SeabrookLANPEm Resource

From: Gettys, Evelyn
Sent: Monday, January 29, 2018 1:29 PM
To: 'Eric.McCartney@nexteraenergy.com'
Cc: RidsNrrDmlr Resource; Ronewicz, Lynn; Poole, Justin; McIntyre, David; Weil, Jenny; Dacus, Eugene; Harris, Brian; Ghosh, Anita; Wachutka, Jeremy; Gray, Mel; Bower, Fred; Cataldo, Paul; Meier, Peter; Barkley, Richard; Vadella, Robert; Draxton, Mark; Tifft, Doug; Sheehan, Neil; Screnci, Diane; 'Eric.McCartney@nexteraenergy.com'; 'Kenneth.J.Browne@nexteraenergy.com'; 'Richard.Turcotte@nexteraenergy.com'; 'Edward.Carley@nexteraenergy.com'; 'Christine.Thomas@nexteraenergy.com'; Oesterle, Eric; Hulbert, Jaclyn; Said Bolourchi; Simons, John; Wittick, Brian; Roberts, Tom; Greene, Joshua
Subject: FINAL REQUESTS FOR ADDITIONAL INFORMATION FOR THE SAFETY REVIEW OF THE SEABROOK STATION LICENSE RENEWAL APPLICATION docket no. 05-443
Attachments: TRP 42 SBK RAI LRA IWL.pdf; TRP 44 SBK RAI B.2.1.30-3 10 CFR Part 50 Appendix J 1-09-18.pdf

Dear Mr. McCartney:

By letter dated May 25, 2010, NextEra Energy Seabrook, LLC submitted an application pursuant to Title 10 of the *Code* of *Federal Regulations* Part 54, to renew the Operating License No. NPF-86 for Seabrook Station, Unit 1 (Seabrook) for review by the U.S. Nuclear Regulatory Commission (NRC or the staff).

On January 25, the staff had a clarification call with Seabrook on the DRAI B.2.1.28-5 and DRAI B.2.1.30-3. These requests for additional information (RAI) are on License Renewal Applicant (LRA) Supplements #56 (ML17201A036) and LRA Supplement #57 (ML17278A955), respectively. There were no changes made and applicant needs to responding to the RAIs by February 28, 2018. The final RAIs are attached to this email. For questions please contact Ms. Gettys at 301-415-4029 or by e-mail at Evelyn.Gettys@nrc.gov.

Sincerely,

Evelyn Gettys, Project Manager
License Renewal Project Branch (MRPB)
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-443

cc: Listserv

ADAMS Accession No.: ML18026A879

OFFICE	PM:DMLR/MRPB	BC: DMLR/MRPB	PM: DMLR/MRPB
NAME	EGettys	EOesterle	EGettys
DATE	01/25/2018	01/29/2018	01/29/2018

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Subject: FINAL REQUESTS FOR ADDITIONAL INFORMATION FOR THE SAFETY REVIEW OF THE SEABROOK STATION LICENSE RENEWAL APPLICATION docket no. 05-443
Sent Date: 1/29/2018 1:28:59 PM
Received Date: 1/29/2018 1:29:04 PM
From: Gettys, Evelyn

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Files	**Size**	**Date & Time**
MESSAGE	1314	1/29/2018 1:29:04 PM
TRP 42 SBK RAI LRA IWL.pdf	83370	
TRP 44 SBK RAI B.2.1.30-3 10 CFR Part 50 Appendix J 1-09-18.pdf	92239	

Options
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Regulatory Background to RAI

Section 54.21(a)(3) of 10 CFR requires an 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 for the period of extended operation. As described in SRP-LR, an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing the 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.2.1.28-5

Background

GALL Report Revision 1 AMP, XI.S2, "ASME Section XI, Subsection IWL," states that ASME Code Section XI, Subsection IWL and the additional requirements of 10 CFR 50.55a(b)(2) constitute an existing mandated program applicable to manage the effects of aging of the containment concrete. To date, Seabrook has performed three IWL examinations, in 2000, 2010, and 2016. The 2010 IWL and 2016 IWL examinations were in accordance with ASME Code Section XI, 2004 Edition (ADAMS Accession Nos. ML16095A278 and ML17201A036, respectively).

