From:	Kim, James
Sent:	Tuesday, February 22, 2022 3:37 PM
To:	Thomas, Brian J.
Cc:	Wiwel, Michael; Danna, James
Subject:	Final RAI - Salem Unit 1 Relief Request S1-I4R-210 regarding Examination Coverage of Welds (L-2021-LLR-0085)
Attachments:	Final RAI- Salem 1 Relief Request S1-I4R-210.docx

SUBJECT: Final RAI - Salem Unit 1 Relief Request S1-I4R-210 regarding Examination

Coverage of Welds (L-2021-LLR-0085)

Mr. Thomas,

By letter dated November 10, 2021 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML21314A579), PSEG Nuclear LLC (the licensee) requested relief from the examination coverage requirement of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," at Salem Generating Station Unit 1. The licensee submitted Request for Relief Number S1-I4R-210 which discusses limitations for examinations performed in accordance with the requirements of the ASME Code, Section XI, for Class 1 and 2 welds during the fourth inservice inspection (ISI) interval.

The NRC staff reviewed the relief request and determined that additional information is required to complete the review and PSEG agreed to respond to this request within 30 days. A publicly available version of this final RAI (attached) will be placed in the NRC's ADAMS.

James Kim
Project Manager – Salem
NRR/DORL/LPL1
301-415-4125

Hearing Identifier: NRR_DRMA
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Sent Date: 2/22/2022 3:37:02 PM
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From: Kim, James

Created By: James.Kim@nrc.gov

Recipients:
"Wiwel, Michael" <Michael.Wiwel@pseg.com>
Tracking Status: None
"Danna, James" <James.Danna@nrc.gov>
Tracking Status: None
"Thomas, Brian J." <Brian.Thomas@pseg.com>
Tracking Status: None

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Options
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Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:

REQUEST FOR ADDITIONAL INFORMATION
RELIEF REQUEST S1-I4R-210, REVISION 0
ALTERNATIVE EXAMINATION OF WELDS
SALEM GENERATING STATION UNIT 1
PSEG NUCLEAR LLC
DOCKET NO. 50-272
EPID L-2021-LLR-0085

By letter dated November 10, 2021 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML21314A579), PSEG Nuclear LLC (the licensee) requested relief from the examination coverage requirement of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, "Rules for lnservice Inspection of Nuclear Power Plant Components," at Salem Generating Station Unit 1. The licensee submitted Request for Relief Number S1-I4R-210 which discusses limitations for examinations performed in accordance with the requirements of the ASME Code, Section XI, for Class 1 and 2 welds during the fourth inservice inspection (ISI) interval.

To complete its review, the Nuclear Regulatory Commission (NRC) requests the following additional information. The NRC staff notes that Enclosure 1 to the licensee's November 10, 2021 letter contains the relief request. Attachment 1 to Enclosure 1 contains the detailed examination coverage information. Below are questions that are related to the information in Attachment 1.

RAI-1

Issue
Section 1.2 of Attachment 1 states that the licensee detected a recordable subsurface indication in upper shell at 7°, longitudinal seam weld 1-RPV-1042B during the examination. The licensee's flaw evaluation is discussed in Tables 1.2-3 and1.2-4 of Attachment 1.

Request
(1) Discuss whether the recordable indication is oriented in the circumferential or axial direction. (2) Confirm that the length and depth of the indication are 0.9 inches and 0.05 inches, respectively as shown in Table 1.2-4. (3) Confirm that "S" is the distance of the indication from the inside diameter surface of the weld (i.e., distance from the inside diameter surface). (4) Section 1.2 of Attachment 1 states that the indication was detected during this examination. However, it is not clear whether this is the first time the indication was detected. State whether the indication was detected the very first time during this examination. If applicable, discuss whether the licensee reviewed the results from previous examinations (a look-back) to determine whether this indication has grown and provide a discussion of the results of that review. (5) Discuss whether this indication will be examined in future ISI intervals; if not, provide justification.

