

KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Monday, June 01, 2015 7:20 AM
To: apr1400rai@khnp.co.kr; Chang, Harry (hyunseung.chang@gmail.com); Yunho Kim (yshh8226@gmail.com); KHNPDCDRAIsPEm Resource; Steven Mannon
Cc: Lee, Samuel; Olson, Bruce; Travis, Boyce; ODriscoll, James
Subject: APR1400 Design Certification Application RAI 18-7900 (14.3.11 Containment Systems and Severe Accidents - Inspections, Tests, Analyses, and Acceptance Criteria)
Attachments: APR1400 DC RAI 18 SCVB 7900.pdf; image001.jpg

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,

Jeff Ciocco
New Nuclear Reactor Licensing
301.415.6391
jeff.ciocco@nrc.gov



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From: Ciocco, Jeff

Created By: Jeff.Ciocco@nrc.gov

Recipients:

"Lee, Samuel" <Samuel.Lee@nrc.gov>
Tracking Status: None
"Olson, Bruce" <Bruce.Olson@nrc.gov>
Tracking Status: None
"Travis, Boyce" <Boyce.Travis@nrc.gov>
Tracking Status: None
"ODriscoll, James" <James.ODriscoll@nrc.gov>
Tracking Status: None
"apr1400rai@khnp.co.kr" <apr1400rai@khnp.co.kr>
Tracking Status: None
"Chang, Harry (hyunseung.chang@gmail.com)" <hyunseung.chang@gmail.com>
Tracking Status: None
"Yunho Kim (yshh8226@gmail.com)" <yshh8226@gmail.com>
Tracking Status: None
"KHNPDCDRAIsPEm Resource" <KHNPDCDRAIsPEm.Resource@nrc.gov>
Tracking Status: None
"Steven Mannon" <steven.mannon@aecom.com>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

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REQUEST FOR ADDITIONAL INFORMATION 18-7900

Issue Date: 06/01/2015

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 14.03.11 - Containment Systems and Severe Accidents - Inspections, Tests, Analyses, and Acceptance Criteria

Application Section: 14.3.11

QUESTIONS

14.03.11-1

REQUIREMENT

10 CFR 52.47(b)(1) states, in part, that a design certification (DC) application must contain the necessary inspections, tests, analysis and acceptance criteria (ITAAC) to provide reasonable assurance that a facility incorporating a DC is constructed in accordance with the final design.

ISSUE

No ITAAC is provided to ensure that the holdup volumes (i.e., the reactor cavity, HVT, and other volumes that do not participate in recirculation or must be filled before recirculation can begin) in the as-built design are sized in accordance with the assumptions made in the analyses in Tier 2, Section 6.8 (e.g., the minimum water level in the IRWST as described and referenced in 6.8) of the design control document (DCD).

In addition, no ITAAC is provided to ensure that the containment subcompartments, as constructed, are sized and have access openings in accordance with the assumptions made in the analyses in Tier 2, Section 6.2.1.2 of the DCD.

INFORMATION NEEDED

Update the DCD to add ITAAC that serve to reconcile the assumptions described in Tier 2 so that staff has reasonable assurance the as-built facility has an adequate long-term water supply for core cooling and that containment subcompartments will behave as described in Tier 2 following a postulated line break.

14.03.11-2

REQUIREMENT

10 CFR 52.47(b)(1) states, in part, that a design certification (DC) application must contain the necessary inspections, tests, analysis and acceptance criteria (ITAAC) to provide reasonable assurance that a facility incorporating a DC is constructed in accordance with the final design.

ISSUE

Table 2.11.1-2, "Containment Structure ITAAC", items 4 and 5 describe how a report will exist to demonstrate the containment design pressure will remain at least 10% below its design pressure at peak and 50% below the peak pressure 24 hours following the postulated break. In essence, these items describe analyses in Tier 2, Section 6.2 of the design control document (DCD). Explain how information in such a report would differ from the DCD and how it would show the as-built design conforms to the analysis described in Section 6.2.

REQUEST FOR ADDITIONAL INFORMATION 18-7900

INFORMATION NEEDED

As it stands, these ITAAC provides no value in determining that the as-built design matches the design described in Tier 2 of the DCD due to the lack of specificity. Although the reports listed may provide the information required to provide reasonable assurance that the assumptions made in Section 6.2.1 of the DCD are valid, it is not clear how the reports would be acceptable to close out the ITAAC. ITAAC, and specifically acceptance criteria, need to be specific and have a quantifiable or verifiable target. Revise the ITAAC listed such that as-built parameters are verified to match the assumptions used in Section 6.2 (e.g. containment volume, heat sink area).

