ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Monday, July 01, 2013 4:42 PM
To: Snyder, Amy
Cc: Clark, Phyllis; ANDERSON Katherine (EXTERNAL AREVA); DELANO Karen (AREVA); LEIGHLITER John (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); KANE Steve (EXTERNAL AREVA)
Subject: Response to U.S. EPR Design Certification Application FNAL RAI No. 570 (6989), FSAR Ch.12, Supplement 4
Attachments: RAI 570 Supplement 4 Response US EPR DC.pdf

Amy,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to the one question in RAI No. 570 on April 10, 2013. Supplement 1 response sent on April 12, 2013 provided a final response to Question 12.03-12.04-32. Supplement 2 response sent on April 30, 2013 provided a schedule for a revised final response to Question 12.03-12.04-32 based on NRC staff comments received. Supplement 3 response was sent on May 17, 2013 to provide a revised final response to RAI No. 570, Question 12.03-12.04-32.

In order to address additional NRC staff comments received, the attached file, "RAI 570 Supplement 4 Response US EPR DC.pdf, " provides a revised final response to RAI No. 570, Question 12.03-12.04-32.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 570, Question 12.03-12.04-32. Also included are related markups to AREVA NP Technical Report ANP-10292, "U.S. EPR Conformance with Standard Review Plan (NUREG-0800) Technical Report."

The following table indicates the respective pages in the response document, "RAI 570 Supplement 4 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 570 — 12.03-12.04-32	2	8

This concludes the formal AREVA NP response to RAI 570, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)
Sent: Friday, May 17, 2013 1:28 PM
To: Amy.Snyder@nrc.gov
Cc: phyllis.clark@nrc.gov; ANDERSON Katherine (External AREVA NP INC.); DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); KANE Steve M (EXT)
Subject: Response to U.S. EPR Design Certification Application FNAL RAI No. 570 (6989), FSAR Ch.12, Supplement 3

Amy,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to the one question in RAI No. 570 on April 10, 2013. Supplement 1 response sent on April 12, 2013 provided a final response to Question 12.03-12.04-32. Supplement 2 response sent on April 30, 2013 provided a schedule for a revised final response to Question 12.03-12.04-32 based on NRC staff comments received.

Attached please find AREVA NP Inc.'s revised final response to the subject request for additional information (RAI). The attached file, "RAI 570 Supplement 3 Response US EPR DC.pdf," provides a technically correct and complete revised final response to the one question in RAI No. 570.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 570, Question 12.03-12.04-32. Also included are related markups to AREVA NP Technical Report ANP-10292, "U.S. EPR Conformance with Standard Review Plan (NUREG-0800) Technical Report."

The following table indicates the respective pages in the response document, "RAI 570 Supplement 3 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 570 — 12.03-12.04-32	2	8

This concludes the formal AREVA NP response to RAI 570, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)
Sent: Tuesday, April 30, 2013 2:23 PM
To: Amy.Snyder@nrc.gov
Cc: DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); WILLS Tiffany (CORP/QP); HONMA George (EXT); KANE Steve M (EXT); RYAN Tom (RS/NB); phyllis.clark@nrc.gov; ANDERSON Katherine (External AREVA NP INC.)
Subject: Response to U.S. EPR Design Certification Application FNAL RAI No. 570 (6989), FSAR Ch.12, Supplement 2

Amy,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to the one question in RAI No. 570 on April 10, 2013. Supplement 1 response sent on April 12, 2013 provided a final response to Question 12.03-12.04-32.

Based on NRC staff comments received on April 26, 2013, we are planning to revise our response to this question. A schedule for a revised final response to Question 12.03-12.04-32 is provided in the table below.

Question #	Response Date

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: RYAN Tom (RS/NB)
Sent: Friday, April 12, 2013 3:23 PM
To: Amy.Snyder@nrc.gov
Cc: DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WILLS Tiffany (CORP/QP); HONMA George (EXT); KANE Steve M (EXT); WILLIFORD Dennis (RS/NB)
Subject: Response to U.S. EPR Design Certification Application FNAL RAI No. 570 (6989), FSAR Ch.12, Supplement 1

Amy,

AREVA NP Inc. provided a schedule for a technically correct and complete response to the one question in RAI No. 570 on April 10, 2013.

Attached please find AREVA NP Inc.'s technically correct and complete response to the subject request for additional information (RAI) as promised. The attached file, "RAI 570 Supplement 1 Response US EPR DC.pdf," provides a technically correct and complete final response to the one question in RAI No. 570.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 570, Question 12.03-12.04-32.

Also included are related markups to AREVA NP's document, ANP-10292, Revision 1, "U.S. EPR Conformance with Standard Review Plan (NUREG-0800) Technical Report."

The following table indicates the respective pages in the response document, "RAI 570 Supplement 1 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 570 — 12.03-12.04-32	2	5

This concludes the formal AREVA NP response to RAI 570, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Tom Ryan
Project Engineer
Regulatory Affairs
AREVA NP
An AREVA and Siemens company
7207 IBM Drive - CLT2B
Charlotte, NC 28262

Phone: 704-805-2643, Cell : 704-292-5627
Fax: 434-382-6657

From: WILLIFORD Dennis (RS/NB)
Sent: Wednesday, April 10, 2013 5:52 PM
To: Amy.Snyder@nrc.gov
Cc: phyllis.clark@nrc.gov; DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WILLS Tiffany (CORP/QP); HONMA George (EXT); KANE Steve M (EXT)
Subject: Response to U.S. EPR Design Certification Application FNAL RAI No. 570 (6989), FSAR Ch.12

Amy,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 570 Response US EPR DC.pdf" provides a schedule since a technically correct and complete response to this one question cannot be provided at this time.

