ArevaEPRDCPEm Resource

From: Getachew Tesfaye
Sent: Wednesday, January 28, 2009 1:25 PM
To: 'usepr@areva.com'
Cc: Samantha Crane; Juan Peralta; Michael Miernicki; Joseph Colaccino; Meena Khanna; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 158 (1300, 1683, 1775), FSAR Ch. 14
Attachments: RAI_158_CQVP_1300_1683_1775.doc

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on December 16, 2008, and on January 28, 2009, you informed us that the RAI is clear and no further clarification is needed. As a result, no change is made to the draft RAI. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 days, it is expected that a date for receipt of this information will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the published schedule.

Thanks,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 163

Mail Envelope Properties (C56E360E9D804F4B95BC673F886381E71D44FBAC68)

Subject: U.S. EPR Design Certification Application RAI No. 158 (1300, 1683, 1775), FSAR Ch. 14
Sent Date: 1/28/2009 1:24:32 PM
Received Date: 1/28/2009 1:24:33 PM
From: Getachew Tesfaye

Created By: Getachew.Tesfaye@nrc.gov

Recipients:
"Samantha Crane" <Samantha.Crane@nrc.gov>
Tracking Status: None
"Juan Peralta" <Juan.Peralta@nrc.gov>
Tracking Status: None
"Michael Miernicki" <Michael.Miernicki@nrc.gov>
Tracking Status: None
"Joseph Colaccino" <Joseph.Colaccino@nrc.gov>
Tracking Status: None
"Meena Khanna" <Meena.Khanna@nrc.gov>
Tracking Status: None
"ArevaEPRDCPEm Resource" <ArevaEPRDCPEm.Resource@nrc.gov>
Tracking Status: None
"'usepr@areva.com'" <usepr@areva.com>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	791	1/28/2009 1:24:33 PM
RAI_158_CQVP_1300_1683_1775.doc	40442	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Request for Additional Information No. 158 (1300, 1683, 1775), Revision 0

01/28/2009

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 14.02 - Initial Plant Test Program - Design Certification and New License Applicants
Application Section: SRP 14.2

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

14.02-77

Section 14.2.12.3.10, "Steam Generator Downcomer Feedwater System Water Hammer (Test #033)," of the U.S. EPR FSAR states that a visual inspection be performed of the feedwater piping, supports, and sparger to determine the integrity of the components, however, the test does not list specific acceptance criteria by which to verify the integrity. The staff requests that AREVA revise Test #033 to add specific acceptance criteria by which to verify the integrity of the feedwater piping, supports, and sparger.

14.02-78

In Section 14.2.12.4.3, "Turbine Building Crane (Test #042)," of the U.S. EPR FSAR the acceptance criteria references the manufacturer design specifications; however, the manufacturer is not stated. The staff requests that AREVA revise Test #042 to give more specific information on the design specifications for the turbine building crane and include a reference to the appropiate FSAR section that provides the requisite acceptance criteria.

14.02-79

In Section 14.2.12.7.10, "Steam Turbine (Test #068)," of the U.S. EPR FSAR the acceptance criteria directs the reader to the vendor ratings; however, the vendor rating are not stated in the FSAR. The staff requests that AREVA revise Test #068 to give more specific information on the vendor ratings for the steam turbine.

14.02-80

Section 14.2.12.9.1, "Leak-off System (Test #091)," of the U.S. EPR FSAR states that the test should verify the temperature indicator of the LOS and the operation of the alarms, controls and interlocks meets design requirements; however, the acceptance criteria does not reference a section in the FSAR to provide the design requirements. The staff requests that AREVA revise Test #091 to include a reference to the applicable section in the FSAR.

14.02-81

In Section 14.2.12.9.17, "Auxiliary Steam Generating System (Test #107)," of the U.S. EPR FSAR the acceptance criteria references the manufacturer design specifications; however, the manufacturer is not stated. Also, the abstract states that the test should verify that the ASGS provides steam flow as design; however, the acceptance criteria does not reference a section in the FSAR to provide the design requirements. The staff requests that AREVA revise Test #107 to give more specific information on the manufacturer design specifications of the turbine building crane and to include a reference to the applicable section in the FSAR.

14.02-82

Section 14.2.12.13.4, "Pre-Core Reactor Internals Vibration Measurements (Test #164)," states that the test should verify that observed vibration and wear scars are within design limits; however, the acceptance criteria does not reference a section in the FSAR to provide the design requirements. The staff requests that AREVA revise Test #164 to include a reference to the applicable section in the FSAR.

