

SeabrookNPEM Resource

From: Plasse, Richard
Sent: Friday, February 04, 2011 1:21 PM
To: Cliche, Richard
Subject: FW: Follow-up RAIs for all structural AMPS_Oland-Bryce-Abdul.doc
Attachments: Follow-up RAIs for all structural AMPS_Oland-Bryce-Abdul.doc

[Draft Followup RAIs](#)

Hearing Identifier: Seabrook_License_Renewal_NonPublic
Email Number: 2245

Mail Envelope Properties (Richard.Plasse@nrc.gov20110204132100)

Subject: FW: Follow-up RAIs for all structural AMPS_Oland-Bryce-Abdul.doc
Sent Date: 2/4/2011 1:21:17 PM
Received Date: 2/4/2011 1:21:00 PM
From: Plasse, Richard

Created By: Richard.Plasse@nrc.gov

Recipients:
"Cliche, Richard" <Richard.Cliche@fpl.com>
Tracking Status: None

Post Office:

Files	Size	Date & Time
MESSAGE	26	2/4/2011 1:21:00 PM
Follow-up RAIs for all structural AMPS_Oland-Bryce-Abdul.doc		43122

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Seabrook AMP, “ASME Section XI, Subsection IWE.”

Follow-up RAI B2.1.27-1

Background

By letter dated December 17, 2010, the applicant responded to the staff RAI B.2.1.27-1 and stated that Seabrook will perform testing of the containment liner plate for loss of material on the concrete side of the liner. The testing will be conducted in accordance with approved ASME Section XI, Subsection IWE methodology, and will be completed prior to the period of extended operation.

Issue

The applicant has committed to performing testing of the containment liner plate for the loss of material on the side of the concrete; however, it is not clear how this testing will be performed. It is also unclear how the applicant will implement ASME Subsection IWE, Article IWE 2500 requirements for the extent, timing, and frequency for the testing. Furthermore, the period of extended operation for the Seabrook Station will not start until March 15, 2030. The staff is concerned that liner plate degradation, if any, will remain undetected for the next 19 years, and that the degradation can adversely affect the ability of the liner to perform its intended function during the period of extended operation.

Request

Provide the details, extent, and timing for the first and subsequent testing to be performed to determine the loss of material on the concrete side of the liner plate to comply with the ASME IWE 2500 requirements. Also provide a description of the nondestructive testing methods and locations where thickness measurements will be obtained to quantify the magnitude and extent of the loss of material, if any, that has occurred.

Follow-up RAI B2.1.27-2

Background

By letter dated December 17, 2010, the applicant responded to the staff RAI B.2.1.27-2 and stated that the liner plate around the fuel transfer tube has been identified in the ISI program for augmented inspection in accordance with the 1995 Edition with 1996 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, Subsection IWE -2420(b) and (c).

Issue

The ASME 1995 Edition with 1996 Addenda, Section XI, Subsection IWE -2420(b) and (c) states that reexamination of degraded areas is no longer required if these areas remains essentially unchanged for three consecutive inspection periods. However, it is not clear from the applicant's response if the containment liner plate around the fuel transfer tube is still exposed to the borated water leakage. Continued exposure to borated water can promote corrosion of the liner plate and adversely affect the ability of the liner to perform its intended function.

Request

Provide a long-term plan for monitoring the liner plate thickness around the fuel transfer tube until borated water leakage is stopped. The staff needs this information to ensure that continued exposure of the liner plate to the borated water will not adversely affect the ability of the liner plate to perform its intended function during the period of extended operation.

Seabrook AMP, "ASME Section XI, Subsection IWL"

Follow-up RAI B2.1.28-3

Background

By letter dated December 17, 2010, the applicant responded to the staff RAI B.2.1.28-3 and stated that Seabrook will perform confirmatory testing and evaluation of the Containment Structure concrete. The testing and evaluation will determine the concrete compressive strength, the presence or absence of Alkali Silica Reaction (ASR), the concrete modulus of elasticity, and the presence or absence of rebar degradation. The testing and evaluation will be completed prior to the period of extended operation. In addition, Seabrook will implement measures to maintain the exterior surface of the Containment Structure, from elevation -30 feet to +20 feet, in a dewatered state. These measures will be in effect prior to the period of extended operation.

