ArevaEPRDCPEm Resource

From: Tesfaye, Getachew
Sent: Monday, November 16, 2009 7:36 AM
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Cc: Tomon, John; Crane, Samantha; Peralta, Juan; Miernicki, Michael; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 313 (3807), FSAR Ch. 14
Attachments: RAI_313_CQVP_3807.doc

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on October 21, 2009, and discussed with your staff on November 10, 2009. No changes were made to the draft RAI as a result of that discussion. 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,
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Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 954

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11/16/2009

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: Section 14.02

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

14.02-127

In AREVA's response to RAI #150 (ML091350078) question 12.03-12.04-4, the applicant stated the following about the Aeroball Measurement System (AMS):

"During commissioning, two ball stacks will be activated so that they reach saturation. Their activity will then be measured to establish time dependence and decay constants of the material components."

Test abstracts #127 (preoperational testing of the AMS), #206, #207 and #208 (Power Ascension testing of AMS) do not include this activation process of the AMS ball stacks as part of the test methods or acceptance criteria. Therefore, the NRC staff requests that the applicant identify which test abstract(s) of the Initial Test Program (ITP) will include the saturation activation of the AMS ball stacks as part of the test abstract.

14.02-128

The NRC staff requests that the applicant to revise U.S. EPR FSAR Section 14.2.12.7.13, "Secondary Sampling System (Test #071)," as follows:

a. Revise prerequisite item 2.3 to state: Calibrating gases and solutions are available for radioactive and non-radioactive analyses as referenced in table 9.3.2-2 of the U.S. EPR FSAR.

b. Revise the prerequisite section to include an item that requires that all portions of the sampling system be flushed with de-ionized water to ensure that residues of chemical agents used during post-construction cleaning phases have been flushed out.

c. The acceptance criteria section of test abstract #071 does not define acceptable criteria commensurate with process measurements listed in FSAR section 9.3.2. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Section 9.3.2 accordingly.

14.02-129

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.7.14, "Steam Generator Blowdown Demineralizing System (Test #072)," as follows:

a. Revise prerequisite item 2.3 to state: Calibrating gases and solutions are available for radioactive and non-radioactive analyses as referenced in table 9.3.2-2 of the U.S. EPR FSAR.

b. Revise the prerequisite section to include an item that ensures the Steam Generator Blowdown System's demineralizers and filters have been loaded with and verified to contain the proper types and amounts of ion exchange resins and filter media.

c. Revise acceptance criteria item 5.1 to state "The SGB demineralizing system meets design requirements (refer to section 10.4.8, 11.5.4.3 and 11.2)".

14.02-130

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.8.18, "Plant Laboratory Equipment (Test #090)," as follows:

a. Revise prerequisite item 2.5 to state: The laboratory equipment area radiological controls (such as postings, shielding, radioactive work permits, operation of ventilated hoods, interim storage of incoming and archived radioactive samples, and the availability of radwaste containers as interim means to store/hold within the laboratory radioactive wastes) have been implemented or are capable of being implemented.

b. Revise prerequisite section to include an item that confirms the availability of properradioactive standards and check sources. This prerequisite should state: Airborne and liquid radioactivity monitoring and sampling equipment, portable radiation survey equipment and all radio-analytical equipment installed in the laboratory are calibrated in accordance with RG 1.21 and RG 4.15.

c. The acceptance criteria section of test abstract #090 does not specify the operational programs and regulatory requirements identified in FSAR Sections 11.5 and 13.4 in analyzing and reporting sample results in demonstrating compliance with NRC regulations. The NRC staff requests that the applicant revise the acceptance criteria of test abstract #090 to include FSAR Sections 11.5 and 13.4.

