KHNPDCDRAIsPEm Resource

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Sent: Wednesday, August 26, 2015 2:31 PM
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Cc: Hart, Michelle; McCoppin, Michael; Steckel, James; Lee, Samuel
Subject: APR1400 Design Certification Application RAI 173-8213 (15.00.03 - Design Basis Accidents Radiological Consequence Analyses for Advanced Light Water Reactors)
Attachments: image001.jpg; APR1400 DC RAI 173 RPAC 8213.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 173-8213

Issue Date: 08/26/2015
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 15.00.03 - Design Basis Accidents Radiological Consequence Analyses for Advanced Light Water Reactors
Application Section: 15.6.5.5

QUESTIONS

15.00.03-29

10 CFR 52.47(a)(2)(iv) requires that an application for a design certification include a final safety analysis report that provides a description and safety assessment of the facility. The safety assessment analyses are done, in part, to show compliance with the radiological consequence evaluation factors in 52.47(a)(2)(iv)(A) and 52.47(a)(2)(iv)(B) for offsite doses, 10 CFR 50, Appendix A, GDC 19 for control room radiological habitability, and the requirements related to the technical support center in 10 CFR 52.47(b)(8) and (b)(11) and Paragraph IV.E.8 of Appendix E to 10 CFR Part 50. The radiological consequences of design basis accidents are evaluated against these regulatory requirements and the dose acceptance criteria given in SRP 15.0.3.

In DCD Section 15.6.5.5.1.2, the assumptions on the analysis of engineered safety feature (ESF) system leakage for the the loss-of-coolant accident (LOCA) dose analysis are discussed. On DCD page 15.6-49, the last sentence of the first full paragraph states that the assumed design ESF leakage rate is doubled to 37.8 liters per hour (L/hr) [10 gal/hr] to calculate the dose consequences. However, DCD Table 15.6.5-13, on sheet 2 of 3, lists the ESF leakage rate as 8.08 L/hr (2.13 gal/hr). Please resolve this discrepancy.

15.00.03-30

10 CFR 52.47(a)(2)(iv) requires that an application for a design certification include a final safety analysis report that provides a description and safety assessment of the facility. The safety assessment analyses are done, in part, to show compliance with the radiological consequence evaluation factors in 52.47(a)(2)(iv)(A) and 52.47(a)(2)(iv)(B) for offsite doses, 10 CFR 50, Appendix A, GDC 19 for control room radiological habitability, and the requirements related to the technical support center in 10 CFR 52.47(b)(8) and (b)(11) and Paragraph IV.E.8 of Appendix E to 10 CFR Part 50. The radiological consequences of design basis accidents are evaluated against these regulatory requirements and the dose acceptance criteria given in SRP 15.0.3.

DCD Section 15.6.5.5.1.2 describes the assumptions for the ESF leakage release for the LOCA dose analysis, and includes some description of the modeling of filtration of the releases from the auxiliary building. The staff requires the following information to complete its review of the LOCA ESF system leakage analysis.

a. What safety-related ventilation system provides the filtration for the ESF area, is it the Auxiliary Building Controlled Area Emergency Exhaust System (ABCAEES)?

b. What is the assumption used in the dose analysis for the time after onset of the LOCA when the filtration system reaches full operation and filtration is credited? What is the basis for this time?