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Subject: LIMERICK UNITS 1 and 2: REQUEST FOR INFORMATION (RAI): RELIEF REQUEST I3R-23 REGARDING LIMITED EXAMINATION COVERAGE (EPID: L-2017-LLR-0098)
Date: Tuesday, December 19, 2017 1:20:00 PM
Attachments: [RAI Limerick - RR I3R-23 - EPID L-2017-LLR-0098.docx](#)

By letter dated September 29, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17275A202), Exelon Generation Company, LLC (the licensee) submitted Relief Request I3R-23 to the U.S. Nuclear Regulatory Commission (NRC or the Commission) for the third 10-year inservice inspection interval of Limerick Generating Station (Limerick), Units 1 and 2. In its submittal of Relief Request I3R-23, the licensee requested relief from the examination coverage requirements of Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), applicable to certain ASME Code Class 1 and 2 vessel welds and nozzle inner radii. Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(5)(iii), the licensee requested relief on the basis that achieving the ASME Code-required examination coverage for the subject components in Relief Request I3R-23 is impractical. Section 50.55a(g)(6)(i) of 10 CFR states that the Commission may grant such relief and may impose such alternative requirements as it determines are authorized by law; will not endanger life or property or the common defense and security; and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. In order to make a determination that there is reasonable assurance of structural integrity and leaktightness (and thus the request will not endanger life and property), the NRC staff requires responses to requests for additional information (RAIs) described in the attachment to this e-mail to complete the review of Relief Request I3R-23.

Please submit your responses to these four RAIs included in this attachment by January 22, 2018. If you have any questions, please contact me.

Attachment

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REQUEST FOR ADDITIONAL INFORMATION

RELIEF REQUEST I3R-23 REGARDING LIMITED EXAMINATION COVERAGE

THIRD 10-YEAR INSERVICE INSPECTION INTERVAL

EXELON GENERATION COMPANY, LLC

LIMERICK GENERATING STATION, UNITS 1 AND 2

DOCKET NOS. 50-352 AND 50-353

By letter dated September 29, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17275A202), Exelon Generation Company, LLC (the licensee) submitted Relief Request I3R-23 to the U.S. Nuclear Regulatory Commission (NRC or the Commission) for the third 10-year inservice inspection interval of Limerick Generating Station (Limerick), Units 1 and 2. In its submittal of Relief Request I3R-23, the licensee requested relief from the examination coverage requirements of Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), applicable to certain ASME Code Class 1 and 2 vessel welds and nozzle inner radii. Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(5)(iii), the licensee requested relief on the basis that achieving the ASME Code-required examination coverage for the subject components in Relief Request I3R-23 is impractical. Section 50.55a(g)(6)(i) of 10 CFR states that the Commission may grant such relief and may impose such alternative requirements as it determines are authorized by law; will not endanger life or property or the common defense and security; and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. In order to make a determination that there is reasonable assurance of structural integrity and leaktightness (and thus the request will not endanger life and property), the NRC staff requires responses to the following requests for additional information (RAIs) to complete the review of Relief Request I3R-23.

RAI 1

Table I3R-23.1, "Limerick Generating Station, Unit 1 – List of Components with Limited Examination Coverage," of Attachment 1 of the submittal states that four indications were found during the examination of the weld BF (600290), "Shell Ring No. 2 Vertical Seam Weld (RPV)," which is an ASME Code Examination Category B-A, Item No. B1.12 weld. The licensee determined the four indications to be acceptable per ASME Section XI.

The NRC staff requests the following regarding the four indications:

- (a) Clarify that the four indications meet the acceptance standards of IWB-3510.1, "Allowable Planar Flaws," of Section XI of the ASME Code.
- (b) To ensure that the four indications are not new indications that could present a challenge to the structural integrity of the subject weld, the NRC staff requests the licensee to state

Enclosure

whether the four indications were recorded in previous inservice inspection intervals. If they were not recorded, please explain why they were not recorded. Also, state whether there has been any other plant-specific degradation of the subject weld.

RAI 2

Under the "Applicable Code Requirements" section of Relief Request I3-R23, the licensee states that the extent of examination requirement for Examination Category B-D, Item Number 83.90, per Table IWB-2500-1, requires a volumetric examination of all nozzle-to-vessel welds. The licensee further states that during the third interval, Limerick, Units 1 and 2, was approved to use ASME Code Case N-702 in a safety evaluation report dated September 9, 2010 (ADAMS Accession No. ML102390467) for Relief Request 13R-14. The licensee additionally stated that, as allowed by ASME Code Case N-613-1, Limerick, Units 1 and 2, performed a volumetric examination using a reduced examination volume (A-B-C-D-E-F-G-H) of Figures 1, 2, and 3 of the code case in lieu of the previous examination volumes of ASME Section XI, Figures IWB-2500-7(a), (b), and (c).

Code Case N-613-1 allows a modification to the examination volume to ½ inch on either side of the weld for reactor pressure vessel nozzle-to-vessel welds as shown in Figure IWB-2500-7, (a), (b), and (c). Code Case N-702 allows a reduction in the sample size for BWR RPV nozzle-to-vessel welds from 100 percent of the welds to 25 percent of the welds of a given type of nozzle. The technical basis of Code Case N-702 does not mention a reduced examination volume for the RPV nozzle-to-vessel welds. Therefore, the NRC staff is concerned that use of both Code Cases N-702 and N-613-1 for the same nozzles may not be consistent with the technical basis of Code Case N-702.

However, the examination coverage diagrams for several of the RPV nozzle-to-vessel welds appear to show that the licensee attempted to examine the full volume specified in Figure IWB-2500-7, rather than the reduced examination volume allowed by Code Case N-613-1.

Therefore, the staff requests that the licensee clarify:

1. For which RPV nozzle-to-vessel welds is the reduced examination volume of Code Case N-613-1 being applied?
2. Is Code Case N-613-1 being applied to the same nozzle-to-vessel welds for which Code Case N-702 is being applied?
3. If so, justify applying Code Case N-613-1 to welds for which Code Case N-702 is also being applied.

RAI 3

For the components in ASME Code, Section XI, Examination Categories B-D, listed in Table I3R-23.1 and Table I3R-23.2, "Limerick Generating Station, Unit 2 – List of Components with Limited Examination Coverage," in Attachment 1 of the submittal, and for the Examination Category C-B, Item No. C2.22 in Table I3R-23.1, the NRC staff requests the licensee to confirm that (1) no recordable indications were found in the components and (2) there has been no plant-specific operating experience regarding degradation of the components.

RAI 4

The licensee included an examination coverage plot for nozzle inner radius RHR-HXAR-N4IR (244801) of Limerick, Unit 1, on page 17 of Enclosure 1 of the submittal. To gain a better understanding of the examination coverage, the NRC staff requests an examination coverage diagram similar to the other scan diagrams included in the submittal that clearly shows scan lines to the inner radius volume defined in Figures IWC-2500-4(a) or (b) "Nozzle-to-Vessel Welds" of Section XI of the ASME Code.