-51, the NRC staff would like to review an analysis that shows that the fuel handling accident (FHA) doses remain within regulatory limits (when references to Core Alterations and irradiated fuel are removed from the TSs). The analysis cited on page 9 of the LAR (Amendment No. 94, dated October 3, 2003, ADAMS Accession Number ML032740512) does not appear to consider an inoperable Manipulator Crane Area Monitor with movement of loads other than irradiated fuel assemblies (such as sources, new fuel, tools or reactivity components).

a. For the proposed change, please provide an FHA analysis that evaluates the dropping of loads allowed over irradiated fuel assemblies (i.e., sources, new fuel or reactivity control components) onto irradiated fuel assemblies with an inoperable Manipulator Crane Area Monitor. The analysis should only credit those safety systems required to be operable as required by TS. Provide the inputs, assumptions and methodology used, and the results. Provide a justification for any assumptions made. Although it is not required, the NRC staff has found it more efficient if the licensee's calculation is provided.

b. The LAR cites Amendment No. 94 as a justification for the proposed LAR, but Amendment No. 94 does not appear to support the current licensing basis. In Amendment No. 100, dated February 24, 2005 (ADAMS Accession Number ML050320373), a revised FHA was approved. At the time the revised FHA was approved, it appears that TS 3.3.3.1 required instrumentation that initiates containment ventilation isolation. Without the isolation of the containment purge system operable, radioactivity from the FHA could be released from the containment purge and exhaust system. Amendment No. 100 assumes the containment personnel hatch is the release pathway. Justify why releases from the containment and purge exhaust system (with an inoperable containment purge system) result in FHA doses that are lower than those from the containment personnel hatch.

Response to ARCB-RAI-1

NextEra is withdrawing the proposed change that revises the table notation associated with "Applicable Modes" for the manipulator crane area monitor (Functional Unit 2.b) in Technical Specification (TS) 3.3.3.1, Radiation Monitoring for Plant Operations, Table 3.3-6.

Attached to this enclosure is a revised markup of the TS page affected by elimination of this proposed change. The revised markup supersedes the corresponding page provided in Reference 1.

Following submittal of this amendment request, Amendment 141 to the Seabrook TS eliminated Table 4.3-3, Radiation Monitoring Instrumentation for Plant Operations Surveillance Requirements. Therefore, the markup of Table 4.3-3 originally provided with this amendment request should be discarded.

ARCB-RAI-2

TS 3.3.3.1 requires two operable channels of the containment post-Loss-of-Coolant Accident (LOCA) area radiation monitor in Modes 1 through 6. On the other hand, TS 3.3.3.6, "Accident Monitoring Instrumentation" (AMI), only requires operability of the monitor in Modes 1, 2. and 3. NextEra stated that deleting the monitor from TS 3.3.3.1 is justified,

because TS 3.3.3.6 specifies the appropriate requirements for the monitor [AMI]. NextEra also stated that plant conditions in Modes 4, 5, and 6 are such that the likelihood of an event that would require AMI instrumentation is low; therefore, the AMI instrumentation is not required.

Reasonable assurance of adequate protection cannot be based solely on the probability of the accident occurring or risk. Current TSs like TS 3.4.8, "Specific Activity," are APPLICABLE in Modes 1-5, because design basis accidents (i.e., Main Steamline Break, Steam Generator Tube Rupture) can occur in MODES other than 1-3. Therefore, the NRC staff requests that the licensee provide an additional justification why the current APPLICABILITY of ALL MODES should be removed from the TS for the AMI.

Response to ARCB-RAI-2

The proposed change to revise the Mode of Applicability for the containment area radiation monitors to Modes 1, 2, and 3 is justified on the basis of the low likelihood of an event that would require accident monitoring instrumentation in Modes 4, 5, and 6. As discussed in chapters 7 and 12 of the Seabrook Updated Final Safety Analyses Report (UFSAR), the containment area radiation monitors are IEEE Class 1E, Design Category 1 instruments with the function of monitoring containment conditions following a loss of coolant accident. Seabrook Technical Specification (TS) 3.3.3.6, Accident Monitoring Instrumentation, which controls the containment area radiation monitors, provides the necessary controls and applicability for these instruments in Modes 1, 2, and 3.