The following table indicates the respective pages in the response document, "RAI 570 Response US EPR DC.pdf" that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 570 — 12.03-12.04-32	2	3

A complete answer is not provided for the one question. The schedule for a technically correct and complete final response to this question is provided below.

Question #	Response Date
RAI 570 — 12.03-12.04-32	April 12, 2013

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
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Email: Dennis.Williford@areva.com

From: Snyder, Amy [mailto:Amy.Snyder@nrc.gov]
Sent: Tuesday, March 12, 2013 12:34 PM
To: ZZ-DL-A-USEPR-DL
Cc: Stutzcage, Edward; McCoppin, Michael; Clark, Phyllis
Subject: U.S. EPR Design Certification Application FNAL RAI No. 570 (6989), FSAR Ch.12

RESENT-

Corrected the RAI question number from 12.03-32 to 12.03-12.04-32

See attached file.
Thank you
Amy

Attached, please find the subject requests for additional information (RAI). An advanced RAI was provided to you on January 18,2013, and discussed with your staff on February 4, 2013. On February 8, 2013, the staff made substantive changes/ additional changes to the January 18, 2013 advanced RAI beyond what was discussed, based on the discussion during the February 4, 2013 teleconference. On February 22, 2013, AREVA made a suggested change to the wording of the RAI. On February 27, 2013 staff accepted AREVA's modification but added additional wording.

On March 7, 2013, you informed us that the modified advanced RAI is clear and no further clarification is needed and that the RAI does not contain any proprietary information. 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 or April 11, 2013**, 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."

Thank You,

Amy

Amy Snyder, U.S. EPR Design Certification Lead Project Manager
Licensing Branch 1 (LB1)
Division of New Reactor Licensing
Office of New Reactors
U.S. Nuclear Regulatory Commission
☎ Office: (301) 415-6822
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Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 4591

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Subject: Response to U.S. EPR Design Certification Application FNAL RAI No. 570 (6989), FSAR Ch.12, Supplement 4
Sent Date: 7/1/2013 4:42:13 PM
Received Date: 7/1/2013 4:42:21 PM
From: WILLIFORD Dennis (AREVA)

Created By: Dennis.Williford@areva.com

Recipients:
"Clark, Phyllis" <Phyllis.Clark@nrc.gov>
Tracking Status: None
"ANDERSON Katherine (EXTERNAL AREVA)" <katherine.anderson.ext@areva.com>
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Tracking Status: None

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Files	**Size**	**Date & Time**
MESSAGE	10885	7/1/2013 4:42:21 PM
RAI 570 Supplement 4 Response US EPR DC.pdf	200555	

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

Response to

Request for Additional Information 570, Supplement 4

3/11/2013
U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020

Review Section: 12.03-12.04 - Radiation Protection Design Features

Question 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.
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 sheer 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.
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 performed 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 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. The applicant should take appropriate actions to restore function of the doors if the test results are unsatisfactory. In addition, the applicant should specify a maximum allowable time that may elapse until a door whose test results are unsatisfactory, must be fixed. Finally, the applicant must ensure that if a failure of a test does occurs, that access to areas continue to be appropriately controlled in accordance with EPR technical specifications 5.7.1 and 5.7.2, 10 CFR 1601(d), and 10 CFR 1602, as applicable. The FSAR should be updated, as appropriate, to address the above items.

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.

Supplemental NRC Comments, Letter Dated 4-26-13:

The staff has reviewed AREVA's response to RAI 570, Question 12.03-12.04-32 and have the following comments:

- The response to item 1 and associated FSAR markups are acceptable.
- For item 2, AREVA proposed a markup to ANP-10292, "U.S. EPR Conformance with SRP Acceptance Criteria,' and provided a markup of the document in the response. In the markup of this document, AREVA adds FSAR Section 3.8.3.1.13 under SRP Criterion 12.3-12.4-AC-06 but it says that it is not applicable to U.S. EPR and is the COLs responsibility. However, at the present time, there is no COL action items in Section 3.8.3.1.13 related to radiation protection. Therefore, the staff does not understand why AREVA is saying that this section is the COL's responsibility.