14.02-131

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.9.2, "Sampling Activity Monitoring System (Test #092)," as follows:

a. Revise prerequisite item 2.5 to state: Calibration check sources are available~~.~~ in appropriate forms (gaseous, solutions or plated sources) for the analyses referenced in table 11.5-1 of the U.S. EPR FSAR.

b. Revise test method item 3.4 to state: Using radioactive calibration check sources, initiate a high radiation signal to the appropriate radiation monitors to verify that control actuations meet design requirements.

c. Revise test method item 3.6 to state: Using radioactive calibration check sources, initiate a high radiation signal to the radiation monitors to verify that alarm actuations function as designed.

d. The acceptance criteria section of test abstract #092 does not define acceptable criteria commensurate with process measurements listed in FSAR section 11.5. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Section 11.5 accordingly.

14.02-132

The NRC staff noted that the test method section of U.S. EPR FSAR Section 14.2.12.9.3, "Solid Waste Storage System (Test #093)," does not address testing all of the design features of the system, as described in FSAR Section 11.4.2.3.1. The NRC staff requests that the applicant revise the test methods section of test abstract #093 to include testing of all of the components described in U.S. EPR FSAR Section 11.4.2.3.1. Additionally, the staff requests that the applicant include a test method item that verifies the design features of supporting systems (i.e. process ventilation, drainage and sampling systems).

14.02-133

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.9.4, "Radioactive Concentrates Processing System (Test #094)," as follows:

a. The NRC staff noted that the test method section does not address testing all of the design features of the system, as described in FSAR Section 11.4.2.3.2. The NRC staff requests that the applicant revise the test methods section of test abstract #094 to include testing of all of the components described in U.S. EPR FSAR Section 11.4.2.3.2. Additionally, the staff requests that the applicant include a test method item that verifies the design features of supporting systems (i.e. process ventilation, drainage and sampling systems).

b. Revise test method item 3.1 to state: Using radioactive calibration check sources, initiate interlock signals from interfacing equipment and observe radioactive concentrates processing system response, including observation of alarms.

c. The acceptance criteria section of test abstract #094 does not define acceptable criteria commensurate with process and effluent measurements listed in FSAR Sections 11.5, 11.2.2 and 11.4. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Sections 11.5, 11.2.2 and 11.4 accordingly.

14.02-134

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.9.5, "Liquid Waste Processing System (Test #095)," as follows:

a. Revise the prerequisite section to include an item that ensures the Liquid Waste Processing System's demineralizers and ultra filtration system have been loaded with and verified to contain the proper types and amounts of ion exchange resins and filtration media.

b. The NRC staff noted that the test method section does not address testing all of the design features of the system, as described in FSAR Section 11.2.2.4.2. The NRC staff requests that the applicant revise the test methods section of test abstract #095 to include testing of all of the components described in U.S. EPR FSAR Section 11.2.2.4.2.

c. Revise test method item 3.7 to state: Using radioactive calibration check sources, initiate a high radiation signal to the liquid waste processing system discharge radiation monitor and demonstrate that discharge isolation features and other system controls function as designed.

d. Revise test method item 3.9 to state: Using radioactive calibration check sources, initiate a high radiation signal to the liquid waste processing system discharge radiation monitor and verify response.

e. The acceptance criteria section of test abstract #095 does not define acceptable criteria commensurate with process measurements listed in FSAR Sections 11.2 and 11.5. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Sections 11.2 and 11.5 accordingly.

14.02-135

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.9.9, "Gaseous Waste Processing System (Test #099)," as follows:

a. Revise the prerequisite section to include an item that ensures the Gaseous Waste Processing System's charcoal beds and gel driers have been loaded with and verified to contain the proper types and amounts of charcoal and dessicant.

b. Revise test method item 3.3 to state: Using radioactive calibration check sources, initiate a high radiation signal to the GWPS discharge radiation monitor.

c. Revise test method item 3.5 to state: Using radioactive calibration check sources, initiate a high radiation signal to the GWPS discharge radiation monitor and verify alarm actuation as designed.

d. Revise test method item 3.9 to state: Demonstrate the operation of the gas analyzers~~.~~ to detect O_2 and H_2 in concentrations ranges as specified by plant technical specification.

e. The acceptance criteria section of test abstract #099 does not define acceptable criteria commensurate with process measurements listed in FSAR Sections 11.5 and 11.3. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Sections 11.5 and 11.3.

