

ArevaEPRDCPEm Resource

From: Snyder, Amy
Sent: Friday, February 08, 2013 9:43 AM
To: RYAN Tom (AREVA)
Cc: WILLIFORD Dennis (AREVA); Clark, Phyllis; McCoppin, Michael; Segala, John; Stutzcage, Edward; GORDON Darryl (AREVA); RITCHEY Calvin (AREVA)
Subject: REVISED --U.S. EPR Design Certification Application ADVANCED RAI No. 570 (6989), FSAR Ch.12
Attachments: Follow up to RAI 548 Supplement 1 Question 12.03-12.04-30.docx; REV ADVANCED RAI_570_RPAC_6989.doc; RAI 570, Question 12.03-12.04-32

Hi Ryan,

After the teleconference on February 4, 2013 on the advanced RAI 570, and after we sent you an email on February 5, 2013 (attached) stating that staff does not need to revise the RAI questions—The staff reflected on the February 4th teleconference discussion and felt that changes in the RAI were needed. The staff made substantive changes/ additional changes to the 1/18/13 advanced RAI beyond what was discussed based on the discussion during the February 4, 2013 teleconference.

Please see the attached REVISED Advanced RAI 570 (REV ADVANCED RAI 570 RPAC 6989.doc). Please note, I have also attached a tracked change version for everyone's convenience.

With these changes, the staff now feels that the RAI addresses everything it needs to address, regarding the doors in containment and 10 CFR 20.1601 and 20. 1602.

If you have any questions or need clarification regarding this REVISED advanced 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 REVISED advanced 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.

Thank You,
Amy

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Division of New Reactor Licensing
Office of New Reactors
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Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 4267

Mail Envelope Properties (Amy.Snyder@nrc.gov20130208094200)

Subject: REVISED --U.S. EPR Design Certification Application ADVANCED RAI No. 570 (6989), FSAR Ch.12
Sent Date: 2/8/2013 9:42:34 AM
Received Date: 2/8/2013 9:42:00 AM
From: Snyder, Amy
Created By: Amy.Snyder@nrc.gov

Recipients:

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Post Office:

Files	Size	Date & Time	
MESSAGE	1642	2/8/2013 9:42:00 AM	
Follow up to RAI 548 Supplement 1 Question 12.03-12.04-30.docx			23061
REV ADVANCED RAI_570_RPAC_6989.doc	38910		
RAI 570, Question 12.03-12.04-32	7113		

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

This is a follow up to the applicant's response to RAI 548, Supplement 1, Question 12.03-12.04-30.

10 CFR 20.1601 and 10 CFR 20.1602 require that appropriate controls are in place to control access to high and very high radiation areas. ~~In addition, these regulations require that the licensee establish the necessary controls in a way that does not prevent individuals from leaving a high or very high radiation area.~~

Based on the applicant's supplemental response to RAI 548 and information provided in clarification calls, staff has the following questions:

1. In response to question 4 of the supplemental questions to Question 12.03-12.04-30, the applicant stated, "The design of the locking mechanism for the large radiation protection doors will be such that the shear pin will engage after door closure and disengage prior to door opening such that damage to the shear pin will not occur." The applicant has since stated that the above statement does not only apply to the "large" radiation protection doors, but to all radiation protection doors in containment. Please include a similar statement to the above, removing the word "large," in FSAR Section 12.3.1.8.1. This information is necessary to ensure compliance with the access controls required by 10 CFR 20.1601 and 20.1602.

2. In the basis section of U.S. EPR Technical Specification 3.6.10, the applicant states that a differential pressure of 2.9 psid +20%, is assumed in the containment analysis. However, it is unclear at what pressure the shear pin is designed to break. For all radiation protection doors in containment (not only the doors listed in Technical Specification 3.6.10), please indicate at what pressure or force, the shear pins are designed to break. In addition, for all radiation protection doors in containment, please include a statement in FSAR Chapter 12 ensuring that a shear pin will not break with a person pulling or pushing on a door with a reasonable pulling or pushing force (without using extraordinary force, tools, equipments, etc). This information is necessary to ensure compliance with the access controls required by 10 CFR 20.1601 and 20.1602, and is a follow up to the response to question 5 of the supplemental questions to Question 12.03-12.04-30.

