

February 28, 2018

10 CFR 54
Docket No. 50-443
SBK-L-18027

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

Seabrook Station

Supplement 59 - Response to Final Requests for Additional Information for the Safety
Review of the Seabrook Station License Renewal Application - 10 CFR 50 Appendix J
Program

References:

1. NextEra Energy Seabrook LLC, letter SBK-L-10077, "Seabrook Station Application for Renewed Operating License," May 25, 2010 (Accession Number ML101590099).
2. NextEra Energy Seabrook LLC, letter SBK-L-16029, "License Amendment Request 16-01 Request to Extend Containment Leakage Test Frequency," March 31, 2016 (Accession Number ML16095A278).
3. NRC, "Seabrook Station, Unit No. 1 – Issuance of Amendment Re: Extension of Containment Leakage Rate Test Frequency (CAC No. MF7565)," March 15, 2017 (Accession Number ML17046A443).
4. NextEra Energy Seabrook LLC, letter SBK-L-17163, "Supplement 57 – Revision to License Renewal Application 10 CFR 50 Appendix J Program," October 06, 2017 (Accession Number ML17278A955).
5. NRC, "Final Requests for Additional Information for the Safety Review of the Seabrook Station License Renewal Application Docket No. 05-443," January 29, 2018 (Accession Number ML18026A879).

In Reference 1, NextEra Energy Seabrook, LLC (NextEra Energy Seabrook) submitted an application for a renewed facility operating license for Seabrook Station Unit 1 in accordance with the Code of Federal Regulations, Title 10, Parts 50, 51, and 54.

NextEra Energy Seabrook, LLC

P.O. Box 300, Lafayette Road, Seabrook, NH 03874

In Reference 2, NextEra Energy Seabrook requested a license amendment to revise Technical Specification 6.15, Containment Leakage Rate Testing Program, to require a program that is in accordance with Nuclear Energy Institute (NEI) topical report (TR) 94-01, Revision 3-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" and the conditions and limitations specified in NEI TR 94-01, Revision 2-A.

In Reference 3, the NRC issued Amendment No. 153 to the NextEra Energy Seabrook Facility Operating License. The amendment revised NextEra Energy Seabrook's Technical Specification 6.15, "Containment Leakage Rate Testing Program," to be in accordance with NEI TR 94-01, 3-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," and the conditions and limitations specified within NEI TR 94-01, Revision 2-A.

In Reference 4, NextEra Energy Seabrook submitted letter SBK-L-17163 which revised the License Renewal Application 10 CFR 50 Appendix J Program to reflect the issuance of Amendment No. 153 in Reference 3.

In Reference 5, the NRC requested additional information to complete the safety review of the License Renewal Application related to 10 CFR 50 Appendix J program.

The Enclosure provides NextEra Energy Seabrook's response to the NRC's Request for Additional Information concerning the License Renewal Application 10 CFR 50 Appendix J program.

To facilitate understanding, the changes are explained, and where appropriate, portions of the LRA are repeated with the change highlighted by strikethroughs for deleted text and bolded italics for inserted text.

There are no new or revised regulatory commitments contained in this letter.


If there are any questions or additional information is needed, please contact Mr. Edward J. Carley, Engineering Supervisor - License Renewal, at (603) 773-7957.

If you have any questions regarding this correspondence, please contact Mr. Kenneth Browne, Licensing Manager, at (603) 773-7932.

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

Executed on February 28, 2018.

