

KHNPDCRAIsPEm Resource

From: Ciocco, Jeff
Sent: Monday, November 16, 2015 12:59 PM
To: apr1400rai@khnp.co.kr; KHNPDCRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; Steven Mannon; Christopher Tyree
Cc: Stutzcage, Edward; McCoppin, Michael; Olson, Bruce; Vera, John; Lee, Samuel
Subject: APR1400 Design Certification Application RAI 310-8355 (14.03.08 - Radiation Protection Inspections, Tests, Analyses, and Acceptance Criteria)
Attachments: APR1400 DC RAI 310 RPAC 8355.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,

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:

"Stutzcage, Edward" <Edward.Stutzcage@nrc.gov>
Tracking Status: None
"McCoppin, Michael" <Michael.McCoppin@nrc.gov>
Tracking Status: None
"Olson, Bruce" <Bruce.Olson@nrc.gov>
Tracking Status: None
"Vera, John" <John.Vera@nrc.gov>
Tracking Status: None
"Lee, Samuel" <Samuel.Lee@nrc.gov>
Tracking Status: None
"apr1400rai@khnp.co.kr" <apr1400rai@khnp.co.kr>
Tracking Status: None
"KHNPDCDRAIsPEm Resource" <KHNPDCDRAIsPEm.Resource@nrc.gov>
Tracking Status: None
"Harry (Hyun Seung) Chang" <hyunseung.chang@gmail.com>
Tracking Status: None
"Andy Jiyong Oh" <jiyong.oh5@gmail.com>
Tracking Status: None
"Steven Mannon" <steven.mannon@aecom.com>
Tracking Status: None
"Christopher Tyree" <Christopher.tyree@aecom.com>
Tracking Status: None

Post Office: HQPWMSMRS07.nrc.gov

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REQUEST FOR ADDITIONAL INFORMATION 310-8355

Issue Date: 11/16/2015

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 14.03.08 - Radiation Protection Inspections, Tests, Analyses, and Acceptance Criteria

Application Section: Tier 1, Section 2.7.4.4

QUESTIONS

14.03.08-12

This is a follow-up to RAI 8054, Question 14.03.08-3

BASIS

10 CFR 50, GDC 61, requires that the fuel storage and handling, radioactive waste, and other systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions and with suitable shielding for radiation protection and with appropriate containment and confinement.

SRP Section 14.3 indicates that the purpose of inspections, tests, analysis, and acceptance criteria (ITAAC), is to verify that a facility referencing the design certification is built and operates in accordance with the design certification and applicable regulations.

In addition, SRP Section 14.3.8 indicates that the reviewer should ensure that Tier 1 identifies and describes, commensurate with their safety significance, those SSCs that provide radiation shielding, confinement or containment of radioactivity, ventilation of airborne contamination, or radiation (or radioactivity concentration) monitoring for normal operations and during accidents.

ANSI/ANS-57.1-1992, which is referenced by the applicant, indicates that fuel handling equipment shall be designed so that the operator will not be exposed to greater than 2.5 mrem/hour from an irradiated fuel unit, control component, or both, elevated to the up position interlock with the pool at normal operating water level.

ISSUE

In the response to RAI 8054, Question 14.03.08-3, the applicant indicated that the Refueling Machine (RM) and Spent Fuel Handling Machine (SFHM) include an ITAAC (ITAAC item 8 of Table 2.7.4.4-2) to ensure that they contain mechanical stops to restrict the withdrawal of spent fuel assemblies. However, as specified in RAI 8054, Question 14.03.08-3, the ITAAC should ensure that the fuel height is limited so that the dose rate to an operator does not exceed 2.5 mrem/hour. The 2.5 mrem/hour is specified in ANSI/ANS-57.1-1992, which is referenced by the applicant for fuel handling. The current ITAAC Item 8 of Table 2.7.4.4-2, does not specify what an acceptable lift height or dose rate is, therefore, it is unclear from the ITAAC if the mechanical stops will limit the dose to operators to within 2.5 mrem/hour in accordance with the information in Tier 2 of the FSAR. Therefore, the ITAAC should be updated in a way that ensures that if the ITAAC is met, the dose to an operator will not exceed 2.5 mrem/hour from the maximum raised fuel assembly, control element, or both, with the water level in the pools at the lower limit of the normal operating water level. This will ensure that a facility referencing design certification will meet the 2.5 mrem/hour criteria specified in the design certification. Please update the ITAAC accordingly.



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