- The remainder of the response to Item 2 is acceptable.
- For Item 3, the response to Part c is acceptable. The following comments apply to their response to Item 3 Parts a and b:
  - In the response to Part a, AREVA states the following, "U.S. EPR FSAR, Tier 2, Section 14.2.12.5.2, (Reactor Containment Building Doors – Test #044), will also be revised to add a test of all radiation doors in containment at a lower value of 100 ft.-lbs. torque including the safety related doors in Technical Specification section 3.6.10." However, AREVA never adds anything to Chapter 14 or anywhere else in the FSAR stating that the doors will be tested at 100 ft.-lbs. This information is needed in the FSAR to resolve this issue.
  - AREVA states in their proposed FSAR markup to section 3.8.3.1, "Periodic door testing will be performed during plant operation, similar to Section 14.2.12.5.2, Reactor Containment Building Doors, test #044 to confirm that the doors are capable of meeting the applicable requirements of 10 CFR 1601(d) and 10 CFR 1602." There are multiple problems with this statement, as follows:
    - The applicant has to specify how often testing will be performed (instead of just saying periodic testing) (for example, the technical specifications tests on these doors are performed every 24 months).
    - They say the test will be similar to the test in Section 14.2.12.5.2, but do not describe any differences. Why not use the same test as test #044? In addition, the Chapter 14.2 tests are considered completed after power extension testing is complete (as stated in FSAR section 14.2.1.1). Therefore, if they are going to credit this test, or something similar to this test to be performed during operation, they would have to clearly make the distinction that this test does not expire with the other tests in section 14.2.
    - This test should confirm that the doors meet the applicable requirements of TS 5.7.1 and 5.7.2, as well as 10 CFR 20.1601(d) and 10 CFR 20.1602. Therefore, TS 5.7.1 and 5.7.2 should be included in this section of the FSAR markup.
    - The applicant forgot the "20" in 10 CFR 20.1601(d) and 10 CFR 20.1602.
  - Referring to the test described above, the applicant's FSAR markup states, "Doors that are not capable of meeting design requirements per this test will be administratively controlled until repairs have been complete." The term administrative controls is vague and it doesn't explain what or how they will be administratively controlling things. Staff believes that more detail is needed but that this level of detail would be best addressed as added detail to the normal radiation protection program, which is addressed by a COL Action Item in FSAR Section 12.5. However, the level of detail provided in normal radiation protection programs (for example NEI 07-08 and NEI 07-03) does not cover the unique situation presented here. Therefore, staff recommends that AREVA add a COL action item that will require the COL applicant's to state what actions will be performed in the event of a failed test.

    If AREVA chooses to answer this question without a COL item, they must provide more detail on actions that will be performed in the event of a failed test and add it to the FSAR, the solution must not violate NRC regulations and must not be inconsistent with plant design, as provided in other areas of the FSAR.

- In the proposed FSAR markup for test #044, on pages 14.2-90 and 14.2-91, paragraphs 3.10 and 3.11.3 seem to be non-specific and somewhat confusing. For example, in paragraph 3.11.3, it is not clear from reading this paragraph if the door can be opened manually, without electricity, from the inside or not or if something external has to be activated to allow emergency egress. Therefore, the applicant should use wording similar to what is used in the markup of FSAR section 3.8.3.1 or simply refer to this FSAR section, when describing features for emergency egress in paragraphs 3.10 and 3.11.3 of test #044.

Supplemental NRC Comments, Letter Dated 5-23-13:

The staff believes that these are editorial corrections that are needed. If AREVA is in agreement that the comments are only editorial and if AREVA addresses the comments, the response will be acceptable.

All of these comments are in the applicant's proposed markup to Chapter 14, test #044.

1. Item 1.4.2 says, "Look Requirements." I believe that they may have intended for it to say "Lock Requirements." If this is simply an editorial error, it should be corrected, if AREVA intended it to say "Look Requirements," they will have to explain what they mean.
2. Item 3.3 appears to be missing a few words in several places. It should be edited to make it grammatically correct.
3. Item 3.11 also appears to have some editorial mistakes and may be missing a few words. It should be edited to make it grammatically correct.
4. (very minor) In item 2.5, the word "side" should be outside both sets of parenthesis and in Item 5.1, the parenthesis are never closed.

Response to Question 12.03-12.04-32:

Item 1:

U.S. EPR FSAR Tier 2, Section 12.3.1.8.1 will be revised to reference the design features of the radiation protection doors including emergency egress, which are described in U.S. EPR FSAR Tier 2, Section 3.8.3.1.13. U.S. EPR FSAR Tier 2, Section 3.8.3.1.13 will be revised to remove the word “large” because there are no differences in the locking mechanism of the radiation swing doors. A description similar to that suggested in this Question will be added to U.S. EPR FSAR Tier 2, Section 3.8.3.1.13 to indicate that the locking mechanism for the radiation protection swing doors will be designed so that the shear pin will engage after door closure and disengage prior to opening to preclude damage to the shear pin while performing entry and egress functions.

Item 2:

U.S. EPR FSAR Tier 2, Section 3.8.3.1.13 describes the containment radiation protection doors design. There are 47 radiation protection doors in containment, and 45 of these radiation protection doors provide a pressure relief function. The door “swings” open to meet its pressure relief function and incorporates a shear pin as part of the locking mechanism design. For the radiation protection swing doors in containment (not only the doors listed in U.S. EPR FSAR Tier 2, Chapter 16, Technical Specification 3.6.10), the pressure where the shear pins are designed to break is 2.9 psid +20 percent. This value is provided in U.S. EPR FSAR Tier 2, Table 3.8-18 for each door. This pressure value, when applied across the surface area of the radiation swing door, results in a significantly large force required to break or shear the pin so that a person pulling or pushing on these doors with a reasonable force, without using extraordinary force, tools, or equipment, could not inadvertently open this door when the pin is engaged as part of the locking mechanism. U.S. EPR FSAR Tier 2, Section 3.8.3.1.13 will be revised to clarify this design information.

