KHNPDCDRAIsPEm Resource

From:	Ward, William
Sent:	Friday, July 28, 2017 7:07 PM
To:	apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; daegeun.ahn@gmail.com; Andy Jiyong Oh; Jungho Kim (jhokim082@gmail.com); Rob Sweeney (AECOM)
Cc:	McCoppin, Michael; Ward, William; Hayes, Michelle; Wagage, Hanry; Steckel, James
Subject:	APR1400 Design Certification Application RAI 551-8962 [19.2 - Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance]
Attachments:	APR1400 DC RAI 551 SPRA 8962.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,

William R. Ward, P.E.
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U.S. Nuclear Regulatory Commission
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Subject: APR1400 Design Certification Application RAI 551-8962 [19.2 - Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance]
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Options
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REQUEST FOR ADDITIONAL INFORMATION 551-8962

Issue Date: 07/28/2017
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 19.02 - Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance
Application Section:

QUESTIONS

19.02-1

10 CFR 52.47 (a)(23) requires applications for light-water reactor designs to include "a description and analysis of design features for the prevention and mitigation of severe accidents, e.g., challenges to containment integrity caused by core-concrete interaction, steam explosion, high-pressure core melt ejection, hydrogen combustion, and containment bypass." Specifically, SRP Section 19.0 states that the staff review should address the issues identified in SECY-90-016 [ML003707849] and SECY-93-087 [ML003708021], which the Commission approved in related SRMs, dated June 26, 1990 [ML003707885], and July 21, 1993 [ML003760768], respectively, for prevention and mitigation (e.g., equipment survivability).

APR1400-E-P-NR-14003-P, Rev. 0, "Severe Accident Analysis Report," Section 3.2 states that "The [Emergency Containment Spray Backup System] ECSBS is actuated 24 hours after the onset of core damage at a flow rate of [proprietary information]." It begins to cool and depressurize the containment atmosphere as shown in Figure 3-7. The result shows that the ECSBS is capable of controlling the containment pressure for a period of 48 hours after 24 hours following the onset of core damage.

When ECSBS adds water into the containment flooding may occur, affecting the equipment relied upon during severe accidents. Therefore, the staff raised this concern during the APR1400 Chapter 19 audit. In response, the applicant presented to the staff the results of flooding evaluation when using ECSBS during severe accidents.

In order for the staff to reach an assurance finding on the conformance to SRP Section 19.0 regarding equipment survivability evaluation, please revise the DCD summarizing the above flooding evaluation.