14.02-83

Section 14.2.12.13.14, "Pre-Core Turbine Overspeed (Test #174)," of the U.S. EPR FSAR states that the test should verify that the turbine trips withing the design limits; however, the acceptance criteria does not reference a section in the FSAR to provide the design requirements. The staff requests that AREVA revise Test #174 to include a reference to the applicable section in the FSAR.

14.02-84

Section 14.2.12.14.1, "Initial Fuel Load (Test #179)," of the U.S. EPR FSAR gives prerequisites to be completed prior to fuel load, however, all of the prerequisites for fuel loading stated in Regulatory Guide (RG) 1.68, Appendix C.2.a are not listed. In addition, Section 14.2.12.15.1, "Critical Boron Concentration: All Rods Out (Test #190)," gives prerequisites to be completed prior to initial criticality, however, all of the prerequisites for initial criticality stated in RG 1.68, Appendix A.3 and Appendix C.3 are not listed. The staff requests that AREVA revise Tests #179 and #190 to include all prerequisites listed in RG 1.68, Appendix A and C, as appropriate.

14.02-85

Section 14.2.12.14.4, "Post-Core RCS Temperature Cross Calibration (Test #182)," and 14.2.12.14.5, "Post-Core Reactor Coolant System Flow Baseline (Test #183)," seem to be identical tests. Test #182 does not discuss temperature instruments or data, however, both tests discuss the flow of the RCS system. The staff requests that

AREVA review the objectives of Test #182 and #183, verify that the tests are appropriate for the stated objectives, and revise them accordingly.

14.02-86

Section 14.2.12.14.9, "Post-Core Reactor Coolant System Leak Rate Measurement (Test #187," of the U.S. EPR FSAR states that the test should verify that leakage is withint the limits described in the Technical Specification; however, the acceptance criteria does not reference a section in the FSAR or the specific Technical Specification that provides the requisite acceptance criteria. The staff requests that AREVA revise Test #187 to include a reference to the applicable section in the FSAR and the specific Technical Specification, accordingly.

14.02-87

In RAI 14.02-26, the staff requested that AREVA revise test abstract 178 to ensure that all pertinent aspects of RG 1.68.3 are addressed in the test. AREVA's response revised test abstract 178 to include the provisions of RG 1.68.3 position C.2; however, the revision did not address the remainder of the regulatory positions in RG 1.68.3. Therefore, the NRC staff requests that AREVA revise test abstract 178 to address all of the applicable regulatory positions in RG 1.68.3.

14.02-88

IN RAI 14.02-49, the staff requested that AREVA verify that all aspects of power ascension testing listed in Appendix A.5 to RG 1.68 are addressed in the test abstracts listed in Section 14.2.12.16 of the U.S. EPR FSAR, and revise the applicable test abstracts, accordingly. In response to the staff's request, AREVA revised Test #195, Test #196, Test #198, Test #211, and Test #219 to address the guidance in Regulatory Guide 1.68, Appendix A.5; however, only the criteria in RG 1.68, Appendix A.5.I was addressed. Therefore, the staff requests that AREVA revise the applicable test abstracts to include, where appropriate, the types of performance demonstrations, measurements, and tests listed in RG 1.68, Appendix A.5.

14.02-89

Applicants for standard plant design approval must provide plans for preoperational testing and initial operations in accordance with 10 CFR 50.34(b) (6) (iii) requirements. The staff reviewed Tier 2 FSAR Section 14.2.12.12.1, “Leak Detection Systems (Test #137),” Section 14.2.12.14.9, “Post-Core Reactor Coolant System Leak Rate Measurement (Test #187),” and Section 14.2.12.14.11, “Leak Detection Systems (Test #189).” However, the staff was not able to find the sensitivity and response time of the leak detection systems being included in the above tests. The applicant is request to identify the tests to demonstrate the sensitivity and response time of the leak detection systems.

14.02-90

Initial Plant Test # 188, “Post-Core Incore Instrumentation,” includes testing of the core exit thermocouples; however, no acceptance criterion is given to confirm functionality of the core exit thermocouples. The core exit thermocouples are part of the reactor instrumentation required under 10 CFR 50.34 (f) (2) (viii).

Either discuss the reason for not including an acceptance criterion on core exit thermocouple functionality in Initial Plant Test # 188, or add an acceptance criterion.

14.02-91

The FSAR Tier 1 Section 2.2.1 ITAAC 7.2 requires a four-pump coastdown test to verify compliance against design coastdown flow given in the accompanying Table 2.2.1-4. The staff notes that although Initial Plant Test # 183 “Post-Core Reactor Coolant System Flow Baseline” described in FSAR Tier 2 Section 14.2 includes flow coastdown measurements, there is no criterion on four-pump flow coastdown. Provide a reference or a justification for not including four-pump coastdown as a criterion in Initial Plant Test # 183 or add the criterion.