14.02-136

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.11.21, "Process and Effluent Radiological Monitoring System (Test #144)," as follows:

a. Revise prerequisite item 2.5 to state: Calibration check sources are available~~.~~ in appropriate forms (gaseous, solutions or plated sources) for the analyses referenced in table 11.5-1 of the U.S. EPR FSAR.

b. Revise test method item 3.4 to state: Using radioactive calibration check sources, initiate a high radiation signal to the appropriate radiation monitors to verify as designed control actuations.

c. The acceptance criteria section of test abstract #144 does not define acceptable criteria commensurate with process measurements listed in FSAR Section 11.5. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Section 11.5 accordingly.

14.02-137

The acceptance criteria section of U.S. EPR FSAR section 14.2.12.12.9, 'Post-Accident Monitoring Instrumentation (Test #155)", does not define acceptable criteria commensurate with process measurements listed in FSAR Section 9.3.2. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Section 9.3.2 accordingly.

14.02-138

US EPR FSAR section 14.2.12.13.12 "Pre-Core Primary System Leak Rate Measurement (Test #172)," acceptance criteria item 5.1 identifies Section 16.3.4.12 as the reference for RCS Operational Leakage; however, Section 16.3.4.14 describes the bases for the RCS leakage detection instrumentation. The NRC staff requests that the applicant revise the acceptance criteria of test abstract #172 to identify TS 16.3.4.14 as an applicable criterion, or refer to the appropriate test abstract for the associated instrumentation that would address the operational requirements for the RCS Leakage Detection Instrumentation.

14.02-139

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.12.5, “Sampling Primary and Secondary Systems (Test #204),” as follows:

a. Revise prerequisite item 2.2 to state: Required sampling systems are functional~~.~~ and analysis instrumentation are calibrated using calibration gases and solutions as referenced in the radioactive and non-radioactive analyses of table 9.3.2-2 of the U.S. EPR FSAR.

b. The acceptance criteria section of test abstract #204 does not define acceptable criteria commensurate with process measurements listed in FSAR Section 9.3.2. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Section 9.3.2 accordingly.

14.02-140

The NRC staff requests that the applicant revise U.S. EPR FSAR Section 14.2.12.18.6, “Failed Fuel Detection (Test #205),” as follows:

a. Revise objective item 1.1.4 to state: Radioisotopic concentration data of the radioactive elements (e.g. cesium, iodine, strontium, barium, cerium and noble gases).

b. Revise prerequisite section to include an item that states “Calibrating gases and solutions are available for radioactive and non-radioactive analyses referenced in table 9.3.2-2 of the U.S. EPR FSAR.”

c. The acceptance criteria section of test abstract #205 does not define acceptable criteria commensurate with process measurements listed in FSAR Section 9.3.2. Therefore, the NRC staff requests that the applicant identify where such acceptance criteria is located in the FSAR, or otherwise revise FSAR Section 9.3.2 accordingly.

14.02-141

The NRC staff requests that the applicant revise the acceptance criteria item 5.1 of U.S. EPR FSAR Section 14.2.12.20.1, “Liquid Waste Storage and Processing Systems (Test #215),” to state “The LWPS processes radioactive effluents as designed (refer to Sections 11.2, 11.5 and 13.4).”

14.02-142

The NRC staff requests that the applicant revise the acceptance criteria item 5.1 of U.S. EPR FSAR Section 14.2.12.20.2, “Gaseous Waste Processing Systems (Test #215),” to state: The GWPS processes radioactive and potentially flammable gases effluent as designed (refer to Sections 11.2, 11.5 and 13.4).