The two radiation protection doors in containment that do not provide a pressure relief function are motor-operated rolling doors, without hinges, and no shear pin is incorporated in their locking mechanism design. The locking mechanism for these doors is designed to verify that they cannot be inadvertently opened during operation, while also meeting the function of allowing for emergency egress. To address inadvertent operation/opening of the doors, the locking mechanism is designed so that locking the door will de-energize the motor, verifying that the door cannot be opened. For emergency egress, a “panic” lock system is employed that allows for manual opening of the motor-operated rolling doors from the inside using a handle, which decouples the electric drive to allow door opening, even with the motor de-energized. This provides an exit out of the room, even if the door is locked from the outside during an emergency or the need to egress quickly. U.S. EPR FSAR Tier 2, Section 3.8.3.1.13 will be revised to address and clarify the design of these doors, and will add the statements in this Item to meet the requirements of 10 CFR 20.1601 and 10 CFR 20.1602. In accordance with 10 CFR 52.47(a)(9), ANP-10292, “U.S. EPR Conformance with SRP Acceptance Criteria,” AREVA NP Inc (AREVA NP), Revision. 1, May 2009, will be revised to reference this discussion. A Combined License (COL) Information Item will be added in response to Item 3 of this Response.

Item 3:

a) U.S. EPR FSAR Tier 2, Section 3.8.3.1.13 will be revised to provide information on how an individual can egress from an area with any of the radiation protection doors in containment (swing or motor-operated rolling doors). U.S. EPR FSAR Tier 2, Section 14.2.12.5.2 (Reactor Containment Building Doors - Test # 044), will also be revised to add a test for the radiation doors in containment at a lower value of 100 ft-lbs torque, including the safety-related doors in U.S. EPR FSAR Tier 2, Chapter 16, Technical Specification 3.6.10. The 100 ft-lbs torque value is specified in U.S. EPR FSAR Tier 2, Section 3.8.3.1.13.

   At a minimum door width of 2.5 ft hinge to handle distance, this equates to a 40 lb force required for personnel to open the door. This test will verify that the force that the door will open for emergency egress is sufficiently low so that a person pulling or pushing on these doors with a reasonable pulling or pushing force will be able to open the door, and will verify that they are capable of meeting the emergency egress design requirement of beginning to open with a torque of less than 100 ft-lbs.

   U.S. EPR FSAR Tier 2, Section 3.8.3.1.13 will be revised to state that periodic door testing will be performed during plant operation, using the applicable prerequisites, test methods, data required, and acceptance criteria of U.S. EPR FSAR Tier 2, Section 14.2.12.5.2, Test #044, to confirm that the radiation doors are capable of meeting the applicable requirements of 10 CFR 20.1601(d), 10 CFR 20.1602, and Technical Specification Administrative Controls Sections 5.7.1 and 5.7.2. U.S. EPR FSAR Tier 2, Table 1.8-2 will be revised to show that a COL applicant that references the U.S. EPR design will include in its normal radiation protection program administrative controls to verify the requirements of 10 CFR 20.1601(d) and 10 CFR 20.1602 are met through periodic testing of reactor containment building doors (i.e., every 24 months).

   Periodic testing provides reasonable assurance that the doors will maintain their ability to adequately allow emergency egress. Doors that are not capable of meeting design requirements per this test will be administratively controlled until repairs have been completed.

b) The Response to Items 2 and 3 a) of this Question address the emergency egress features for the two radiation protection motor-operated rolling doors identified in U.S. EPR FSAR Tier 2, Table 3.8-18, Doors 8 and 9 on the Elevation +5 ft of containment. The Response to Item 3 a) describes how U.S. EPR FSAR Tier 2, Section 14.2.12.5.2, Reactor Containment Building Doors - Test # 044, will be revised to add a test to verify that the motor-operated rolling doors are also capable of meeting the emergency egress design requirements of 10 CFR 20.1601 and 10 CFR 20.1602.

c) U.S. EPR FSAR Tier 2, Section 12.3.1.8.1 will be revised to indicate that emergency egress is possible from the accessible areas that fall within the requirements of 10 CFR 20.1601 and 10 CFR 20.1602.

The relocation of non-structural information from U.S. EPR FSAR Tier 2, Section 3.8.3.1.13 and the proposed COL Item 3.8-21 will be addressed in the Response to RAI 588.

FSAR Impact:

U.S. EPR FSAR Tier 2, Sections 3.8.3.1.13, 12.3.1.8.1, and 14.2.12.5.2, and Table 1.8-2 will be revised as described in the response and indicated on the enclosed markup.

Technical Report Impact:

ANP-10292, “U.S. EPR Conformance with Standard Review Plan (NUREG-0800),” will be revised as described in the response and indicated on the enclosed markup.

