

## ArevaEPRDCPEm Resource

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**From:** Tesfaye, Getachew  
**Sent:** Thursday, December 08, 2011 11:03 AM  
**To:** 'usepr@areva.com'  
**Cc:** Dehmel, Jean-Claude; Schaaf, Robert; Clark, Phyllis; Segala, John; ArevaEPRDCPEm Resource  
**Subject:** U.S. EPR Design Certification Application RAI No. 529 (6178), FSAR Ch. 12  
**Attachments:** RAI\_529\_CHPB\_6178.doc

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on November 25, 2011, and on December 7, 2011, 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, excluding the time period of **December 24, 2011 thru January 2, 2012, to account for the holiday season** as discussed with AREVA NP Inc. For any RAIs that cannot be answered **within 40 days**, it is expected that a date for receipt of this information will be provided to the staff within the 40-day period so that the staff can assess how this information will impact the published schedule.

Thanks,  
Getachew Tesfaye  
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**Hearing Identifier:** AREVA\_EPR\_DC\_RAIs  
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Request for Additional Information No. 529(6178), Revision 3

12/08/2011

U. S. EPR Standard Design Certification  
AREVA NP Inc.

Docket No. 52-020

SRP Section: 12.03-12.04 - Radiation Protection Design Features

Application Section: 12.3 with system interfaces in Sections 11.5 and 14.2.12

QUESTIONS for Health Physics Branch (CHPB)

12.03-12.04-28

OPEN ITEM

Supplemental question to responses on RAI 273, Questions No. 11.05-2, 11.05-5, 11.05-7, 11.05-8, 11.05-9, and 11.05-10 and RAI 405, Question 11.05-24. Based on a review of Revision 3 of the U.S. EPR FSAR and the FSAR mark up provided in the response to RAI 273, the staff has identified the following items to be addressed and resolved in the stated FSAR sections that are related to Chapter 12, radiation protection:

- a. FSAR Tier 2, Table 12.3-3 lists the high range activity monitors inside containment as having the following accident function: "Signals Reactor Building air filtration isolation and RHR valve closure." This information is not consistent with FSAR Section 12.3.4.1.3. Revise FSAR Table 12.3.4.1.3 and/or Table 12.3-3 so that they are consistent about what the containment high range monitors' accident functions are.
- b. FSAR Tier 2, Table 12.3-4 refers the reader to R-10 when talking about airborne monitors located inside the reactor building. However, it is not clear how R-10 can be located both inside the exhaust containment ventilation and on the refueling machine (used during spent fuel movement) as stated in FSAR Table 12.3-4. Please revise or correct this reference.
- c. FSAR Tier 2, Table 12.3-4 refers the reader to R-19 when speaking about aerosol and iodine monitors located inside the Nuclear Auxiliary Building. However, FSAR Table 11.5-1 does not list R-19 as an aerosol or an iodine monitor, only as a noble gas monitor. Please revise FSAR Table 12.3-4 and/or Table 11.5-1 as necessary so that they are consistent.
- d. Regarding FSAR Tier 2, Section 14.2.12.11.19 (Radiation Monitoring System Test No 143) under Test Method, Step 3.1 refers to Table 11.5-1. However check sources should be used to verify operation of all area radiation monitors also, not just the process monitors located in FSAR Table 11.5-1. Therefore revise the wording to also refer to Table 12.3-3 in addition to Table 11.5-1.
- e. Regarding FSAR Tier 2, Section 14.2.12.11.19 (RMS Test No 143) under Acceptance Criteria, Step 5.1 states that the Main Control Room air intake duct activity measurement signal is input to the protection system. However, FSAR Section 11.5.3.1.11 that discusses this monitor does not mention that it provides

input to the protection system. Please revise the FSAR as necessary to ensure consistency.

- f. Regarding FSAR Tier 2, Section 14.2.12.11.19 (RMS Test No 143) under Acceptance Criteria, Step 5.2 refers the reader to “Monitors R-55 through 5-58”. Monitors R-55 through R-58 are the main steam line monitors, However, Step 5.2 is talking about the containment high range activity monitors which are listed in Table 12.3-3. Please revise step 5.2 so that it references FSAR Table 12.3-3 instead of Chapter 11 (and monitors R-55 through 5-58).
- g. In FSAR Tier 2, Section 14.2.12.11.19, RMS Test No 143 acceptance criteria 5.1 and 5.2 state that the monitors will have to provide input to the protection system. However, the acceptance criteria for these monitors should be that the radiation signals to the monitors result in control actuations that meet design requirements. Please revise these acceptance criteria accordingly.
- h. In the RAI 273 Supplement 16 response the FSAR mark-up shows FSAR Tier 2, Section 6.2.4.2.2 has been changed to refer the reader to Section 12.3 and Table 12.3-4 for information on area radiation monitors that provide a containment isolation signal on high radiation. The reference to FSAR Table 12.3-4 is incorrect; this should say Table 12.3-3.
- i. In the RAI 273 Supplement 16 response, FSAR Tier 1, Table 2.6.4-3 was revised so that it read “Upon receipt of a containment isolation signal in the reactor building, the FB is isolated from the NABVS...” However, FSAR Tier 2, Section 9.4.2.2.3 says that “in the event of a LOCA, the containment isolation signal or a radiation signal in the RB initiates isolation of the FB from NABVS supply and exhaust duct to limit leakage to the FB.” Please revise Tier 1 and Tier 2 so that they are consistent with respect to what triggers isolation of the FB from NABVS.