

KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Tuesday, October 20, 2015 2:05 PM
To: KHNPDCDRAIsPEm Resource
Subject: FW: APR1400 Design Certification Application RAI 254-8270 (11.02 - Liquid Waste Management System)
Attachments: APR1400 DC RAI 254 RPAC 8270.pdf

From: Ciocco, Jeff
Sent: Monday, October 19, 2015 8:59 AM
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Subject: APR1400 Design Certification Application RAI 254-8270 (11.02 - Liquid Waste Management System)

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,

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REQUEST FOR ADDITIONAL INFORMATION 254-8270

Issue Date: 10/19/2015
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 11.02 - Liquid Waste Management System
Application Section: 11.2

QUESTIONS

11.02-7

10 CFR 50 Appendix A GDC 1 and 2 as they relate to Quality Assurance standards and identification of structures systems and components important to safety must be designed to withstand the effects of natural phenomena. 10 CFR 50 Appendix A GDC 60 and Regulatory Guide 1.143 as they relate to the control of release of radioactive materials and the radwaste system safety classifications must be applied here.

Staff review of DCD section 10.4.8 indicates that insufficient details are provided to describe the boundaries of the systems and their corresponding safety classifications. Staff is seeking sufficient details describing the radwaste systems including their respective isolation components. Currently the Staff is unable to determine if each system's isolation components are also included in the safety classification for the systems. DCD section 10.4.8.1.2 that states:

“The safety classification for the SGBS components applies to components up to and including the nearest valves, fittings, and/or welded/flanged nozzle connections.” This does not provide a description of isolation components in the description of LWMS systems.

DCD Section 11.3.1.3 clarifies this stating: “The safety classification for the GRS components applies to components, up to and including the nearest isolation valves, fittings, and/or welded/flanged nozzle connections.”

Each radwaste SSC classifications need to address the following information:

1. All components connected to a component classified as a RW-IIa (ex. Piping, pumps, etc) are also classified as RW-IIa, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIa component.
2. All components connected to a component classified as a RW-IIb (ex. Piping, pumps, etc) are also classified as RW-IIb, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIb component.
3. All components connected to a component classified as a RW-IIc (ex. Piping, pumps, etc) are also classified as RW-IIc, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIc component.

Please address the items above and provide a mark-up on the proposed DCD changes.

REQUEST FOR ADDITIONAL INFORMATION 254-8270

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

In addition, Regulatory Guide 1.143, Revision 2, provides design specifications for steam generator blowdown (SGBS) and radwaste SSCs.

FSAR Section 10.4.8.1.2 states that “The SGBS components are housed within the auxiliary building designed as seismic Category I, which exceeds seismic design requirements for radwaste safety classification RW-IIc.” However, Regulatory Position 5 of Regulatory Guide 1.143 indicates that structures (buildings) are classified and designed based on the total unmitigated radiological release at the protected area boundary and total unmitigated exposure to personnel. While Table 2 of Regulatory Guide 1.143 provides design requirements for RW-IIa, RW-IIb, and RW-IIc structures, Regulatory Position 5 only provides two options for building classification (RW-IIa and RW-IIb). While unmitigated radiological release and exposure calculations are necessary to determine the classification of structures, if the structure is classified as RW-IIa or exceeds the requirements of RW-IIa, no calculation is necessary because the structure meets or exceeds the maximum criteria in the regulatory guide.

Therefore, please revise the statement to indicate that the building meets or exceeds the design requirements (not only seismic requirements) of RW-IIa.

Please address the items above and provide a mark-up on the proposed DCD changes.