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Table 1.8-2—U.S. EPR Combined License Information Items
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Item No.	Description	Section
3.8-20	A COL applicant that references the U.S. EPR design certification will compare the ESWB site-specific predicted angular distortion to the angular distortion in the total differential settlement contours in Figure 3.8-136, using methods described in U.S. Army Engineering Manual 1110-1-1904, The comparison is made throughout the basemat in both the east-west and north-south directions. If the predicted angular distortion of the basemat of ESWB structures is less than the angular distortion shown, the site is considered acceptable. Otherwise, further analysis will be required to demonstrate that the structural design is adequate.	3.8.5.5.3
3.8-21	A combined license (COL) applicant that references the U.S. EPR design certification will include in its normal radiation protection program administrative controls to ensure the requirements of 10 CFR 20.1601(d) and 10 CFR 20.1602 are met through periodic testing of reactor containment building doors (i.e., every 24 months).	3.8.3.1
3.9-1	A COL applicant that references the U.S. EPR design certification will submit the results from the vibration assessment program for the U.S. EPR RPV internals, in accordance with RG 1.20.	3.9.2.4
3.9-2	A COL applicant that references the U.S. EPR design certification will prepare the design specifications and design reports for site specific ASME Class 1, 2, and 3 components, piping, supports and core support structures that comply with and are certified to the requirements of Section III of the ASME Code. The COL applicant will address the results and conclusions from the reactor internals material reliability programs applicable to the U.S. EPR reactor internals with regard to known aging degradation mechanisms such as irradiation-assisted stress corrosion cracking and void swelling addressed in Section 4.5.2.1.	3.9.3
3.9-3	Deleted.~~A COL applicant that references the U.S. EPR design certification will examine the feedwater line welds after hot functional testing prior to fuel loading and at the first refueling outage, in accordance with NRC Bulletin 79-13. A COL applicant that references the U.S. EPR design certification will report the results of inspections to the NRC, in accordance with NRC Bulletin 79-13.~~	~~3.9.3.1.1~~Deleted
3.9-4	As noted in ANP-10264NP-A, a COL applicant that references the U.S. EPR design certification will describe essential elements of a program to confirm that thermal deflections do not create adverse conditions during hot functional testing.	3.9.3.1.1

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RCB doors fall into four general types of design:

- Radiation protection doors, with a pressure relief function.
- Radiation protection doors, without a pressure relief function.
- Interior building room doors, with a pressure relief function.
- Interior building room doors, without a pressure relief function.

RCB radiation protection doors are large and are typically integrated in the shield walls surrounding the equipment spaces or inaccessible areas of the RCB during normal operation of the plant. The RCB has 47 radiation protection doors. Forty-five of the radiation protection doors also provide a pressure relief function. These 45 radiation doors are designed so that the whole door "swings" open during a pressure differential related accident to meet its pressure relief function. This swinging or bursting open response to the differential pressure generated across the doors during a HELB accident verifies that an acceptable differential pressure across structural walls of adjacent rooms or compartments is maintained. These 45 radiation protection doors have a swing/burst pressure of 2.9 psid and only open in one direction. The doors open into the room where the hinges are mounted. In the case of the radiation protection doors that have an active and an inactive leaf, both the active and the inactive leaf are assumed to swing open. These doors require special attention because their momentum and significant weight in a "burst" opening can impact civil structures. Door stops and other features are used to limit adverse impact, while still maintaining the opening efficiency of the doors. A portion of these doors are credited in the analyses to prevent compartment overpressurization during a HELB and are classified as safety-related and Seismic Category I as shown in Table 3.2.2-1 and Table 3.8-18. Refer to Section 6.2.1.2 for the dynamic effects of postulated HELB in individual compartments and allowable venting capability to prevent differential pressures from reaching the structural limits of the compartment walls. The only doors credited to open are safety-related doors identified in Table 6.2.1-13 and Table 3.8-18. The remaining radiation doors are classified as non-safety augmented quality (NS-AQ) and Seismic Category II as shown in Table 3.2.2-1 and Table 3.8-18.

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The radiation protection doors in the Reactor Building that include a pressure relief function are designed so that the whole door "swings" open during a pressure differential related accident (High Energy Line Break) to meet its pressure relief function. The locking mechanisms of those radiation protection doors incorporate a "shear" pin which shears under the designated burst pressure in Table 3.8-18 to provide for the opening of these doors in the event of a High Energy Line Break. This burst pressure value for the radiation swing doors specified in Table 3.8-18, when applied across the surface area of the door, results in a significantly large force required to break or shear the pin such that a person pulling or pushing on these doors with a reasonable pulling or pushing force (without using extraordinary force, tools,

equipment, etc.) could not inadvertently open this door when the pin is engaged as part of the locking mechanism.

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During normal operation, the shear pin also functions to engage as part of the locking mechanism on the radiation swing door to maintain access control and prevent unauthorized entry, and disengages to allow for emergency egress. The design of the locking mechanism for the radiation protection swing doors is such that the shear pin will engage after door closure and disengage prior to opening to preclude damage to the shear pin while performing the entry and egress functions. For emergency egress, a "panic" lock system is employed which allows for manual opening of the swing doors from the inside to provide an exit out of the room during an emergency even if the door is locked from the outside.

Thus, the radiation protection doors dual function design allows it to meet 10 CFR 20.1601 and 10 CFR 20.1602 requirements for access control to high radiation areas and very high radiation areas, respectively, while also meeting its pressure relief function for accident mitigation.

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Two radiation protection doors exist at Elevation +5 feet that do not provide a pressure relief function. These doors are motor-operated, rolling doors without hinges.

There is no shear pin incorporated into the locking mechanism design of these doors. The locking mechanism for the motor-operated rolling doors is designed so that these doors cannot be inadvertently opened during operation while also allowing for emergency egress. To address inadvertent operation/opening of the door, the locking mechanism is designed such that locking the door will de-energize the motor such that the door cannot be opened. For emergency egress, a "panic" lock system is employed which allows for manual opening of the motor-operated rolling doors from the inside using a handle which decouples the electric drive to allow door opening even with the motor de-energized. This provides an exit out of the room during an emergency even if the door is locked from the outside.