Issue

The applicant has committed to complete the following tasks prior to period of extended operation which starts on March 15, 2030:

1. Testing and evaluation of the concrete containment for Alkali Silica Reaction (ASR)
2. Implementing measures to maintain the exterior surface of the Containment Structure, from elevation -30 feet to +20 feet, in a dewatered state.

The staff is concerned that continued exposure of the concrete containment to groundwater for the next 19 years, until March 15, 2030, will affect its ability to perform its intended function

during the period of extended operation. In addition, absence of remedial measures that may not be identified and/or implemented until concrete containment testing and evaluation by March 15, 2030 may also adversely affect the ability of the concrete containment to perform its intended function during the period of extended operation.

Request

1. Provide specific details and timing for completing concrete containment testing and evaluations.
2. Provide specific details and timing for implementing measures to maintain the exterior surface of the Containment Structure, from elevation -30 feet to +20 feet, in a dewatered state.
3. Revise Commitments 51 and 52 as required to incorporate the response of items 1 and 2 above.

The staff needs this information to determine if the concrete containment will be capable of performing its intended function during the period of extended operation.

Seabrook AMP, “Structures Monitoring Program”

Follow-up RAI B2.1.31-1

Background

By letter dated December 17, 2010, the applicant responded to a staff RAI regarding concrete degradation due to groundwater in-leakage and explained that recent cores had shown significant reductions in concrete compressive strength and modulus of elasticity. The applicant stated that a prompt operability determination concluded the affected areas were in compliance with the design code and that an extent of condition investigation was ongoing. The applicant further stated that any necessary future remediation will be identified and conducted through the corrective action program.

Issue

The applicant provided no specific information about the operability determination, including how long it was applicable and what was considered in the calculations. The response also lacked information regarding the extent of condition assessment including approximate completion dates and probable path forward.

Request

1. Provide additional information regarding the operability determination including the following:
 - a. How long the operability determination remains valid.

- b. Whether or not the determination considered loss of shear and tensile strength due to concrete cracking.
 - c. How the reduction in shear and tensile strength will affect the adequacy of any embedments in the degraded concrete.
 - d. Whether the “B” Electrical Tunnel structure that is exposed to ASR has been analyzed for the 47 percent reduction in the modulus of elasticity.
2. Provide additional information regarding the extent of the condition investigation, including the following:
- a. Any additional tests planned or results of investigations conducted since the initial RAI response was submitted.
 - b. An estimated timeframe for the extent of condition investigation.
 - c. A path forward, including the location and timing of future tests as well as proposed remedial actions based on available information.

Follow-up RAI B2.1.31-2

Background

By letter dated December 17, 2010, the applicant responded to a staff RAI and explained that components affected by groundwater in-leakage are managed under the Structures Monitoring Program which implements the Structural Engineering Standard Technical Procedure issued in March 2010. The program covers “building structural steel” and instructs the inspectors to look for degradation such as corrosion, peeling paint, excessive deflection of members, etc.

Issue

Although the procedure was updated in March 2010, the staff noted several areas of degradation due to in-leakage during walkdowns in October 2010. The staff needs more information on how this will be addressed during the period of extended operation.

Request

Explain what actions are taken when degradation is noted in areas prone to in-leakage and whether or not additional actions are taken to monitor these areas (e.g. more frequent inspections).

Follow-up RAI B2.1.31-4

Background

By letter dated December 17, 2010, the applicant responded to a staff RAI and explained that spent fuel pool leakage has migrated through the surrounding concrete in the past. The applicant further stated that the leakage was stopped in 2004 after the application of a nonmetallic liner to the spent fuel pool.

Issue

The applicant did not provide adequate justification for its conclusion that the leakage has stopped and that no through-wall leakage is occurring. In addition, based on industry operating experience with failures of spent fuel pool nonmetallic coatings, the staff is not confident that the nonmetallic liner is an appropriate long-term fix.

Request

1. Discuss what measures will be taken to demonstrate the adequacy of the concrete and rebars exposed to SFP leakage, including the possibility of core bores from known leakage locations.
2. Explain how the conclusion was reached that through-wall leakage is not occurring, especially in inaccessible areas. Include a discussion of any additional inspections that will be conducted during the period of extended operation to verify that leakage is not occurring.
3. If the nonmetallic liner is relied upon to stop leakage, explain what measures will be taken to ensure the adequacy of the liner during the period of extended operation.