

KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Thursday, September 22, 2016 1:59 PM
To: apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Junggho Kim (jhokim082@gmail.com); Andy Jiyong Oh; Steven Mannon
Cc: Ashcraft, Joseph; Curtis, David; Ward, William
Subject: APR1400 Design Certification Application RAI 521-8696 (07.06 - Interlock Systems Important to Safety)
Attachments: APR1400 DC RAI 521 ICE 8696.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:

"Ashcraft, Joseph" <Joseph.Ashcraft@nrc.gov>
Tracking Status: None
"Curtis, David" <David.Curtis@nrc.gov>
Tracking Status: None
"Ward, William" <William.Ward@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
"Jungho Kim (jhokim082@gmail.com)" <jhokim082@gmail.com>
Tracking Status: None
"Andy Jiyong Oh" <jiyong.oh5@gmail.com>
Tracking Status: None
"Steven Mannon" <steven.mannon@aecom.com>
Tracking Status: None

Post Office: HQPWMSMRS08.nrc.gov

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REQUEST FOR ADDITIONAL INFORMATION 521-8696

Issue Date: 09/22/2016

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 07.06 - Interlock Systems Important to Safety

Application Section: 7.6.1.5

QUESTIONS

07.06-3

10 CFR 52.47(a)(2) requires that a standard design certification applicant provide a description and analysis of the structures, systems, and components of the facility, with emphasis upon performance requirements, the bases, with technical justification therefor, upon which these requirements have been established, and the evaluations required to show that safety functions will be accomplished.

DCD descriptions disagree regarding the existence of Component Cooling Water (CCW) cross-connections. NRC staff needs clarification in order to make a safety finding regarding system interlocks in the CCW system.

DCD Tier 2 Section 7.6.1.5, "Interlocks Required to Preclude Inadvertent Interties between Redundant or Diverse Safety Systems," states "...there is no connection between the CCW safety divisions, the APR1400 design does not include interlocks to prevent inadvertent interties between redundant or diverse safety systems." However, this statement conflicts with DCD Tier 2, Sections 9.2.2.2.4 (2nd paragraph) and 9.2.2.2.4.c, Figure 9.2.2-1, "Component Cooling Water System Flow Diagram," DCD Tier 1, Section 2.7.2.2.1, "Design Description," Table 2.7.2.2-2, "Component Cooling Water System Components List," and Figure 2.7.2.2-1, "Component Cooling Water System," which reflect cross connection supply and return valves (CC-937, 938, 939, and 940) connecting the two CCW divisions and that these two valves in series automatically close on a Safety Injection Actuation Signal (SIAS) control signal from different divisions.

Clarify and update DCD Tier 1 and 2 to reflect whether there are cross-connections between the two divisions of CCW. If there are cross-connections, ensure that instrumentation and control system descriptions are appropriately corrected.



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