ArevaEPRDCPEm Resource

From: Getachew Tesfaye
Sent: Thursday, March 12, 2009 7:38 PM
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Cc: Jeffrey Poehler; David Terao; Walton Jensen; Christopher Jackson; Michael Miernicki; Joseph Colaccino; ArevaEPRDCPEm Resource
Subject: Draft - U.S. EPR Design Certification Application RAI No. 203 (2253_2276), FSAR Ch. 6
Attachments: Draft RAI_203_CEB1_2253_SPCV_2276.doc

Attached please find draft RAI No. 203 regarding your application for standard design certification of the U.S. EPR. If you have any question or need clarifications regarding this RAI, please let me know as soon as possible, I will have our technical Staff available to discuss them with you.

Please also review the RAI to ensure that we have not inadvertently included proprietary information. If there are any proprietary information, please let me know within the next ten days. If I do not hear from you within the next ten days, I will assume there are none and will make the draft RAI publicly available.

Thanks,
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Hearing Identifier: AREVA_EPR_DC_RAIs
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Request for Additional Information No. 203 (2253, 2276), Revision 0

3/12/2009

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 06.01.02 - Protective Coating Systems (Paints) - Organic Materials
SRP Section: 06.02.01 - Containment Functional Design
Application FSAR Ch.: 6

QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)
QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

06.01.02-7

Background

RAI 6.1.2-1 asked how the proposed definition of Service Level I and II coating classifications by the applicant in FSAR Tier 2, Section 6.1.2.1.2.1 met the regulatory requirements. More specifically, it asked the applicant to provide additional detail regarding the specific areas of containment in which Service Level II coatings are proposed to be used and to provide justification as to why coatings in these areas do not have the potential to be affected by a design-basis accident or affect the operation of any emergency safety features. The applicant responded that the specific areas within reactor containment in which Service Level II coatings would be used have not yet been identified, but that these areas will be based on the design of the containment sump and the flow characteristics inside containment, and that these areas are compartmentalized. Furthermore, the applicant indicated that the use of Service Level II coatings in containment has a precedent in the industry and cited NRC Accession Number ML 080640544 as a reference. However, the staff was unable to confirm that there is a precedent for the use of Service Level II coatings inside containment based on the reference cited.

Requested Information

1. Please clarify the criteria that will be used to conclude that there will be no path to the containment sump for Service Level II coatings that may fail during a DBA.

2. Please verify the reference supporting the precedent for the use of Service Level II coatings is correct and provide the specific location in the document (page number, paragraph number, etc.) of the statements in this reference that would support your argument.

06.01.02-8

Background

The applicant proposes to use ANSI N101.2-1972 instead of ASTM 3911 as an acceptable standard for qualification of Service Level I coatings in FSAR Tier 2, Section 6.1.2.4. In the applicant's response to RAI 6.1.2-2, it was indicated that the testing requirements in the two standards are the same, but the acceptance criteria are different. The applicant also proposes to use ASTM 3911-03 instead of ASTM 3911-95 that was endorsed in RG 1.54, Rev. 1.

Requested Information

Please explain why ASTM 3911-03 will be used instead of ASTM 3911-95. ANSI N101.2-1972 provides specific acceptance criteria for DBA testing of Service Level 1 coating whereas ASTM 3911-03 indicates the license holder is responsible for establishing acceptance criteria for Service Level 1 coatings. What specific acceptance criteria are proposed?

06.01.02-9

Background

RG 1.54 Revision 1, endorses ASTM 5962-96 as providing guidance that is acceptable for maintaining DBA unqualified coatings. FSAR Tier 2, Section 6.1.2.4, states that ASTM D5962-96 is not considered to be an acceptable standard for maintaining DBA-unqualified coatings in Service Level I areas. In the applicants response to RAI 6.1.2-3, it was indicated that ASTM D5962-96 only addresses the maintenance of known unqualified coatings and that the applicant would manage the allowed quantity of unqualified coatings based on containment sump analyses, net positive suction head analyses, and possibly transport analyses. ASTM D5962-96 does address the total allowed quantity of unqualified coatings which is consistent with the applicant's proposed approach. However, it also provides guidance to maintenance such as re-coating.

Requested Information

1. Since the applicant is proposing to use DBA-unqualified Service Level II coatings in some areas of the containment, why would the EPR coatings program not reference ASTM D5962-96 for maintenance of these coatings?
2. For DBA-unqualified coatings, please identify the procedure or standard will be used for maintenance activities such as recoating.

06.02.01-13

As discussed in our public meeting of February 26, 2009, the staff is performing audit calculations using the TRACE computer code to evaluate reactor vessel mixing following hot leg injection and using the MELCOR computer code to evaluate containment temperature and pressure. The following information is needed so that the staff can perform this work. We believe that this information will be readily available based on the work you have already done in developing Containment Technical Report ANP-10299P.

For the postulated double ended pump suction break analyzed with the new evaluation model of ANP-10299P, provide the following information in electronic tabular form.

1. Flow rate and temperature of the MHSI as a function of time into each cold leg.

2. Flow rate and temperature of the LHSI as a function of time into each cold leg and into each hot leg after hot leg injection begins. We understand that a constant temperature of 140F is used in Areva's safety analyses as a conservative value. For our realistic TRACE analysis we request the actual temperature exiting the RHR heat exchangers (for desgin basis two pump operation). We understand that the RHR heat exchanger exit temperatures are currently available.

3. Steam flow rate and enthalpy leaving each side of the break and liquid flow rate and enthalpy leaving each side of the break.

4. Figures 9-8 through 9-10 of ANP-10299P provide the containment atmospheric pressure and temperature and IRWST temperature as a function of time. Provide this information in electronic tabular form.