NUREG-0800, Standard Review Plan (SRP), Section 16.0, Technical Specifications, discusses that the NRC staff has prepared standard technical specifications (STS) for each of the light–water reactor nuclear steam supply systems and balance-of-plant systems. Industry proposed changes to the STS can only be implemented with agreement from the NRC staff. In discussing acceptance criteria regarding TS, the SRP finds that proposed plant–specific TS satisfy 10 CFR 50.34, 10 CFR 50.36, and 10 CFR 50.36a and are therefore acceptable if consistent with the regulatory guidance of the applicable STS. Further, the SRP states that *In TS change requests for facilities with TS based on previous STS, licensees should comply with comparable provisions in these STS NUREGs to the extent possible or justify deviations from the STS.*

The RAI asserts that "Reasonable assurance of adequate protection cannot be based solely on the probability of the accident occurring or risk." However, the NRC has established its position in NUREG-1431, Standard Technical Specifications for Westinghouse Plants, that the basis for applicability of a TS limiting condition for operation (LCO) is the likelihood of an event. TS 3.3.3, PAM Instrumentation, in NUREG-1431 requires operable accident monitoring instrumentation in Modes 1, 2,

and 3. The Bases for TS 3.3.3 discuss that 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. Other examples in NUREG-1431 where LCO applicability is based on likelihood or probability of occurrence are TS 3.4.15, RCS Leakage Detection Instrumentation; and TS 3.6.1, Containment. TS 3.4.15 is not applicable in Modes 5 and 6 because the likelihood of leakage and crack propagation is much smaller. Similarly, the containment is not required to be operable in Modes 5 and 6 because the probability and consequences of an accident that could cause a release of radioactive material to containment are reduced.

The RAI states "Current TSs like TS 3.4.8, "Specific Activity," are APPLICABLE in Modes 1-5, because design basis accidents (i.e., Main Steamline Break, Steam Generator Tube Rupture) can occur in MODES other than 1-3." This is inconsistent with the NRC staff's position in NUREG-1431. The Applicability section of the Bases for TS 3.3.3 in NUREG-1431 discusses that the accident monitoring instrumentation is for variables related to the diagnosis and pre-planned actions required to mitigate design basis accidents (DBAs). The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In addition, the various TS-required systems and components that are provided to mitigate design basis accidents, such as engineered safety features actuation instrumentation, emergency core cooling systems, containment systems, cooling water systems, ultimate heat sink, etc., are only required to be operable in Modes 3 or 4 and higher.

Seabrook TS 3.4.8 is currently applicable in Modes 1 through 5 based on NUREG-0452, a 1980's version of the standard TS for Westinghouse plants. However, the NRC staff's updated regulatory guidance in NUREG-1431 only applies TS 3.4.16, RCS Specific Activity, in Mode 3 with RCS temperature at 500 degrees or higher, and in Modes 1 and 2. The Seabrook Bases for TS 3.4.8 recognize that reducing RCS temperature to less than 500°F prevents the release of activity following a steam generator tube rupture since the saturation pressure of the reactor coolant is below the lift pressure of the atmospheric steam relief valves. Similarly, the Bases in NUREG-1431 regarding the Applicability of TS 3.4.16 state that the release of radioactivity in the event of a SGTR is unlikely in Mode 3 below 500 degrees and in Modes 4 and 5 since the saturation pressure of the reactor coolant is below the lift pressure settings of the main steam safety valves. This is another example where the NRC staff's regulatory guidance supports the position that Applicability of a TS LCO is based on the likelihood of occurrence of an event.

As discussed in the SRP, the NRC has established NUREG-1431 (for Westinghouse plants) as the guidance that ensures the TSs meet regulatory requirements. Further, the staff expects licensees with TS based on a previous version of the STS to comply with the current STS or justify the deviations. While the Seabrook TS were originally

based on the standard TS in NUREG-0452, the proposed change is consistent with TS 3.3.3 and its Bases in NUREG-1431.

Based on (1) the SRP acceptance criteria that concludes plant-specific TS satisfy applicable regulatory requirements and are acceptable if they are consistent with the regulatory guidance in the STS, and (2) the various Bases in NUREG-1431 that reflect the NRC position that likelihood or probability of an event serves as the basis for the Applicability of LCOs, NextEra concludes that the proposed change is appropriately and adequately justified.

SCVB-RAI-1

This RAI is regarding the "Proposed Change to Functional Units 5.a.1 and 5.a.2, Control Room East/West Isolation Air Intake Radiation Level."