Periodic door testing at an ongoing torque of 100 ft. lbs. for emergency egress will be performed during plant operation, using the applicable prerequisites, test methods, data required, and acceptance criteria of Section 14.2.12.5.2, Reactor Containment Building Doors, test #044, to confirm that the radiation doors are capable of meeting the applicable requirements of Technical Specification 5.7.1, Technical Specification 5.7.2, 10 CFR 20.1601(d) and 10 CFR 20.1602. Periodic testing provides reasonable assurance that the doors will maintain their ability to adequately allow emergency egress. Doors that are not capable of meeting design requirements per this test will be administratively controlled until repairs have been completed. A combined license (COL) applicant that references the U.S. EPR design certification will include in its normal radiation protection program administrative controls to ensure the

requirements of 10 CFR 20.1601(d) and 10 CFR 20.1602 are met through periodic testing of reactor containment building doors (i.e., every 24 months).

Other interior building room doors are primarily used to divide hallways and rooms. In addition to providing personnel access, these interior door types may also provide functions such as leak tightness. The RCB has 45 interior building doors. Forty-three of these doors provide a pressure relief function. These doors are designed with an integral pressure relief aperture or "blowout panel." The pressure relief aperture is designed to open or burst in only one direction to meet its pressure relief function during a pressure differential accident. Generally, these 43 interior building room doors have a burst pressure of 1.45 psid. A portion of these doors are credited in the analyses to prevent compartment over pressurization during a HELB and are classified as safety-related and Seismic Category I as shown in Table 3.2.2-1 and Table 3.8-18. Refer to Section 6.2.1.2 for the dynamic effects of postulated HELB in individual compartments and allowable venting capability to prevent differential pressures from reaching the structural limits of the compartment walls. The only doors with burst panels credited to open are safety-related doors identified in Table 6.2.1-13 and Table 3.8-18. The remaining interior building doors are classified as NS-AQ and Seismic Category II as shown in Table 3.2.2-1 and Table 3.8-18.

The pressure relief door -8 feet, door 8 is the venting area room door for the spreading compartment and has a higher burst pressure up to 2.9 psid.

The doors with blowout panels are provided with panel or missile restraints to prevent their momentum from adversely impacting civil, mechanical, electrical, or I&C components in the immediate area.

There are two interior building room doors at Elevation +17 feet that do not provide a pressure relief function. These two doors provide access and entrance to the RV cavity pool area and the transfer canal pool area, are part of the pool liner, and are required to be water tight, with no pressure relief function or bust pressure capability required in support of a HELB.

3.8.3.2 Applicable Codes, Standards, and Specifications

The following codes, standards, specifications, design criteria, regulations, and regulatory guides are used in the design, fabrication, construction, testing, and inservice inspection of concrete and steel RB internal structures (GDC 1, GDC 2, GDC 4 and GDC 5). Section 5.4.14 describes the applicable codes, standards, and specifications for the design of NSSS component supports.

3.8.3.2.1 Codes and Standards

- ACI 301-05, Specifications for Structural Concrete for Buildings.

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Radiation sources in the Reactor Building include the reactor vessel, RCS, CVCS, safety injection system, pressurizer relief tank, in-containment refueling water storage tank, refueling system, aeroball system, and the reactor drain system.

Radiation protection doors that separate the Reactor Building equipment and service compartments consist of two types, as noted in Section 3.8.3.1.13. These two types are as follows:

- Radiation protection doors, with a pressure relief function.
- Radiation protection doors, without a pressure relief function.

The design features of these radiation protection doors which meet 10 CFR 20.1601 and 10 CFR 20.1602 are described in Section 3.8.3.1.13, including the provision for emergency egress from all accessible areas that fall within the requirements of 10 CFR 20.1601 and 10 CFR 20.1602.

~~Doors separate Reactor Building equipment and service compartments.~~

The following figures illustrate the Reactor Building and are based on the general arrangement drawings provided in Section 1.2:

- Figure 12.3-1—Spreading Area at the -20 Ft Elevation of the Reactor Building.
- Figure 12.3-2—Reactor Cavity at the +17 Ft Elevation of the Reactor Building.
- Figure 12.3-3—Core Internals Storage Area and Instrument Lance Storage Areas at the +17 Ft Elevation in the Reactor Building.
- Figure 12.3-4—Transfer Pit at the +17 Ft Elevation in the Reactor Building.
- Figure 12.3-7—Reactor Cavity Section.
- Figure 12.3-8—Containment Building Section Looking Plant-West at the Reactor Cavity, Core Internals Storage, Instrument Lance Storage, and Spreading Area.
- Figure 12.3-9—Containment Building Section Looking Plant-East at the Reactor Cavity, Core Internals Storage, Transfer Pit, and Spreading Area.

12.3.1.8.2 Fuel Building

The very high radiation areas in the Fuel Building during normal and refueling operations are:

- The transfer pit (UFA16 023), which is a very high radiation area only during that portion of the refueling evolution in which fuel is being moved between the Reactor Building and the Fuel Building. This area is flooded with refueling water during this period and is inaccessible. The transfer pit access room (UFA15 096) is

1.0 OBJECTIVE

1.1 To demonstrate the ability of raw water supply system (RWSS) to supply filtered water to downstream systems (e.g., potable and sanitary water, demineralized water distribution system).