IWL-2310 recommends general visual examination to identify areas of concrete deterioration and distress followed when necessary by detailed visual examination to determine the magnitude and extent of deterioration and distress of suspect concrete surface areas. To assist in the performance of the general visual examination and to assess the general condition of the concrete containment, the ASME Code references ACI 201.1R with ACI 349.3R providing tiered quantitative acceptance criteria to identify the magnitude and extent of adverse concrete conditions and help evaluate the structural integrity or require repairs to preserve structural function. The Seabrook Inservice Inspection Reference (SIIR) (ADAMS Accession No. ML11180A079) and its Containment Inservice Inspection (CISI) Plan are the implementing documents; and they identify areas of concrete inspection for Subsection IWL visual examinations.

In Supplement 56 to the LRA, the applicant revised the LRA AMP B.2.1.28 "operating experience" program element to report the operating experience from its 2016 IWL examination. The applicant stated that observed indications had no adverse impact on the structural integrity or structural performance of the containment structure and no ASME Code Repair activities were required as a result of the ASME IWL examination.

Issue

LRA Section B.2.1.28, as revised, proposes to identify ASR cracking through a visual pattern recognition method and tiered acceptance criteria reflective of ACI 349.3R but based on "Combined Cracking Index" (CCI) and/or on distinct individual crack widths, with "Tier 2" and

"Tier 3" requiring regular measurement and monitoring of cracking. Although Seabrook inspects, track and evaluates ASR indications in accordance with ACI 349.3 (ADAMS Accession No. ML12094A364), the SIIR for IWL "Examination Category L-A Concrete" specifies only general visual examinations for ASME identifier L1.11, "Concrete Surface-All Accessible Surface Areas" and does not appear to provide any specifications for ASME identifier L1.12, "Concrete Surface-Suspect Areas," which would require detailed visual examination. Furthermore, in LAR 16-01 ("Request to extend Containment Leakage Test Frequency," License Amendment Request 16-01 (ADAMS Accession No. ML16095A278)), the applicant stated that the CCI "met the action level criterion necessitating a structural evaluation."

The staff noted the following:

1. the applicant's LRA AMP B.2.1.28 for IWL Containment Inservice Inspection is augmented to include measuring CCI and crack widths for concrete affected by ASR (which measure magnitude/degree and extent of deterioration and distress);
2. measuring CCI and crack widths to measure magnitude/degree and extent of distress appears to meet the ASME guideline for detailed visual examination (beyond general visual examination);
3. the implementing documents for the IWL visual examinations (the SIIR and its CISI Plan), do not appear to include provisions for detailed visual examinations for concrete classified under the ASME identifier "Concrete Surface-Suspect Areas;"
4. if the program determines a need for measuring CCI and crack width(s) due to ASR degradation at "Tier 2" or "Tier 3" levels it is not clear whether the program criteria would classify those areas as "Concrete Surface-Suspect Areas" (and if not, it is not clear why not) and requiring detailed visual examination per the ASME Code; and
5. in LAR 16-01 the applicant identified that structural evaluation of containment concrete was necessary due to ASR degradation.

It is not clear how the applicant concluded in LRA Supplement 56 that the reported indications in the 2016 ASME IWL inspections did not adversely affect the structural integrity of the containment without having performed ASME Code Section XI mandated detailed visual examinations. The staff noted that the SIIR only specifies the general visual examination, which is limited to recognizing areas of concrete deterioration, and the SIIR does not specify detailed visual examinations. The CISI Plan as prescribed in the SIIR does identify any ASME identifier L1.12 "Concrete Surface-Suspect Areas" requiring detailed visual examinations. The fact that the applicant provided the conclusion that "indications did not adversely affect the structural integrity" of the containment implies that actions were taken to determine the magnitude and extent of ASR deterioration (i.e., CCI/crack widths), which would have been used to support the technical evaluation that validated the concrete containment structural integrity.

<u>Request</u>

1. Explain why Seabrook limits its IWL visual examinations to general visual, even though the requirements for IWL-2310 call for detail visual examinations to determine the magnitude and extent of deterioration and distress of suspect concrete surface areas?

2. Explain why the identified distressed concrete containment surface areas in the referenced LAR above have not been included as surface areas subject to detail visual examination and reported in the operating experience program element of LRA Section B.2.1.28.
3. State whether areas identified as “Tier 2” or “Tier 3” and requiring measurement of the extent of degradation by CCI and crack width are considered “suspect areas” per the ASME Code. If not, provide justification.

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.