ArevaEPRDCPEm Resource

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Sent: Wednesday, January 14, 2009 9:15 AM
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Subject: Draft - U.S. EPR Design Certification Application RAI No. 176 (1883), FSAR Ch. 14
Attachments: Draft RAI_176_CQVP_1883.doc

Attached please find draft RAI No. 176 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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Request for Additional Information No. 176 (1883), Revision 0

1/14/2009

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: 14.2

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

14.02-92

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. Tier 2 FSAR Section 14.2.12.5.5 (Test #046) describes the initial test program for the CCWS. The results of the CCWS test program are considered to be acceptable if the CCWS performs as described in Tier 2 FSAR Section 9.2.2. However, as noted in RAI 9.2.2-01 through -28, the design bases for the CCWS are not adequately described in Tier 2 FSAR Section 9.2.2. Consequently, until the CCWS design basis is adequately described, the acceptance criteria for the CCWS test program can not be established. Therefore, please provide the requisite information in Tier 2 FSAR Section 9.2.2 to adequately describe the CCWS design basis so that the acceptance criteria for the CCWS initial test program can be adequately established.

14.02-93

Final Safety Analysis Report (FSAR) Tier 2 Section 14.2 Test 46 provides the component cooling water system (CCWS) initial test. In this regard, the staff's review of test 46 found the following discrepancies that require resolution by the applicant:

a. FSAR Tier 1 Section 2.7.1 includes the fuel pool cooling system (FPCS) as one of the safety-related functions of the CCWS. Accordingly, the descriptions of FSAR Tier 2 Section 9.2.2.3 and Section 9.2.2.6 for the CCWS response to a safety injection signal do not mention automatic isolation of the FPCS heat exchangers. However, FSAR Tier 2 Section 14.2 CCWS Initial Test 46 Step 3.4a indicates that the FPCS heat exchangers are isolated on a safety injection signal. Please address this discrepancy and update the FSAR accordingly.

b. Initial Test 46 step 3.5 states “Verify the non-safety-related headers and RCP headers are isolated on a surge tank low-low level signal.” However, FSAR Tier 2 Section 9.2.2 uses different surge tank level terminology with automatic control actions that correspond to each (i.e. MIN1, MIN2, MIN3, MIN4). Clarify in the FSAR that low-low surge tank level corresponds to MIN3. Clarify in the FSAR that if the MIN3 set point automatically closes switchover valves that isolates common header supplied by the associated CCWS safety train and that only the non-safety loads will be isolated since the common header includes safety loads and non-safety loads (e.g. reactor coolant pumps (RCP) thermal barrier cooling, fuel pool

cooling, safety chilled water etc.). Step 3.5 should be revised to be consistent with CCWS system terminology (for example, “low-low” or “MIN3” and “non-safety headers” or “common headers”).

c. Initial Test 46 step 3.6 states “Verify a low CCW pump differential pressure signal starts the idle pump in each division.” Since each U.S EPR safety related (SR) CCWS train contains only a single pump, please clarify the intent of this step and update the FSAR accordingly.

d. The automatic common header switchover function and the partial switchover function are not being tested in Initial Test 46. Please revise Initial Test 46 to include the testing of the automatic switchover function and the partial switchover function of the common headers in response to the various control signals or justify the exclusion of such testing.

e. FSAR Tier 2 Section 16 Technical Specification 3.7.7 Note A.1 discussed the switching of the RCP thermal barrier coolers normally supplied by one common header to the other common header. Testing of this feature is not included in Initial Test 46. Please revise Initial Test 46 to include the switching of the RCP thermal barrier coolers normally supplied by one common header to the other common header or justify its exclusion.

f. Please revise Initial Test 46 to ensure adequate flow rates from the fire protection water supply to the CCWS surge tanks, or justify the exclusion of such testing.

14.02-94

Final Safety Analysis Report (FSAR) Tier 2 Section 14.2.12.5.8 describes initial test for the UHS (Test #49). The NRC staff identified the following issues with test abstract #49:

1. Section 14.2.12.5.8.4.1, “Data Required,” includes “UHS makeup, blowdown air flowrates.” Blowdown air flowrates are not described in the FSAR. Please clarify what is meant by blowdown air flowrates.

2. The following design features and functions identified in Section 9.2.5 of the EPR FSAR are not included in test abstract #49. Please revise the abstract to include the following tests or justify their exclusion:

a. Confirmation that “normal and emergency” makeup flowrate meets design flow
b. Confirmation that chemical injection meets design flow
c. Confirmation that cooling tower fan performance at various speeds (including the reverse direction for cold weather deicing purposes) is satisfactory
d. Confirmation that the cooling tower flow bypass functions properly (also for cold weather protection)