RAI-2

Issue
Section 1.3 of Attachment 1 states that the examination coverage achieved for the circumferential weld of the reactor vessel lower head disc to peel segments, 1-RPV-4043, is 27.9% because the examination was limited due to the proximity of the reactor vessel incore nozzles.

Request
(1) Discuss whether the ultrasonic interrogation covered anything beyond the 27.9% achieved of the required weld volume that was not credited, but could be considered, in the coverage calculation. (2) Figure 1.3-3 of Attachment 1 shows the examination location and coverage map of weld 1-RPV-4043 and the locations of incore nozzles. However, based on the map, it seems that some weld areas do not have an incore nozzles in the vicinity. For those areas not proximate to incore nozzles that were not examined, it is not clear why more coverage could not be achieved. Clarify whether attempts were made to perform maximum extent possible and/or discuss best effort examinations in the areas that were not covered. (3) Discuss how the licensee will ensure that there are no flaws in the unexamined weld volume.

RAI-3

Issue
Section 1.4 of Attachment 1 states that the licensee detected a subsurface indication in meridional weld 1-RPV-1043A at 270°, lower head. The licensee stated that this flaw is characteristic of slag inclusion from the welding process during fabrication. The licensee's flaw evaluation is discussed in Table 1.4-3 of Attachment 1.

Request
(1) Discuss whether the indication is oriented in the circumferential or axial direction. (2) The staff notes that the licensee was able to determine that the slag inclusion from the welding process for weld 1-RPV-1043A is the cause of the indication but did not include such information for welds 1-RPV-1042B and 1-RPV-1043E. Discuss the cause of the indication in welds 1-RPV-1042B and 1-RPV-1043E. (3) Section 1.4 of Attachment 1 states that the indication was detected during this examination. However, it is not clear whether this is the first time the indication was detected. State whether the indication was detected the very first time during this examination. If applicable, discuss whether the licensee reviewed the results from previous examinations (a look-back) to determine whether this indication has grown and provide a discussion of the results of that review. (4) Discuss whether this indication will be examined in future ISI intervals; if not, provide justification.

RAI-4

Issue
Section 1.8 of Attachment 1 states that the licensee detected two subsurface indications in meridional weld 1-RPV-1043E, at 150°, lower head, during this examination. The licensee evaluated each recordable flaw for acceptance as shown in Tables 1.8-3, 1.8-4, and 1.8-5 of Attachment 1.

Request
(1) Provide additional information (e.g., a sketch) regarding the approximate locations of the two indications with respect to the inside diameter surface of the weld and to each other, including cladding thickness. (2) Discuss whether these two indications are located in the vicinity of each other such that they should be combined and considered as a single indication. (3) Section 1.8 of Attachment 1 states that the indication was detected during this examination. However, it is not clear whether this is the first time the indication was detected. State whether the indication was detected the very first time during this examination. If applicable, discuss whether the licensee reviewed the results from previous examinations (a look-back) to determine whether

this indication has grown and provide a discussion of the results of that review. (4) Discuss whether these two indications will be examined in future ISI intervals; if not, provide justification.

RAI-5

Issue
Section 1.10 of Attachment 1 states that the examination coverage achieved for circumferential weld 1-PZR-21 of pressurizer shell "J" to upper head is 42.15% because the weld examination was limited due to the proximity of insulation support straps, permanent vessel support ring and welded pads.

Request
(1) Discuss whether a similar weld exists that could be examined with a higher examination coverage in lieu of examining weld 1-PZR-21. (2) Discuss why the insulation support straps were not removed completely to facilitate a higher examination coverage. (3) Discuss whether the permanent vessel support ring could be removed to facilitate a higher examination coverage. (4) Discuss whether the ultrasonic interrogation covered anything beyond the 42.15% achieved of the required weld volume that was not credited, but could be considered, in the coverage calculation.