

NRR-DMPSPeM Resource

From: Jordan, Natreon
Sent: Tuesday, October 9, 2018 1:14 PM
To: 'Wells, Russell Douglas'
Cc: Schaaf, Robert
Subject: RE: RAIs (Final) -LAR to Revise the Steam Generator Technical Specifications for Watts Bar Nuclear Plant, Unit 2
Attachments: Watts Bar 2 - GL 95-05 RAIs (Draft-Issued).docx

Russ,

By letter dated May 14, 2018, (ADAMS Accession No. ML18138A232), Tennessee Valley Authority (TVA) submitted a license amendment request (LAR) to revise the steam generator (SG) technical specifications (TSs) for Watts Bar Nuclear Plant, Unit 2. The LAR, if granted, would revise the TSs to implement an alternate repair criteria for SG tubes consistent with the guidance in Generic Letter 95-05, "Voltage-Based Criteria for Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking."

The NRC staff from Office of Nuclear Reactor Regulation determined that additional information, as described in the attached request for additional information (RAI), is required for the staff to complete its review of the proposed amendment request. A conference call was held on October 09, 2018 to provide clarification regarding draft RAIs that were submitted to TVA on September 28, 2018.

During the call, TVA proposed to submit the responses by November 8, 2018, and the NRC staff agreed with the proposed date.

Thanks,

Nate

Hearing Identifier: NRR_DMPS
Email Number: 610

Mail Envelope Properties (Natreon.Jordan@nrc.gov20181009131300)

Subject: RE: RAIs (Final) -LAR to Revise the Steam Generator Technical Specifications for Watts Bar Nuclear Plant, Unit 2
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From: Jordan, Natreon

Created By: Natreon.Jordan@nrc.gov

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REQUEST FOR ADDITIONAL INFORMATION BY
THE OFFICE OF NUCLEAR REACTOR REGULATION
REGARDING THE LICENSE AMENDMENT REQUEST TO REVISE THE STEAM
GENERATOR TECHNICAL SPECIFICATIONS FOR WATTS BAR NUCLEAR PLANT, UNIT 2
IN ACCORDANCE WITH GENERIC LETTER 95-05
DOCKET NO. 50-391 (EPID: L-2018-LLA-0143)

By letter dated May 14, 2018, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18138A232), Tennessee Valley Authority (the licensee) submitted a license amendment request (LAR) to revise the steam generator (SG) technical specifications (TSs) for Watts Bar Nuclear Plant, Unit 2. The LAR, if granted, would revise the TSs to implement an alternate repair criteria for SG tubes consistent with the guidance in Generic Letter 95-05, "Voltage-Based Criteria for Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking."

The repair criteria for steam generator tubes is traditionally governed by TSs that specify a depth-based criteria. The licensee is proposing to change the requirements of TS 5.7.2.12, "Steam Generator Program" and TS 5.9.9, "Steam Generator Tube Inspection Report" such that axially-oriented outside diameter stress corrosion cracking (ODSCC) that is identified to be within the confines of the tube support plate thickness are plugged in accordance with the guidance in GL 95-05. The guidance in GL 95-05 relies on empirically derived correlations between a nondestructive inspection parameter (the bobbin coil voltage) and tube burst pressure and leak rate. After a review of the licensee's LAR, the staff identified the need for additional information to complete its evaluation.

1. In the LAR dated May 14, 2018, the licensee states that "at tube-to-TSP [tube support plate] intersections with dent signals exceeding 5.0 (bobbin) volts (Section 1.b.2 of Attachment 1 of GL 95-05), and any crack indications confirmed by rotating probe coil (RPC) will be plugged." The staff identified that the statement could be interpreted in two different ways. The staff interprets it to mean that dent signals exceeding 5.0 volts coincident with crack indications confirmed by RPC are to be plugged. Please confirm that the staff interpretation is correct.
2. The staff identified that the licensee's LAR relied on methodologies, analyses, and evaluations that were performed for Watts Bar, Unit 1, which had the same model SGs at the time that the LAR for Unit 1 was approved (ADAMS Accession No. ML020590277). The staff's evaluation of the Unit 1 LAR included a discussion of expansion of certain inspections of dented intersections should certain conditions be met (e.g., circumferential cracking identified at a dent with a magnitude between 2.0 and 5.0 volts, circumferential cracking identified in a hot-leg dented intersection with bobbin voltage between 1.0 and 2.0 volt and the operational assessment is challenged by structural or leakage concerns).

Please discuss the criteria and plans for expansion of inspections to ensure tube integrity for dented intersections in the event that circumferential cracking is identified.

3. (a) Approval of the voltage-based repair criteria is based, in part, on the licensee being able to successfully demonstrate, after each inspection outage, that the conditional probability of burst and the primary-to-secondary leakage during a postulated main steam line break (MSLB) will be acceptable per the guidance in GL 95-05. The licensee's application did not discuss any reporting requirements related to the proposed alternate repair criteria. Section 6.b of Attachment 1 to GL 95-05 describes information to be provided to the NRC within 90 days following each restart. Please discuss the plans for submitting information described in Section 6.b of Attachment 1 to GL 95-05 and to incorporate a corresponding reporting requirement into the Watts Bar, Unit 2 Technical Specifications or discuss an alternative to demonstrate to the NRC staff after each inspection outage that the conditional probability of burst and the primary-to-secondary leakage during a postulated MSLB will be acceptable per the guidance in GL 95-05.

(b) In addition, confirm that each 90-day report will identify the database used for the GL 95-05 specified calculations.

4. The proposed TS 5.7.2.12.b.2 states, in part:

“Leakage is not to exceed 1 gpm for the faulted SG loop and 150 gallons per day (gpd) for each unfaulted SG. For the specific types of degradation at specific locations as described in TS 5.7.2.12.c.2 of the Steam Generator Program, the leakage is not to exceed 4 gpm or the faulted SG loop and 150 gallons per day (gpd) for each unfaulted SG.”

The staff identified that the statements above seem somewhat contradictory regarding the leakage in the faulted SG loop. Furthermore, the TS can be interpreted such that the sum of leakage limits from each sentence for the unfaulted SGs (i.e., 300 gpd) is considered the acceptable limit.

After a review of the licensee's request, the staff interpretation of the proposed TS is:

Leakage for all degradation mechanisms, excluding that described in TS 5.7.2.12.c.2, is not to exceed 1 gpm in the faulted SG. Leakage for all degradation mechanisms, including that described in TS 5.7.2.12.c.2, is not to exceed 4 gpm for the faulted SG and 150 gpd for each unfaulted SG.

NRC staff asked that the licensee confirm that the staff's interpretation is correct. In addition, if this is the case, modify the proposed TS wording, as appropriate.

5. The proposed TS 5.7.2.12.c.2.d states, in part:

“...the list of tubes identified for exclusion for Unit 1 are the same as for Unit 2.”

The NRC staff identified that the tubes specified in the LAR for exclusion for Unit 1 were for the original steam generators which have since been replaced. NRC staff ask that the licensee provide more detail by possibly explicitly specifying “original steam generators” after “Unit 1” in order to provide a clear distinction in terms of the steam generators specified in TS 5.7.2.12.c.2.d.