2.0 PREREQUISITES

2.1 Construction activities on the RWSS have been completed.

2.2 RWSS instrumentation has been calibrated and is functional for performance of the following test.

2.3 Support system required for operation of the RWSS is complete and functional.

2.4 Test instrumentation available and calibrated.

2.5 The RWSS intake is being maintained at the water level specified in the design documents.

2.6 The RWSS flow balance has been performed.

3.0 TEST METHOD

3.1 Verify that the RWSS pump and system flow meet design requirement (refer to Section 9.2.9).

3.2 Verify standby RWSS pump starts on low discharge pressure or a trip of the running pump.

4.0 DATA REQUIRED

4.1 Pump operating data.

4.2 Setpoints at which alarms and interlocks occur.

5.0 ACCEPTANCE CRITERIA

5.1 The RWSS operates as designed (refer to Section 9.2.9):

5.1.1 RWSS flow meets design requirements.

5.1.2 RWSS alarms, interlocks, and controls (manual and automatic) function as designed.

5.1.3 The RWSS pumps meet design requirements.

14.2.12.5.2 Reactor Containment Building Doors (Test #044)

1.0 OBJECTIVE

1.1 To perform testing to ensure that reactor containment building (RCB) radiation doors are capable of meeting design requirements.

1.1.1 Door locks, local and remote alarms, and video surveillance, in compliance with 10 CFR 20.1601 and 10 CFR 20.1602

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requirements, have been installed on doors that restrict access to HRA or VHRA areas (refer to Section 12.3.1.8.1). ~~Deleted.~~

1.1.2 Pressure relieving function (refer to Section 3.8.3.1.13 and Table 3.8-18.~~(refer to Section 6.2.5).~~

1.1.3 Seal between the equipment compartment and the service compartment.

1.1.4 Radiation barrier between the radiation sources in the equipment compartment and the service compartment~~, where personnel access is allowed in MODE 1~~ areas (refer to ~~Section 12.1~~Section 12.3.1.8.1).

1.2 To perform testing to ensure that RCB doors with pressure relieving panels are capable of meeting design requirements.

1.2.1 Pressure relieving function.

1.2.2 Seal between the equipment compartment and the service compartment.

1.2.3 RCB doors lockset design meets 10 CFR 20.1601 and 10 CFR 20.1602 requirements to control access as described in Section 12.3.1.8.1.

1.3 To perform testing to ensure that RCB watertight doors are capable of meeting design requirements.

Note: For preoperational testing it is not necessary to implement the radiation controls described in Technical Specifications 5.7.1 and 5.7.2 but it is necessary to determine the details of how the doors will be classified and controlled when the program is implemented.

1.4 To verify that the applicable radiation door access requirements of Technical Specifications 5.7.1 and 5.7.2 have been implemented.

1.4.1 Signage.

1.4.2 Lock Requirements.

2.0 PREREQUISITES

2.1 Construction activities on the following have either been completed or exceptions have been recorded and the impact on the system performance has been determined.

2.1.1 RCB radiation doors.

2.1.2 RCB doors with pressure relieving panels.

2.1.3 RCB watertight doors

2.2 Test instrumentation is available and calibrated. A record of calibrated test instrumentation used with individual tracking number and calibration due date shall be recorded in the official test record.

2.3 The following instrumentation, as applicable, has been calibrated and is operating satisfactorily:~~Deleted.~~

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2.3.1 Video surveillance.

2.3.2 Local and remote alarms.

2.4 Verify that RCB ventilation systems are capable of operating in various normal configurations.

2.5 The motorized RCB radiation doors, that are listed in Table 3.8-18 as motor operated rolling doors, are functional including the motor operators and associated key controlled switches located in the accessible (low dose) side and the emergency switch located in the non-accessible (high dose) side.

3.0 TEST METHOD

3.1 ~~Deleted~~Observe RCB radiation door remote position indication including local and remote alarms, as applicable.

3.2 Observe force required to open RCB radiation doors, that are described in Table 3.8-18 as swing doors, with shear pins disengaged:~~.~~

3.2.1 ~~Deleted~~Breakaway torque.

3.2.2 ~~Deleted~~Required torque to continue opening each RCB radiation door.

3.3 Observe that for each RCB radiation door described in Table 3.8-18 as a swing door, that the shear pin engages and the locking mechanism prevents unauthorized entry. This satisfies the access control requirements of 10 CFR 20.1601 and 10 CFR 20.1602, which are described in Section 12.3.1.8.1.~~Observe that each RCB radiation door shear pin engages and the locking mechanism prevents unauthorized entry.~~

3.3.1 The radiation door opens and closes as designed.

3.3.2 The shear pin engages when the closure mechanism is activated.

3.3.3 The shear pin is locked in the engaged position when the lockset is activated.

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3.3.4 The radiation swing doors cannot be opened, from the accessible area, when the lockset is locked either by pulling on the door (normal force) or by attempting to disengage the closure mechanism.

3.3.5 The radiation door closure mechanism, for doors that are described in Table 3.8-18 as swing doors, can be opened when the lockset is deactivated from the non-accessible (high dose) side area using the emergency escape feature.

3.4 Observe that each RCB radiation door opens freely without obstruction.

3.5 ~~Deleted~~Observe width of opening of each RCB radiation door when fully open.

