

## ArevaEPRDCPEm Resource

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**From:** Tesfaye, Getachew  
**Sent:** Wednesday, October 27, 2010 12:16 PM  
**To:** 'usepr@areva.com'  
**Cc:** Curran, Gordon; Segala, John; Lee, Samuel; Hearn, Peter; Colaccino, Joseph; ArevaEPRDCPEm Resource  
**Subject:** Draft - U.S. EPR Design Certification Application RAI No. 454(5108), FSAR Ch. 9  
**Attachments:** Draft RAI\_454\_SBPA\_5108.doc

Attached please find draft RAI No. 454 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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Draft

Request for Additional Information No. 454(5108), Revision 0

10/27/2010

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

Docket No. 52-020

SRP Section: 09.01.04 - Light Load Handling System (Related to Refueling)  
Application Section: 9.1.4

QUESTIONS for Balance of Plant Branch 1 (AP1000/EPR Projects) (SBPA)

09.01.04-19

For fuel transfer into and out of the fuel storage facility, some current operating reactors rely on the heavy load handling overhead crane. In most plants, the design is consistent with RG 1.13, specifying that the crane be restricted from travel over the spent fuel pool. However, some plants have the new fuel elevator located in the spent fuel pool and the overhead crane does move over a portion of the pool, similar to EPR design. In these cases, plants load fuel with auxiliary hoists on overhead cranes provided spent fuel is not stored nearby and there is reasonable assurance that a fuel assembly drop would not cause a loss of pool water that would damage or uncover fuel.

As a result of communications with the applicant, it became clear to the staff that the FSAR does not adequately describe the process that the EPR intends to use for moving new fuel above deck to the new fuel elevator and what provisions are provided to prohibit movement over spent fuel. During the call, AREVA confirmed that the fuel building (FB) auxiliary crane is primarily used for new fuel handling.

However, the details of the handling of fuel by the use of the FB aux crane are not included in Section 9.1.4 or 9.1.5 of the FSAR.

Therefore, the staff has the following questions and clarifications:

- a. Clarify whether the FB aux crane (20 ton main hoist) contains multiple hoists that are used to move fuel. If so, confirm the capacity of the other hoists and whether all hoists on the FB aux crane are single-failure proof.
- b. Describe how the FB Aux Hoist will be used to handle new fuel from fuel containers to fuel elevator. (RAI 9.1.4-4 response seems to include this, but the FSAR does not.)
- c. Explain the safe/normal load path of new fuel and describe any provisions that are included to ensure load path is followed. In addition, describe the interlocks or other methods provided to prohibit new fuel and other loads from inadvertently traveling over spent fuel.
- d. Confirm whether or not a fuel drop has been analyzed for a drop height above deck into the SFP to verify that the drop of a fuel assembly will not drain the SFP to uncover fuel or justify other means to prevent this. If not, please provide justification.

- e. Provide dimensions/clearances between the new fuel elevator (NFE) in the spent fuel pool and the spent fuel assemblies/rack.
- f. Since the handling tools are not described in the FSAR, describe the handling tools/devices used to move new fuel to the NFE with the appropriate hoists. In addition, provide handling tool description in the FSAR for movement of the new and spent fuel (long handling tool, short handling tool, mast) above deck, in SFP, and in reactor. Describe, in the FSAR, these handling tools and their functions for handling fuel and the tests and inspections to perform for these handling tools.

In addition to the above, the staff has general questions to clarify where content is found FSAR:

- g. Provide in the FSAR the location discussing types of crane controls (Pendant, remote control, manual, etc..) for the heavy and light load handling cranes (ANSI 57.1 Section 6.3.4.1.6)
- h. Section 9.1.5.2.3 indicates that, “[t]he FB auxiliary crane, located over the spent pool, is designed in accordance with ASME NOG-1...” This sentence seems to imply that this hoist is routinely used over spent fuel pool. Explain its usage over SFP.
- i. Confirm the hoist capacity is capable/sized for handling a fuel assembly and its handling tool.

The staff requests the applicant to provide additional information or clarification to address the above regarding the process for new fuel movement over the spent fuel pool, above the deck, and near new fuel elevator. In addition, adequate description is needed in the FSAR to clearly define all aspects of new fuel movement and what provisions/interlocks are included for travel over spent fuel pool.