KHNPDCDRAIsPEm Resource

From:	Ciocco, Jeff
Sent:	Monday, May 09, 2016 9:49 AM
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Cc:	Andrukat, Dennis; Dias, Antonio; Wunder, George; Williams, Donna
Subject:	APR1400 Design Certification Application RAI 4796-8556 (10.04.10 - Auxiliary Steam System)
Attachments:	APR1400 DC RAI 476 SPSB 8556.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. However, KHNP requests, and we grant, 45 days to respond to this RAI. We may adjust the schedule accordingly.

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

Thank you,

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REQUEST FOR ADDITIONAL INFORMATION 476-8556

Issue Date: 05/09/2016
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 10.04.10 - Auxiliary Steam System
Application Section: 10.04.10

QUESTIONS

10.04.10-1

10 CFR 20.1406, “Minimization of contamination,” requires in part that each DC applicant shall describe how the facility design and procedures for operation will minimize, to extent practicable, contamination of the facility and environment, as well as the generation of radioactive waste.

In DCD Tier 2, Subsection 10.4.10.2.3 “Design Features for Minimization of Contamination,” the applicant states that the APR1400 is designed with specific features to meet the requirements of 10 CFR 20.1406 and Regulatory Guide 4.21. DCD Tier 2, Subsection 10.4.10.2.3, goes on to state that piping embedment shall be minimized to the extent practicable and that buried piping in the yard and between buildings and facilities shall be minimized to the extent practicable. However, DCD Tier 2, Subsection 10.4.10.2.3 also states under "Decommissioning Planning," that the auxiliary steam system is designed with no embedded or buried piping. DCD continues by stating that yard piping is routed underground in a concrete tunnel designed with leakage collection and detection.

Although either design would satisfy 10 CFR 20.1406, these statements do not clearly align with each other and provide confusion to the NRC staff as to what the actual design will be.

The applicant is requested to clarify the actual design of the auxiliary steam system piping with regards to meeting the requirements of 10 CFR 20.1406. The applicant is requested to modify the DCD Sections 10.4.10 and 12.4 to clearly depict a consistent design.

10.04.10-2

10 CFR 52.6(a) states in part that the information provided by an applicant for a standard design certification shall be complete and accurate in all material respects.

Regulatory Guide 1.29, Revision 4, Regulatory Position C.1.o states in part that the primary and secondary reactor containment SSC(s), including their foundation and supports, are designated as Seismic Category I and must be designed to withstand the effects of the SSE [safe shutdown earthquake] and remain functional. Regulatory Position C.2 states that those SSCs of which continued function is not required but of which failure could reduce the functioning of any plant feature included in Regulatory Position C.1 to an unacceptable safety level should be designed and constructed so that the SSE would not cause such failure.

In DCD Tier 2, Figure 10.4.10-1, "Auxiliary Steam System Flow Diagram," (sheet 1 of 3), the applicant depicts piping inside the reactor containment building (after the containment penetration) as seismic category II and quality group D. However, DCD Tier 2, Table 3.2-1, "Classification of Structures, Systems, and Components," (3 of 86), does not indicate any auxiliary steam system components within the reactor containment building other than the containment penetration itself which is classified as seismic category I and quality group B. Table 3.2-1, Item 4.c does state that "others" would be seismic category III.

Without proper classification of this system's components within the reactor containment building, failures of those portions could damage safety-related equipment. If one is to bin the reactor containment

building piping and components into Table 3.2-1, Item 4.c as seismic category III, this would be unacceptable for a steam piping located in the reactor containment building that contains safety-related equipment required to withstand the effects of a safe shutdown earthquake and remain functional.

The applicant is requested to clarify the actual design classification of the auxiliary steam system components and piping within the reactor containment building. The applicant is requested to modify DCD Figure 10.4.10-1 and Table 3.2-1 to clearly depict a consistent design.


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