KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Wednesday, June 08, 2016 3:25 PM
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Cc: Makar, Gregory; Mitchell, Matthew; Umana, Jessica; Williams, Donna
Subject: APR1400 Design Certification Application RAI 494-8620 (05.04.02.02 - Steam Generator Program)
Attachments: APR1400 DC RAI 494 MCB 8620.pdf

KHNP,

The attachment contains the subject request for additional information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

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REQUEST FOR ADDITIONAL INFORMATION 494-8620

Issue Date: 06/08/2016
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 05.04.02.02 - Steam Generator Program
Application Section:

QUESTIONS

05.04.02.02-5

The March 2, 2016 response (ADAMS Accession No. ML16062A276) to RAI 299-8310, Question 05.04.02.02-3, Parts (h) and (i), proposes changes to leakage values on Attachment pages 10-13. It is not clear to the staff that the proposed values are consistent with the accident analyses. Please address the following issues and identify any FSAR changes needed to address them. In addition, identify any other FSAR changes that may be necessary for consistency. This information is needed to determine consistency with the Standard Technical Specifications, which provide for the establishment and implementation of a steam generator program to ensure that tube integrity is maintained, which is part of meeting General Design Criteria 32.

a. Provide a justification for proposing to delete the first phrase in the first paragraph on page 10 of the March 2, 2016 attachment (Technical Specifications Bases page B 3.4.12-2), or leave this phrase in the Bases as originally proposed. The phrase being deleted is, “Except for primary to secondary LEAKAGE,…” The staff’s understanding is that this phrase should be included in the Bases because it is part of the Standard Technical Specifications Bases and consistent with the proposed definitions of LEAKAGE in the APR1400 (as modified by the response to Action Item 5-6.27, Enclosure 9 to KHNP Letter MKD/NW-15-0061L, ML15216A447).

b. Clarify the last sentence in the first paragraph of page 10 of the March 2, 2016 attachment (page B 3.4.12-2 of FSAR Rev.0), which states that an event resulting in steam discharge to the atmosphere assumes 1.13 L/min (0.3 gpm) primary to secondary leakage as the initial condition. This appears to be inconsistent with a proposed revision to the same page that states, “The safety analysis for the SLB accident assumes the entire 2.27 L/min (0.6 gpm) primary to secondary LEAKAGE is through the affected generator as an initial condition.” Similarly, FSAR Section 15.1 describes the initial conditions for the analysis of a main steam line break as 2.27 L/min (0.6 gpm). Clarifying whether the assumed leakage is for one or two SGs and why.

c. The proposed revision to page 11 of the March 2, 2016 attachment (Bases page B 3.4.17-2) reads, “In these analyses, the steam discharge to the atmosphere is based on the total primary to secondary leakage from all SGs of 1.14 L/min (0.3 gpm) or is assumed to increase to 1.14 L/min (0.3 gpm) as a result of accident induced conditions.” It is the staff’s understanding from part (h) of the response, from FSAR Chapter 15, and from the response to RAI 108-7973, Question 15.00.03-2 (dated 5/9/2016, ML16130A547) that a steam line break (SLB) is the limiting accident and assumes a total leakage from the steam generators of 2.27 L/min (0.6 gpm). Please clarify how the proposed value of 1.14 L/min is consistent with the APR1400 accident analyses or discuss your plans to revise the TS Bases for consistency with the accident analyses.


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