KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Monday, May 16, 2016 8:05 AM
To: apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Jungho Kim (jhokim082 @gmail.com); Andy Jiyong Oh; James Ross
Cc: Widrevitz, Dan; Mitchell, Matthew; Umana, Jessica; Williams, Donna
Subject: APR1400 Design Certification Application RAI 482-8593 (05.02.03 - Reactor Coolant Pressure Boundary Materials)
Attachments: APR1400 DC RAI 482 MCB 8593.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,

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U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

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From: Ciocco, Jeff

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Options
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Return Notification: No
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REQUEST FOR ADDITIONAL INFORMATION 482-8593

Issue Date: 05/16/2016
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 05.02.03 - Reactor Coolant Pressure Boundary Materials
Application Section:

QUESTIONS

05.02.03-22

Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix A, General Design Criteria (GDC) 1 and 30; and 10 CFR Part 50.55a contain provisions regarding quality standards for material specifications that are met by compliance with the applicable provisions of the ASME Boiler and Pressure Vessel Code (ASME Code) and by acceptable application of materials Code Cases as described in Regulatory Guide (RG) 1.84, "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III." Specifications for permitted materials are identified in the ASME Code, Section III, Appendix I, or described in detail in the ASME Code, Section II. 10 CFR Part 50, Appendix A, GDC 4 requires that components be compatible with environmental conditions associated with normal operation, maintenance, testing, and postulated accidents.

In order for the staff to determine whether the APR1400 design meets these criteria with regard to reactor coolant pressure boundary (RCPB) materials, the staff is requesting the following information.

Per RAI Question No. 447-8548, Q No. 05.02.03-20, the staff requested that the applicant address the cast austenitic stainless steel (CASS) screening criteria of 260°C (500°F) either by amending it to the staff approved criteria of 250°C (482°F) or by providing a substantive technical basis for the higher temperature criteria. The applicant did not address this aspect of the RAI in the provided response.

The staff position, as presented in License Renewal Issue No. 98-0030 (ADAMS Accession No. ML003717179) identifies that CASS components with service conditions above 250°C (482°F) should adhere to Table 2 of the same. Limits on delta ferrite are noted in DCD Sections 5.2.3.4.1.c and 5.2.3.4.5 for CASS components with service conditions above 260°C (500°F). This discrepancy is inconsistent with the staff position on the adequate control of CASS aging which supercedes the applicant's cited precedent from the CESSAR-DC.

The staff requests that the applicant conform fully to the staff position as outlined in License Renewal Issue No. 98-0030 with regards to the screening temperature of 250°C, not the proposed 260°C; alternatively that the applicant provide a substantive technical basis for the higher criteria.

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