

KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Wednesday, February 03, 2016 7:09 AM
To: apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; Christopher Tyree
Cc: Drzewiecki, Timothy; Karas, Rebecca; Steckel, James; Lee, Samuel
Subject: APR1400 Design Certification Application RAI 395-8478 (15.06.01 - Inadvertent Opening of a PWR Pressurizer Pressure Relief Valve or a BWR Pressure Relief Valve)
Attachments: APR1400 DC RAI 395 SRSB 8478.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, 60 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,

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Subject: APR1400 Design Certification Application RAI 395-8478 (15.06.01 - Inadvertent Opening of a PWR Pressurizer Pressure Relief Valve or a BWR Pressure Relief Valve)
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REQUEST FOR ADDITIONAL INFORMATION 395-8478

Issue Date: 02/03/2016

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 15.06.01 - Inadvertent Opening of a PWR Pressurizer Pressure Relief Valve or a BWR Pressure Relief Valve

Application Section:

QUESTIONS

15.06.01-2

General Design Criteria (GDC) 10 requires that specified acceptable fuel design limits (SAFDLs) are not exceeded during an anticipated operational occurrence (AOO). 10 CFR 52.47(a)(9) requires that applicants for light-water cooled nuclear power plants provide an evaluation of the standard plant design against the standard review plan (SRP) revision in effect 6 months before the docket date of the application. Where a difference exists, the evaluation shall discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations that underlie the corresponding SRP section.

NRC staff issued RAI 170-8163 during the review of Section 15.6.1 of the APR1400 Design Control Document (DCD). In RAI 170-8163, NRC staff questioned the treatment of the inadvertent opening of a pressurizer relief valve (IOPRV) event as a postulated accident instead of an anticipated operational occurrence (AOO) as specified in the SRP. Additionally, Table 1.9-2 of the DCD states that the APR1400 conforms to SRP Section 15.6.1. Classifying the IOPRV event as a postulated accident results in a significant difference from the SRP acceptance criteria. Therefore, Table 1.9-2 of the DCD is currently incorrect and further justification in Section 15.6.1 of the DCD is required per 10 CFR 52.47(a)(9).

The KHNP response to RAI 170-8163 did not alleviate NRC staff concerns because:

1. The RAI response contained no DCD update to correct Table 1.9-2.
2. The RAI response contained no DCD update to provide justification for treating the IOPRV event as a postulated accident.
3. The RAI response contains insufficient justification for treating the IOPRV event as a postulated accident. The RAI response states, "... the main valve would be able to operate by opening double motor operated pilot valves for the rapid depressurization function of reactor coolant system when a total loss of feedwater event occurs. Therefore, there is no need to consider an operator error for the POSRV because this valve is fully automatic, while the PORV has the tendency of an operator error identified in SRP. Consequently, the scenarios identified in the SRP are not applicable to the APR1400 design." NRC staff understands that the overpressure protection function of the pilot operated safety relief valves (POSRVs) is fully automatic and passive. NRC staff's concern is in regard to the double motor operated pilot valves which can be manually operated from the control room. The RAI response does not address the potential for a spurious electrical signal or operator error, in regards to the operation of the double motor operated pilot valves, which would lead to an IOPRV event.

NRC staff requests that KHNP update Section 15.6.1 of the DCD with justification for stating that a spurious electrical signal or operator error is not applicable to the APR1400. If sufficient

REQUEST FOR ADDITIONAL INFORMATION 395-8478

justification is not available, Section 15.6.1 of the DCD will need to be updated with an appropriate analysis to demonstrate compliance with the Commission's regulations that underlie SRP Section 15.6.1. Additionally, Table 1.9-2 of the DCD needs to be updated accordingly.



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