The following excerpt comes from Page 5 of the Enclosure to the LAR dated July 24,2014 (ADAMS Accession No. ML 14209A919).

> 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 following excerpt comes from Page 28, Section 12.3, Revision 15 of the Seabrook Station UFSAR (ADAMS Accession No. ML 13134A088- Document Date April 26, 2013):

> Control Room Air Intake Monitors- Channels 6506A and B, 6507A and B
>
> Four detectors (Channels 6506A and B, 6507A and B) are located in the east air intake piping and four detectors are located in the west air intake piping. These detectors are located in the Control and Diesel Building. These GM detectors, which are Class 1E, 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.

The LAR details two radiation monitors in each intake. The Updated Final Safety Analysis Report (UFSAR) details four radiation detectors each in both the east and west air intake piping.

Please identify which document is correct.

Response to SCVB-RAI-1

Both documents are correct. Each air intake is provided with two radiation monitors and four detectors. For example, two radiation monitors, RM 6506A and RM 6506B, are located in the east air intake, and each radiation monitor has two detectors. RM 6506A has two detectors , RE 6506-A1 and RE 6506-A2. Both detectors must sense a high alarm condition for radiation monitor RM6506A to initiate an isolation signal.

SCVB-RAI-2

This RAI is regarding the "Proposed Change to Functional Unit 2.a - Containment Ventilation Isolation On Line Purge Monitor."

The first paragraph on Page 8 of the Enclosure to SBK-L-14080 to the LAR (ADAMs Accession No. ML14209A919) reads:

"The proposed change 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 specified in TS 3.3.2, which will be retained in the TS, is more conservative than the setpoint in TS 3.3.3.1 ."

The NRC staff notes that the TS 3.3.3.1, Table 3.3-6 "Table Notation" associated with the "Alarm/Trip Setpoint" of "*"reads in its entirety *"*Two times background; purge rate will be verified to ensure compliance with Offsite Dose Calculation Manual (ODCM) Control C.7.1.1 requirements".* With the proposed change to Functional Unit 2.a, the requirement to verify that the purge rate is in compliance with the ODCM Control C.7.1.1 requirements will be deleted.

Please provide the regulatory justification for the deletion of this TS requirement.

Response to SCVB-RAI-2

Generic Letter (GL) 89-01, Implementation of Programmatic Controls for Radiological Effluent Technical Specifications in the Administrative Controls Section of the Technical Specifications and the Relocation of Procedural Details of RETS to the Offsite Dose Calculation Manual or to the Process Control Program, documents the NRC staff's determination that programmatic controls for the radiological effluent TS (RETS) can be implemented in the administrative controls section of the TS to satisfy regulatory requirements for RETS. At the same time, the procedural details of

the TS on radioactive effluents and radiological environmental monitoring can be relocated to the Offsite Dose Calculation Manual (ODCM).

Seabrook TS 6.7.6.g, Radioactive Effluent Controls Program, requires that the Offsite Dose Calculation Manual (ODCM) contains a program for the control of radioactive effluents and for maintaining doses to members of the public from radioactive effluents as low as reasonably achievable and that operating procedures shall implement the program. The ODCM (Control C.7.1.1, Radioactive Gaseous Effluents - Dose Rate) establishes limits on dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary.

The release path for containment purge is through the plant vent, which is monitored for radioactivity by the wide range gas monitor (WRGM), the plant vent discharge point radiation monitor. The WRGM has setpoints established in accordance with ODCM to ensure the limits of Control C.7.1.1 for noble gases is not exceeded. The ODCM provides methods for calculation of off-site concentration, off-site doses, and effluent monitor setpoints in order to comply with the requirements of the Radioactive Effluent Controls Program.

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, 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.

ATTACHMENT

Revised Markup of TS 3.3.3.1

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. ~~Containment~~					
~~a. Containment - Post LOCA Area Monitor~~	~~1~~	~~2~~	~~All~~	~~≤ 10 R/h~~	~~27~~
2. Containment Ventilation Isolation					
~~a. On Line Purge Monitor~~	~~1~~	~~2~~	~~1, 2, 3, 4~~	~~*~~	~~23~~
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

Deleted

Deleted

*

All MODES and during movement of irradiated fuel.

TABLE NOTATIONS

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

** 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 movements of irradiated fuel within the containment.