

## ArevaEPRDCPEm Resource

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**From:** Tesfaye, Getachew  
**Sent:** Tuesday, February 01, 2011 4:14 PM  
**To:** 'usepr@areva.com'  
**Cc:** Bernal, Sara; Roach, Edward; Clark, Phyllis; Colaccino, Joseph; ArevaEPRDCPEm Resource  
**Subject:** U.S. EPR Design Certification Application RAI No. 470 (5397), FSAR Ch. 12  
**Attachments:** RAI\_470\_CHPB\_5397.doc

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on January 25, 2011, and on February 1, 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. 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  
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Request for Additional Information No. 470(5397), Revision 0

2/1/2011

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: 12.3-12.4 Radiation Protection Design Features

QUESTIONS for Health Physics Branch (CHPB)

12.03-12.04-27

Follow-up to RAI 424, Question 12.03-12.04-22

In the response to RAI 424, Question 12.03-12.04-22, it was stated that AREVA NP had implemented a design change to shield the seismic gap around the spent fuel transfer tube inside containment using a steel labyrinth. This is acceptable to the staff except for the following:

1. Provide more detail as to whether the steel plate will be permanent shielding, or whether it will be removable (for example, by being bolted to the wall instead of welded). Per the guidance of NUREG 0800 Section 12.3-12.4, all accessible portions of the spent fuel transfer tube are clearly marked with a sign stating that potentially lethal radiation fields are possible during fuel transfer. If the steel labyrinth plate described in the RAI response is removable shielding, it must also be explicitly marked as above. If other than permanent shielding is used, local audible and visible alarming radiation monitors must be installed to alert personnel if temporary fuel transfer tube shielding is removed during fuel transfer operations.
2. The revisions to FSAR Tier 2, Figures 12.3-2 and 12.3-9 provided in response to RAI 424, Question 12.3-12.4-22 are not labeled or explained in the FSAR mark-up. Revise the FSAR to include a description, or label the mark shown in the revised Figures 12.3-4 and 12.3-9, such that the reader can identify it as a labyrinth steel shield used to prevent streaming through the seismic gap during fuel transfer. If the shield will be removable, include that information in the label or in the description.
3. The labyrinth shield described in the response to RAI 424, Question 12.03-12.04-22, together with the labyrinth shielding in the containment annulus, provide shielding for accessible areas around the spent fuel transfer tube during refueling. According to RAI response 43, Question 14.3.8-1, Supplement 1, AREVA revised Tier 1 to include radiation barriers which separate high radiation areas and frequently accessed areas due to their safety significance. Because

the spent fuel transfer tube labyrinth shielding is used to prevent accessible Very High Radiation Areas from occurring during spent fuel transfer they are also safety-related. Accordingly, revise FSAR Tier 1 Table 2.1.1-3, "Radiation Barriers," to include verification of the two labyrinth shielding wall thicknesses and configurations. Also revise the wording in FSAR Tier 1 Item 3.3 of Table 2.1.1-4, "Nuclear Island ITAAC," and bullet 3.3 in Tier 1 section 3.0, "Key Design Features," so that it refers to safety significant radiation barriers for normal operation in addition to post-accident barriers.