KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Thursday, October 22, 2015 10:00 AM
To: apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; James Ross; Young H. In (yhin@KHNP.co.kr)
Cc: StPeters, Courtney; Mrowca, Lynn; Steckel, James; Lee, Samuel
Subject: APR1400 Design Certification Application RAI 271-8290 (19 - Probabilistic Risk Assessment and Severe Accident Evaluation)
Attachments: APR1400 DC RAI 271 SPRA 8290.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, 90 days to respond to the RAI question. We may adjust the schedule accordingly.

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

Thank you,

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United States Nuclear Regulatory Commission
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Subject: APR1400 Design Certification Application RAI 271-8290 (19 - Probabilistic Risk Assessment and Severe Accident Evaluation)
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Received Date: 10/22/2015 10:00:08 AM
From: Ciocco, Jeff

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Options
Priority: Standard
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REQUEST FOR ADDITIONAL INFORMATION 271-8290

Issue Date: 10/22/2015
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation
Application Section:

QUESTIONS

19-15

Regulation 10 CFR 52.47(a)(27) requires that a standard design certification applicant provide a description of the design specific PRA. SRP Chapter 19, Revision 3 (Draft), Section I. "Areas of Review, Review Interfaces" states that the staff should "…confirm that: All common-cause failure (CCF) mechanisms for digital instrumentation and control (DI&C) systems have been accounted for in the PRA." The staff reviewed APR1400 DCD Section 19.1, "Probabilistic Risk Assessment," and did not find sufficient information describing the modeling of the DI&C system, including the hardware and software common-cause failures, to be able to make this conclusion. Therefore, in order for the staff to reach a reasonable assurance finding that the description of the PRA is adequate, please provide the following details of DI&C modeling in the PRA and include it in the DCD:

- System description (e.g., describe the functions, subsystem interfaces, operator actions, etc.)
- Key assumptions (e.g., modeling, uncertainties)
- CCF analysis of both the hardware and software, including the basis and/or justification of this information
- Failure effects, if modeled at the system/subsystem level


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