- ~~2—3. 10 CFR 20.1601 (d) requires that the licensee establish controls in a way that does not prevent individuals from leaving a high or very high radiation area. Therefore, a door to a high or very high radiation area must be designed in a way that would allow an individual inadvertently locked inside such an area, to egress from the area.~~

- a. U.S. EPR Technical Specification 3.6.10 states that the listed radiation protection doors in containment must begin to open with an opening torque of less than 500 ft-lbs. This test is preformed with the shear pin disengaged and is necessary to ensure that the doors have not developed excessive friction (freedom of movement), to ensure the doors can meet their safety-related function. The applicant has confirmed that this is the maximum allowable torque to open the doors. However, 10 CFR 20.1601 and 10 CFR 20.1602 require that controls be in place in a way that does not prevent individuals from leaving high and very

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high radiation areas. Staff is concerned that if an individual gets locked inside an area with a door that does not open until nearly 500 ft-lbs torque is applied, they may not be able to egress from an area unassisted. Please explain how an individual will egress from such an area. The information provided should be sufficient to ensure emergency egress can occur not only from the doors listed in the Technical Specifications, but from all radiation protection doors in containment. Any unique features being utilized that would assist someone in pushing open these doors should be listed in the FSAR.

If the applicant decides to alter Technical Specification 3.6.10 or develop a separate test from Technical Specification 3.6.10, the applicant must ensure that the doors are tested at a frequency sufficient to provide reasonable assurance that the doors will maintain their ability to adequately allow emergency egress. In addition, the applicant should ensure that all of the functions of the doors are considered in the tests and that specific functions of the doors are not defeated as the result of these tests (for example, a failed test should not allow propping open the radiation doors, because these doors are relied upon for shielding purposes).

b. FSAR Table 3.8-18 indicates that Doors 8 and 9 on the +5 ft elevation of containment are motor operated rolling doors without hinges and are considerably large. These doors provide access to areas with potentially significant dose rates (FSAR Figure 12.3-13 appears to list these areas as up to 500 Rad/hour). While staff realizes that dose rates will likely be considerably lower when these areas are being accessed, the potential exists for someone to be inadvertently locked inside one of these areas. Therefore, the applicant must provide information in the FSAR describing how someone would be able to egress from these areas if inadvertently locked inside. The applicant must include information in the FSAR describing how someone would egress from these areas if locked inside and the motor operation of the doors fail (such as during a power outage or motor failure).

c. FSAR Section 12.3.1.8 provides general statements regarding compliance with 10 CFR 20.1601 and 10 CFR 20.1602. However, there is nothing in FSAR Section 12.3.1.8, indicating that high and very high radiation areas (in general) are designed in a way that permits emergency egress (FSAR Section 12.3.1.8.1 discusses emergency egress from the radiation protection doors in containment, but this statement does not include emergency egress from the other doors in containment or egress from other high or very high radiation areas). Therefore, please update FSAR Section 12.3.1.8 to include a general statement indicating that emergency egress is possible from all accessible areas that fall within the requirements of 10 CFR 20.1601 and 10 CFR 20.1602.

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REVISED ADVANCED
Request for Additional Information 570

Issue Date: 2/8/2013

Application Title: U. S. EPR Standard Design Certification - Docket Number 52-020

Operating Company: AREVA NP Inc.

Docket No. 52-020

Review Section: 12.03-12.04 - Radiation Protection Design Features

Application Section:

QUESTIONS

12.03-12.04-32.

This is a follow up to the applicant's response to RAI 548, Supplement 1, Question 12.03-12.04-30.

10 CFR 20.1601 and 10 CFR 20.1602 require that appropriate controls are in place to control access to high and very high radiation areas.

Based on the applicant's supplemental response to RAI 548 and information provided in clarification calls, staff has the following questions:

1. In response to question 4 of the supplemental questions to Question 12.03-12.04-30, the applicant stated, "The design of the locking mechanism for the large radiation protection doors will be such that the shear pin will engage after door closure and disengage prior to door opening such that damage to the shear pin will not occur." The applicant has since stated that the above statement does not only apply to the "large" radiation protection doors, but to all radiation protection doors in containment. Please include a similar statement to the above, removing the word "large," in FSAR Section 12.3.1.8.1. This information is necessary to ensure compliance with the access controls required by 10 CFR 20.1601 and 20.1602.

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3. 10 CFR 20.1601 (d) requires that the licensee establish controls in a way that does not prevent individuals from leaving a high or very high radiation area. Therefore, a door to a high or very high radiation area must be designed in a way that would allow an individual inadvertently locked inside such an area, to egress from the area.

a. U.S. EPR Technical Specification 3.6.10 states that the listed radiation protection doors in containment must begin to open with an opening torque of less than 500 ft-lbs. This test is preformed with the shear pin disengaged and is necessary to ensure that the doors have not developed excessive friction (freedom of movement), to ensure the doors can meet their safety-related function. The applicant has confirmed that this is the maximum allowable torque

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If the applicant decides to alter Technical Specification 3.6.10 or develop a separate test from Technical Specification 3.6.10, the applicant must ensure that the doors are tested at a frequency sufficient to provide reasonable assurance that the doors will maintain their ability to adequately allow emergency egress. In addition, the applicant should ensure that all of the functions of the doors are considered in the tests and that specific functions of the doors are not defeated as the result of these tests (for example, a failed test should not allow propping open the radiation doors, because these doors are relied upon for shielding purposes).

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