

## **KHNPDCDRAIsPEm Resource**

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**From:** Ward, William  
**Sent:** Friday, October 30, 2015 3:11 PM  
**To:** apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; Mannon, Steven (steven.mannon@aecom.com); Tyree, Christopher (christopher.tyree@aecom.com)  
**Cc:** Lee, Samuel; Ciocco, Jeff; Makar, Gregory; Mitchell, Matthew; Olson, Bruce; Talbot, Frank  
**Subject:** APR1400 Design Certification Application RAI 277-8227 (14.2 {10.4.8} - Initial Test Program)  
**Attachments:** APR1400 DC RAI 277 MCB 8227.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. We may adjust the schedule accordingly.

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

Thank you,

**William R. Ward, P.E.**  
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**Sent Date:** 10/30/2015 3:10:37 PM  
**Received Date:** 10/30/2015 3:10:38 PM  
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## REQUEST FOR ADDITIONAL INFORMATION 277-8227

Issue Date: 10/30/2015

Application Title: APR1400 Design Certification Review – 52-046

Operating Company: Korea Hydro & Nuclear Power Co. Ltd.

Docket No. 52-046

Review Section: 14.02 - Initial Plant Test Program - Design Certification and New License Applicants

Application Section:

### QUESTIONS

14.02-38

The staff determined that the additional information is needed about the preoperational testing plan for the Steam Generator Blowdown System (FSAR Tier 2, Subsection 14.2.12.1.66) for the staff to complete its review in accordance with 10 CFR 52.79(a)(28) and 52.79(d). The additional information is based on following the guidance in RG 1.68. Appendix A-1 of RG 1.68 identifies system and component operability tests, including the components for the secondary coolant and radioactive waste handling systems (A-1.m.).

- a. Provide a more detailed description of the objective. Section 1.1 of the test plan states that the objective is, "To verify the proper operation of the steam generator blowdown system (SGBDS)." This system has several functions, including containment isolation, water purification, interface with the sampling system, determination of the appropriate flow path (condenser or liquid radioactive waste), etc. The test objective should identify the functions that need to be tested to verify proper operation of the system.
- b. The staff notes that the Steam Generator Blowdown System is abbreviated "SGBDS" in this test plan, but "SGBS" in FSAR Tier 2 Section 10.4.8, "Steam Generator Blowdown System." Please justify this difference or change the FSAR for consistency.
- c. Add a "Test Method" requirement to verify that the blowdown water can be sampled in accordance with the system design. If that requirement is included in another preoperational test plan, provide that information in the response.
- d. Section 3.6 of the test plan is intended to verify the ability to regenerate resin, but this is not listed as a function of the SGBS in Subsection 10.4.8 of the FSAR. Conversely, the SGBS does have a secondary water chemistry function that is not addressed in the SGBS test plan. Explain how the test plan addresses the SGBS secondary water chemistry function and in which section(s) of the test plan. In addition, describe the basis for including the resin regeneration requirement.
- e. Revise Section 5.0 of the test plan, "Acceptance Criteria," to provide a complete description of the criteria needed to demonstrate that the system will operate in accordance with the design. The criterion that the system "operates as described in Subsection 10.4.8" is not sufficient because not all of the information in Section 4.0, "Data Required," can be found in FSAR Subsection 10.4.8. For example, FSAR Section 10.4.8 does not provide information such as valve opening and closing times, or how to assess operation of the demineralizers.