

ArevaEPRDCPEm Resource

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Sent: Thursday, July 08, 2010 6:02 PM
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Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No. 390, FSAR Ch. 9, Supplement 2, Question 09.01.02-39
Attachments: RAI 390 Supplement 2 Response US EPR DC - DRAFT.pdf

Getachew,

On June 25, 2010, AREVA NP provided in RAI 390 Supplement 1a response date for question 09.01.02-39 of August 3, 2010. To support NRC review, a draft response for this question is provided. Please let me know if the staff has any questions or if this response can be sent as final.

Thanks,

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Response to

Request for Additional Information No. 390, Supplement 2

4/27/2010

U.S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 09.01.02 - New and Spent Fuel Storage

SRP Section: 09.02.02 - Reactor Auxiliary Cooling Water Systems

**SRP Section: 09.05.04 - Emergency Diesel Engine Fuel Oil Storage and Transfer
System**

Application Section: 9.5.4

QUESTIONS for Balance of Plant Branch 1 (SBPA)

QUESTIONS for Health Physics Branch (CHPB)

DRAFT

Question 09.01.02-39:

The following items appear to be errors in the FSAR:

- a. In FSAR Section 9.1.2.1, Design Basis, the statement "Gaseous radioactivity above the SFP is maintained below the limits as defined in 10 CFR 20, Appendix b, table 1, column 1," incorrectly references column 1. Column 1 refers to oral ingestion ALI, while Column 3 lists the applicable DAC for each radionuclide. Please correct the column number or justify an alternative.
- b. The last sentence in FSAR Section 12.3.4.2.1, Normal Operations, refers to Table 12.3-2, U.S. EPR Radiation Zone Designation, as including the normal operations airborne radioactivity monitoring instrumentation. This table reference is incorrect, please replace with correct reference.
- c. FSAR Table 12.3-2, Radiation Monitor Detector Parameters, lists the radioactive waste processing building monitors under the heading "post accident monitoring." Please confirm whether this is correct, or move the radwaste building monitors to another part of the table.

Response to Question 09.01.02-39:

- a) The referenced sentence in U.S. EPR FSAR Tier 2, Section 9.1.2.1 will be revised to read as follows:

"Gaseous radioactivity above the SFP is maintained below the limits as defined in 10 CFR 20, Appendix B, Table 1, Column 3."

- b) The referenced sentence in U.S. EPR FSAR Tier 2, Section 12.3.4.2.1 has been revised to read as follows:

"Table 12.3-4—Airborne Radioactivity Detector Parameters includes the normal operations airborne radioactivity monitoring instrumentation."

- c) Question 09.01.02-39 incorrectly refers to U.S. EPR FSAR Tier 2, Table 12.3-2—Radiation Monitor Detector Parameters as the table number and title combination that lists the radioactive waste processing building monitors under the heading "post accident monitoring." The correct table number and title combination is U.S. EPR FSAR Tier 2, Table 12.3-3—Radiation Monitor Detector Parameters.

The table has been revised to eliminate the subdivision. The detector parameters for the radiation monitors in the Reactor Building and Radioactive Waste Processing Building (previously under Post-Accident Monitoring) are now included with the remainder of the monitors.

FSAR Impact:

U.S. EPR FSAR, Tier 2, Section 9.1.2.1 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

DRAFT

Other important non-safety related design criteria for the NFSF and SFSF are also included, as discussed below:

- In accordance with the requirements of 10 CFR 20.1101(b), engineering controls are provided to keep radiation doses in the NFSF and SFSF to as low as reasonably achievable (ALARA) levels. Refer to Section 12.1 for further ALARA design details. A discussion of how the design meets the requirements of RG 8.8, section C.2, with regard to provisions for decontamination is provided in Section 12.3.1.
- Gaseous radioactivity above the SFP is maintained below the limits as defined in 10 CFR 20, Appendix B, Table 1, Column 3†. ← 09.01.02-39
- A leak chase and collection system is provided for the detection of leaks in the spent fuel pool liner plate.

9.1.2.2 Facilities Description

9.1.2.2.1 New Fuel Storage

~~The NFSF is~~ The Fuel Building is enclosed by a hardened concrete protection shield, which prevents damage to the building from external hazards. The Fuel Building interior structures, systems, and components are further protected from impact forces of an aircraft hazard by structural decoupling from the outer hardened walls above the basemat elevation.

~~The NFSF is approximately 18 feet deep, dry, unlined and~~ enclosed by the reinforced concrete structure of the Fuel Building. New fuel storage racks are located in the new fuel dry storage ~~area~~room inside the Fuel Building. These racks are designed to provide ~~vertical~~ storage of new fuel assemblies, either with or without rod cluster control assemblies. ~~The design of the new fuel storage racks are the responsibility of the COL applicant. A COL applicant that references the U.S. EPR design certification will describe the new fuel storage racks, including a description of confirmatory structural dynamic and stress analyses. The racks must be shown to meet Seismic Category I requirements.~~

~~The new fuel storage rack location is shown in Figure 9.1.2-1—New Fuel and Spent Fuel Storage Rack Representative Layout. Typical New Fuel Rack Array. These representative new fuel storage racks provide support for the fuel assemblies and incorporate guide funnels at the top to facilitate insertion of the new fuel assemblies. Figure 9.1.2-9—Typical New and Spent Fuel Storage Rack Cross Sections, provides a typical sketch of the new and spent fuel storage racks. Fuel assemblies are handled using the auxiliary crane equipped with the new fuel handling tool, as detailed further in Section 9.1.4. Two rack modules (one 7x8 module and one 8x8 module) with a total capacity of 120 fuel assemblies are provided in the NFSF for receiving and storing new fuel in a dry environment. Figure 9.1.2-1 provides a sketch of a typical new fuel rack array with the dry new fuel storage rack layout as shown in Figure 9.1.2-2. The new~~