

## **ArevaEPRDCPEm Resource**

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**Sent:** Thursday, January 19, 2012 10:12 PM  
**To:** 'usepr@areva.com'  
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**Subject:** Draft - U.S. EPR Design Certification Application RAI No. 539 (6259), FSAR Ch. 12  
**Attachments:** Draft RAI\_539\_CHPB\_6259.doc

Attached please find draft RAI No. 539 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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Request for Additional Information No. 539(6259), Revision 0

1/19/2012

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

QUESTIONS for Health Physics Branch (CHPB)

12.03-12.04-29

OPEN ITEM

Follow-up RAI 459, Question 12.3-12.4-25

- a) In the response to RAI 459 Question 12.3-12.4-25 the applicant described the changes in radiation zones between revision 0 and revision 1 of the FSAR and said that these changes were made in accordance with the revised minimum wall thicknesses appearing in the dimension boxes of the walls. However, in some cases the revised wall thicknesses were less than the previous (rev 0) wall thicknesses and the radiation zones also decreased (from a zone 5 to a zone 3 for example). Provide additional detail on why a reduction in minimum wall thicknesses would result in a lower radiation zone. This is the case for bullets 12, 22, 24, 28, 29, 30, 33, 34, 41, and 42 under item (d).

In the 14<sup>th</sup> bullet under item (d) the applicant states that the radiation zone designation in UFA15 096 was changed from zone 7 (red) to zone 4 (yellow) in accordance with the revised minimum wall thicknesses appearing in the dimension boxes of the walls. UFA15 096 is the access to transfer pit room in the fuel building. This room is also adjacent to the volume control tank room. During fuel transfer dose rates inside this room have been calculated by the staff (using FSAR revision 1 wall thicknesses) to reach 300 mrem/hr with the VCT contributing approximately 5 mrem/hr in addition to that. Provide additional detail on the basis for changing this room from a zone 7 to a zone 4, or revise the FSAR so that UFA15096 has the correct radiation zone shown.

- b) The Table 12.3-14 shown in the FSAR mark up in the response to Question 12.3-12.4-25 gives a dose rate limit of 5 rem/hr 1 ft from the side of an unshielded waste drum. However, there are no limits to the number of waste drums which may be stored. Therefore the administrative limit for one drum will not ensure that the radiation zone outside of the room will be met. Revise this table so that the administrative limit is on the total number of waste drums stored in the listed rooms, or placed on a location outside of the waste drum storage room.
- c) NUREG-0800 and RG 1.206 state that the source terms provided in section 12.2 should be described in the manner needed for input in the shield design

calculations, and therefore, be consistent with the criteria used in the Chapter 12 radiation zone maps. However, the Chapter 12 radiation zone maps have been adjusted, for some of these sources, to the administrative limits provided in Table 12.3-14. Compliance with the above guidance documents is not required, but applicants need to demonstrate how alternative methods used are acceptable. Some of the dose rate administrative limits provided in Table 12.3-14 are significantly lower than what they would be using the source terms provided in Section 12.2, and staff is concerned that some of the administrative limits may be difficult to achieve, and in achieving them, may have additional effects on the plant that may not have been accounted for in the FSAR. For example, staff believes that the only reasonable method of decreasing the dose rate from many of these components is to increase resin use, boric acid use (for reducing the dose rate to the evaporator), and waste generation rates. Yet, the applicant provides no change to the dose estimates for waste processing (Table 12.3-10), the 7.5 year drum storage capacity for class B and C waste described in section 11.4, or other FSAR changes that may result from meeting the administrative limits. Please, update the FSAR to include all modifications necessary to meet these administrative dose rate limits, or describe how these administrative limits will be met without making FSAR changes.

- d) Finally, Table 12.3-14 states that the dose rate at one foot from a reactor coolant pump will be administratively limited, however staff is unsure how this can be accomplished. Please, explain how the dose rate from a reactor coolant pump will be administratively limited.