

REVISED RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 299-8310
SRP Section: 05.04.02.02 - Steam Generator Program
Application Section: SRP 5.4.2.2
Date of RAI Issue: 11/09/2015

Question No. 05.04.02.02-1

The 8/4/15 response (ML15216A456) to MCB Issue 5.4.2.2-6 (KHNP issue AI 5-6.24) states that the first two of the three paragraphs at the end of FSAR Subsection 5.4.2.2.2.12 will be moved to the end of Section 5.4.2.2.2.3, and the third of these paragraphs will be deleted. However, the proposed FSAR revision indicates the first paragraph will be moved and the second and third paragraphs deleted. The staff considers it appropriate to delete the second and third paragraphs as shown in the proposed FSAR revision, but the text of the response should be changed to correctly describe the FSAR change. This information is requested because the staff is reviewing the Steam Generator Program in FSAR Subsection 5.4.2.2 for compliance with ASME Code Section XI requirements and conformance with NEI 97-06, "Steam Generator Program Guidelines."

Response – (Rev.1)

The first paragraph in the Subsection 5.4.2.2.2.12 will be moved to the end of the section 5.4.2.2.2.3 (Integrity Assessment) and the second and third paragraphs will be deleted as shown in Attachment 1.

The "repair criteria" at the end of the section 5.4.2.2.2.3 (Integrity Assessment) of the DCD revision1 will be changed to "plugging criteria."

Impact on DCD

The proposed changes of the original response have already been incorporated into Revision1. Therefore only the applicable changes to Revision1 of the DCD for this revision are included in the Attachment. DCD 5.4.2.2.3 will be revised as indicated in the attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specification.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical, or Environment Report.

APR1400 DCD TIER 25.4.2.2.2.2 Inspection

RAI 299-8310_05.04.02.02-1_Rev.1

SG tube inspections based on degradation assessments are conducted and follow the inspection guidance in the EPRI PWR Steam Generator Examination Guidelines (Reference 13).

Some of the important features of SG tube inspections are:

- a. Sampling as supported by the degradation assessment
- b. Obtaining the information necessary to develop degradation, condition monitoring, and operational assessments
- c. Qualifying the inspection program by determining the accuracy and defining the elements for enhancing nondestructive examination (NDE) system performance, including technique, analysis, field analysis feedback, human performance and process controls

Preservice inspection is performed on the full length of 100% of the tubes in each steam generator using techniques capable of detecting degradation and fabrication abnormalities along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet. The preservice inspection will be performed after field hydrostatic testing and before operation.

5.4.2.2.2.3 Integrity Assessment

SG tube integrity is assessed after each SG tube inspection. The assessment includes:

- a. Condition Monitoring (CM): A backward-looking assessment that confirms that adequate SG tube integrity has been maintained during the previous inspection interval.
- b. Operational Assessment (OA): A forward-looking assessment that demonstrates that tube integrity performance criteria will be met throughout the next inspection interval.

The SG tube surveillance program, including performance criteria for tube integrity, tube ~~repair~~ criteria, and tube inspections, is described in the Technical Specifications (Chapter 16) Subsection 5.5.9. The ~~repair~~ criteria are determined based on NRC RG 1.121 and the

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