Sincerely,
NextEra Energy Seabrook, LLC


Eric McCartney
Regional Vice President – Northern Region

Enclosure: Response to Final Request for Additional Information for the Safety
Review of the Seabrook Station License Renewal Application - 10 CFR 50
Appendix J Program

cc: D. H. Dorman NRC Region I Administrator
J. C. Poole NRC Project Manager
P. C. Cataldo NRC Senior Resident Inspector
E.H. Gettys NRC Project Manager, License Renewal

Mr. Perry Plummer
Director Homeland Security and Emergency Management
New Hampshire Department of Safety
Division of Homeland Security and Emergency Management
Bureau of Emergency Management
33 Hazen Drive
Concord, NH 03305
perry.plummer@dos.nh.gov

Mr. John Giarrusso, Jr., Nuclear Preparedness Manager
The Commonwealth of Massachusetts
Emergency Management Agency
400 Worcester Road
Framingham, MA 01702-5399
John.Giarrusso@massmail.state.ma.us

Enclosure to SBK-L-18027

Supplement 59 – Response to Final Requests for Additional Information for the Safety Review of the Seabrook Station License Renewal Application - 10 CFR 50 Appendix J Program

Regulatory Background to RAI

Section 54.21(a)(3) of 10 CFR requires the applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis (CLB) for the period of extended operation. As described in NUREG 1800 (SRP-LR), an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing NUREG 1801 (GALL Report) and when evaluation of the matter in the GALL Report applies to the plant. However, if an applicant takes credit for a program in the GALL Report, it is incumbent on the applicant to ensure that the conditions and operating experience at the plant are bounded by the conditions and operating experience for which the GALL Report program was evaluated. Ongoing evaluation of Operating Experience defines the effectiveness of an Aging Management Program.

RAI B.2.1.30-3

Background

NUREG 1801, Revision 1 (and similarly in Revision 2), states:

The staff's evaluation of the adequacy of each generic aging management program (AMP) in managing certain aging effects for particular structures and components is based on its review of the...10 program elements in each aging management program (AMP).

Also, NUREG 1800, Revision 1 (and similarly in Revision 2) states:

If, while reviewing the LRA AMP, the reviewer identifies a difference from the GALL Report AMP that should have been identified as an exception to the GALL Report AMP, this difference should be reviewed and properly dispositioned.

LRA Section B.2.1.30, "10 CFR Part 50, Appendix J" program, states that the applicant has implemented Option B of 10 CFR Part 50 Appendix J for leak rate testing (LRT) and is consistent, with no exceptions or enhancements, with the GALL Report, Revision 1, AMP XI.S4. The "monitoring and trending" program element of the GALL Report AMP XI.S4 states that the implementing documents for Option B to 10 CFR Appendix J are NRC Regulatory Guide (RG) 1.163 and Nuclear Energy Institute (NEI) Topical Report 94-01, Rev. 0. The GALL Report Revision 2 references NEI 94-01, Rev. 2-A. The "corrective actions" program element of the GALL Report AMP XI.S4 also references NEI 94-01.

Seabrook LRA supplement 57 (ADAMS Accession No. ML17278A955) revised the LRA AMP B.2.1.30 program description to state that the implementation of 10 CFR Part 50 Appendix J is in accordance with the plant's Technical Specifications (TS). Section

6.15, "Containment Leak Rate Testing Program," of Seabrook Station TS states that the 10 CFR Part 50 Appendix J implementation "is in accordance with NEI 94-01, Revision 3-A, 'Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J,' and conditions and limitations specified in NEI 94-01, Revision 2-A."

Issue

The "monitoring and trending" program element of GALL Report Rev. 1 AMP XI.S4, (to which the applicant claims consistency), states that details for implementing Option B to 10 CFR Part 50 Appendix J are provided in NEI 94-01 Rev. 0, as endorsed by RG 1.163. In contrast, the revised LRA Section B.2.1.30 program description (in agreement with plant TS) states that the NEI 94-01, Revision 3-A, and conditions and limitations of NEI 94-01, Rev. 2-A, are the implementing document(s) for 10 CFR Part 50 Appendix J testing. The implementing documents referenced in GALL Report AMP XI.S4 Revision 1 (or Revision 2), acknowledged by the applicant in the revised program description, differ on how 10 CFR Part 50 Appendix J tests are administered. It is not clear why the "monitoring and trending" and "corrective actions" program elements of LRA AMP B.2.1.30 were not revised to reference the new implementing document to 10 CFR Part 50 Appendix J consistent with the plant's TS. In addition, as noted in NUREG-1800 above, differences in the LRA AMP from that of the GALL Report AMP to which the applicant claims consistency with should be identified as exceptions that the staff reviews and properly dispositions. It is not clear how the LRA maintains that the program is consistent, without exception, with GALL Report AMP XI.S4.

