KHNPDCDRAIsPEm Resource

From: Ward, William
Sent: Friday, October 30, 2015 3:54 PM
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Cc: Lee, Samuel; Ciocco, Jeff; Olson, Bruce; Talbot, Frank; Kavanagh, Kerri
Subject: APR1400 Design Certification Application RAI 278-8226 (14.2 - Initial Test Program)
Attachments: APR1400 DC RAI 278 QVIB 8226.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. We may adjust the schedule accordingly.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

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REQUEST FOR ADDITIONAL INFORMATION 278-8226

Issue Date: 10/30/2015
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 14.02 - Initial Plant Test Program - Design Certification and New License Applicants
Application Section: DCD Section 14.2

QUESTIONS

14.02-39

GDC 1, “Quality standards and records” of Appendix A, “General Design Criteria for Nuclear Power Plants” to 10 CFR Part 50 states, in part, that structures, systems, and components important to safety shall be tested to quality standards commensurate with the importance of the safety functions to be performed.

RG 1.68, Section A, Introduction, page 3, 1st paragraph states “While regulations require all SSCs important to safety be tested, all of them need not be tested to the same stringent requirements. Specifically, GDC 1, “Quality Standards and Records” of Appendix A to 10 CFR Part 50 requires, in part, that SSCs important to safety shall be tested to quality standards commensurate with the importance of the safety functions to be performed.”

In DCD Section 14.1, “Specific Information to be Addressed for the initial Plant test Program,” The NRC staff determined that the DC applicant did not include 10 CFR Part 50, Appendix A, General Design Criteria (GDC) 1, “General Requirements,” as it related to testing important to safety SSCs that are within the scope of the Quality Assurance Program (QAP) and the ITP. Please add 10 CFR Part 50, Appendix A, GDC 1 as a regulatory basis for SSCs that should be tested within the scope of the QAP and ITP.

14.02-40

In RG 1.68, Section A, “Introduction,” page 3, states, “While regulations require all SSCs important to safety be tested, all of them need not be tested to the same stringent requirements. Specifically, GDC 1, “Quality Standards and Records,” of Appendix A to 10 CFR Part 50 requires, in part, that SSCs important to safety shall be tested to quality standards commensurate with the importance of the safety functions to be performed.

RG 1.68, Appendix B, “Discussion,” states, in part, “As mentioned in the introduction to this regulatory guide, the ITP is required to include suitable testing of all SSCs important to safety. Both Appendices A and B to 10 CFR Part 50 recognize that some SSCs are more important to safety than others. Thus, the NRC does not intend that the same test requirements be established for all SSCs important to safety. Rather, applicants should implement a graded approach to testing in order to provide reasonable assurance, considering the importance to safety of the item, that the item will perform satisfactorily while, at the same time, accomplishing the testing in a cost-effective manner. Documentation (such as procedures and records) associated with testing also should be commensurate with the importance to safety of the item being tested. In addition, RG 1.68, Page 9, states, that “the ITP should include testing the performance of non-safety related risk significant systems.”

REQUEST FOR ADDITIONAL INFORMATION 278-8226

The NRC staff reviewed APR1400 DCD Table 17.4-1, “Risk-Significant Within-Scope RAP SSCs” and DCD Chapter 19 and identified a significant number of non-safety related risk significant SSCs that are important to safety and should be tested under the ITP. For example, the NRC staff identified the Auxiliary Charging Pump, SSC ID CV-PP03, and the Auxiliary Charging Pump Discharge Check Valve, SSC ID CV334, in DCD Table 17.4-1 as risk-significant components; however, no test method and test acceptance criteria are identified in DCD Sections 14.2.12.1.2 and/or 14.2.12.1.7 to demonstrate a diverse means of RCP seal cooling to prevent a RCP seal Loss of Coolant Accident (LOCA) event.

Please provide tests methods and acceptance criteria for all non-safety-related risk significant SSCs that are also considered important to safety and identified in APR1400 DCD Table 17.4-1 and should be included within the scope of the ITP in APR1400 DCD Section 14.2.