Request

State whether the "monitoring and trending" and "corrective actions" program elements LRA AMP B.2.1.30 need to be updated to be consistent with the update to the TS and the implementing documents credited for Option B to 10 CFR Part 50 Appendix J. If the "monitoring and trending" and "corrective actions" program elements of LRA AMP B.2.1.30 are not to be updated then determine whether the noted difference is an exception to the GALL Report AMP XI.S4 and provide supporting justification.

NextEra Energy Seabrook's Response to RAI B.2.1.30-3

With the issuance of Amendment No. 153 (Reference 3) to Seabrook Station's Facility Operating License, Technical Specification 6.15, "Containment Leakage Rate Testing Program," was revised to be in accordance with Nuclear Energy Institute (NEI) topical report (TR) NEI 94-01, Revision 3-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," and the conditions and limitations specified within NEI TR 94-01, Revision 2-A. These documents are used at Seabrook Station to implement the performance-based leakage testing program in accordance with Option B of 10 CFR Part 50, Appendix J.

The "Monitoring and Trending" program element of GALL Report Rev. 1 AMP XI.S4 states the following:

“In the case of Option B, the interval for testing may be increased on the basis of acceptable performance in meeting leakage limits in prior tests. Additional details for implementing Option B are provided in NRC Regulatory Guide 1.163 and NEI 94-01, Rev. 0.”

The “Corrective Actions” program element from GALL Report Rev. 1 Section XI.S4, states the following:

“Corrective actions are taken in accordance with 10 CFR Part 50, Appendix J, and NEI 94-01.”

Based upon the NRC approval and issuance of Amendment No. 153 to Seabrook Station’s Facility Operating License, exceptions exist between the NextEra Energy Seabrook License Renewal Application (LRA) 10 CFR Appendix J program and NUREG-1801, Section XI.S4, Element 5, “Monitoring and Trending,” and Element 7, “Corrective Actions.” Changes to LRA Aging Management Plan (AMP) B.2.1.30 are required to be consistent with the update to the Technical Specifications, and the implementing documents credited for Option B to 10 CFR Part 50 Appendix J.

NextEra Energy Seabrook’s LRA, Appendix B – Aging Management Programs, B.2.1.30 – 10 CFR Part 50 Appendix J Program is revised as shown below.

Program Description

The Seabrook Station 10 CFR Part 50, Appendix J Program is an existing performance based containment leak rate test program as described in the Seabrook Station Technical Requirements Program and Leakage Test Reference Manual.

The Seabrook Station Containment Leakage Rate Testing Program, required by Seabrook Station Technical Specification, implements Option B of Appendix J of 10 CFR Part 50, “*Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors*”. The test requirements of Appendix J provide for periodic verification by tests of the leak-tight integrity of the primary reactor containment. The purposes of the tests are to assure that 1) leakage through the containment or systems and components penetrating the containment does not exceed the allowable leakage rate specified in the Technical Specifications and Updated Final Safety Analysis Report, and 2) integrity of the containment structure is maintained during its service life.

10 CFR Part 50 Appendix J, Option B is in accordance with the guidance in Nuclear Energy Institute (NEI) Topical Report (TR) 94-01, Revision 3-A, “Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J”, and the conditions and limitations specified in NEI TR 94-01, Revision 2-A. The Seabrook Station Leakage Test Reference is based on the guidance provided in NEI TR 94-01, Revision 3-A, and ANSI / ANS-56.8-2002.

The Seabrook Station 10 CFR Part 50 Appendix J Program includes integrated and local leak rate tests of components that make up the primary containment pressure

boundary. The program includes Type A, B, and C type testing as described in 10 CFR Part 50, Appendix J.

The Seabrook Station 10 CFR Part 50 Appendix J Program is a containment leak rate monitoring program and does not specify preventive actions. The test requirements of Appendix J provide for periodic verification by tests of the leak-tight integrity of the primary reactor containment. The Seabrook Station 10 CFR Part 50 Appendix J Program, together with the implementation of programs ASME Section XI, Subsection IWE Program (B.2.1.27), and ASME Section XI, Subsection IWL Program (B.2.1.28), provides an aging management program that is effective at detecting degradation of the containment boundary.

Periodic integrated leakage rate tests (Type A tests) are conducted in accordance with the UFSAR Section 6.2.6, Containment Leak Rate Testing and Technical Specification 4.6.1, Primary Containment - Containment Integrity. These tests monitor leakage rates through primary containment shells, liners, penetrations, fittings, access openings, and the isolation valves.

Type B tests are required on all containment penetrations with resilient seals, gaskets, or expansion bellows. These include, but are not limited to, air locks, air lock door seals, piping penetrations with expansion bellows and blind flanges, and electrical seals.

Type C tests are required on all lines that penetrate the primary containment and present a potential leakage path between the inside and outside atmospheres of the primary containment under postulated accident conditions.

The Seabrook Station acceptance criteria for containment leakage rates are defined in plant technical specifications and technical requirements. The Seabrook Station 10 CFR Part 50 Appendix J Program ensures that the containment leakage meets the defined acceptance criteria.

During Appendix J testing, if leakage rates do not meet the acceptance criteria, corrective actions are taken in accordance with 10 CFR Part 50, Appendix J, and NEI 94-01. An evaluation is performed to identify the cause of the unacceptable performance and appropriate corrective actions are taken to restore the leakage to an acceptable level. When excessive leakage results in corrective actions to repair a degraded condition, leak rate testing is performed after completion of repairs to confirm that the deficiency has been corrected.

The Appendix J Program monitors the results of the type A, B and C leak rate tests to demonstrate that the acceptance criteria for leakage have been satisfied. The test results that exceed the performance criteria are assessed as required by 10 CFR 50.72, "*Immediate Notification Requirements for Operating Nuclear Power Reactors*" and 10 CFR 50.73, "*Licensee Event Report System*."

NUREG-1801 Consistency

This program, *with exceptions noted below*, is consistent with NUREG-1801 XI.S4.

Exceptions to NUREG-1801

None

Program Elements Affected:

Monitoring and Trending (Element 5)

NUREG-1801 XI.S4 states that details for implementing 10 CFR 50 Appendix J, Option B, are provided in NRC Regulatory Guide 1.163 and NEI 94-01, Rev. 0.

The Seabrook Station 10 CFR Part 50 Appendix J Program is revised to be in accordance with the guidance in Nuclear Energy Institute (NEI) Topical Report (TR) 94-01, Revision 3-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J", and the conditions and limitations specified in NEI TR 94-01, Revision 2-A. The Seabrook Station Leakage Test Reference is based on the guidance provided in NEI TR 94-01, Revision 3-A, and ANSI / ANS-56.8-2002. This revision was approved under Amendment No. 153 to the Facility Operating License for Seabrook Station, Unit No. 1.

Corrective Actions (Element 7)

NUREG-1801 XI.S4 states that Corrective Actions are taken in accordance with 10 CFR Part 50, Appendix J, and NEI 94-01.

The Seabrook Station 10 CFR Part 50 Appendix J Program is revised to be in accordance with the guidance in Nuclear Energy Institute (NEI) Topical Report (TR) 94-01, Revision 3-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J", and the conditions and limitations specified in NEI TR 94-01, Revision 2-A. The Seabrook Station Leakage Test Reference is based on the guidance provided in NEI TR 94-01, Revision 3-A, and ANSI / ANS-56.8-2002. This revision was approved under Amendment No. 153 to the Facility Operating License for Seabrook Station, Unit No. 1.

Enhancements

None