3.6 Observe seal of each RCB radiation door when the door is shut.

3.7 Observe that each RCB door with pressure relieving aperture latch engages and the locking mechanism prevents unauthorized entry from the accessible (low dose) area. ~~Observe that each RCB door with pressure relieving aperture latch engages and the locking mechanism prevents unauthorized entry.~~

3.8 Observe seal of each RCB door with pressure relieving aperture when the door is shut.

3.9 Observe that each RCB door with pressure relieving panel is free to open without obstruction.

3.10 Observe that each RCB door with pressure relieving aperture latch engages and the locking mechanism allows entry from the non-accessible (high dose) area when the emergency escape feature is activated, as described in U.S. EPR FSAR Tier 2, Section 3.8.3.1.13.

3.11 Observe the force required to open RCB radiation doors described in Table 3.8-18 as motor operated rolling doors.

3.11.1 Breakaway torque.

3.11.2 Required torque to continue opening each RCB radiation door.

3.12 Observe that each RCB radiation door, that is described in Table 3.8-18 as a motor operated rolling door, locking mechanism prevents unauthorized entry that meets the requirements of 10 CFR 20.1601 and 10 CFR 20.1602 control access described in Section 12.3.1.8.1.

3.12.1 The radiation motor operated rolling door opens and closes as designed.

3.12.2 The radiation motor operated rolling door cannot be opened, from the accessible area, when the motor control lockset is locked either by pulling on the door (normal force) or by attempting to operate the controls when the control switch has been locked.

3.12.3 The radiation door closure mechanism, for doors that are described in Table 3.8-18 as motor operated rolling doors, can be opened when the emergency escape feature is activated from the non-accessible (high dose) side area, as described in U.S. EPR FSAR Tier 2, Section 3.8.3.1.13.

3.12.4 The radiation doors access controls meet the requirements described in Technical Specifications 5.7.1 and 5.7.2.

- Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. This is applicable for High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation.
- Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked door barrier that prevents unauthorized entry. This is applicable for High Radiation Areas with Dose Rates

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Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source of any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation.

3.13 ~~Deleted~~Observe RCB watertight door features.

3.14 Observe that each RCB watertight door latch engages and the locking mechanism prevents unauthorized entry.

3.15 Observe that each RCB watertight door opens freely without obstruction.

3.16 Observe seal of each RCB watertight door when the door is shut.

3.17 Operate the RCB ventilation system in various configurations while positioning the doors and verify no adverse effects.

4.0 DATA REQUIRED

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4.1 ~~Deleted~~RCB door instrumentation response, as applicable.

4.2 ~~Deleted~~Breakaway torque to open each RCB radiation swing door.

4.3 Performance data for radiation door closure device and the lockset.

4.4 Required torque to continue to open each RCB radiation swing door.

4.5 ~~Deleted~~Record width of opening for each RCB radiation swing door with door fully open.

4.6 Seal condition of the following:

4.6.1 RCB radiation swing doors

4.6.2 RCB doors with pressure relieving panels.

4.6.3 RCB radiation door, described in Table 3.8-18, as a motor-operated rolling door.

4.6.4 RCB watertight doors.

5.0 ACCEPTANCE CRITERIA

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5.1 Safety-related RCB radiation doors that are described in Table 3.8-18 as swing doors function as designed (see Section 3.8.3.1.13 and Section 12.3.1.8.1).~~Safety-related RCB radiation doors function as designed and described in Section 6.2~~

5.1.1 The opening torque is less than the maximum limit specified in Technical Specification Surveillance 3.6.10.2 (see Technical Specification Table 3.6.10-1).

5.1.2 The opening torque is less than the maximum limit specified in Section 3.8.3.1.13.

5.1.3 Access control requirements of the radiation doors meet the applicable programmatic requirements described in the following Technical Specification sections:

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- 5.7.1 High Radiation areas ≤ 1.0 rem/hour at 30 cm from the Radiation Source or surface penetrated by radiation.
- 5.7.2 High Radiation areas > 1.0rem/hour at 30 cm from the Radiation Source or surface penetrated, but less than 500 rad/hr at 1 meter from the Radiation Source or surface penetrated by radiation.

5.2 Non-safety-related RCB radiation doors that are described in Table 3.8-18 as swing doors function as designed (see Section 3.8.3.1.13 and Section 12.3.1.8.1).~~Non-safety RCB radiation doors function as designed and described in Section 6.2.~~

5.2.1 The opening torque is less than the maximum limit specified in Section 3.8.3.1.13.

5.2.2 Access control requirements of the radiation doors meeting the applicable programmatic requirements described in the following Technical Specifications sections:

- 5.7.1 High Radiation areas ≤ 1.0 rem/hour at 30 cm from the Radiation Source or surface penetrated by radiation.
- 5.7.2 High Radiation areas > 1.0 rem/hour at 30 cm from the Radiation Source or surface penetrated, but less than 500 rad/hr at 1 meter from the Radiation Source or surface penetrated by radiation.

5.3 Safety-related RCB doors with pressure relieving apertures function as designed and described in ~~Section 6.2~~Section 3.8.3.1.13.

5.4 Non-safety RCB doors with pressure relieving apertures function as designed and described in ~~Section 6.2~~Section 3.8.3.1.13.

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5.5 RCB watertight doors function as designed and described in Section 3.8.3.1.13.

5.6 Non-safety RCB radiation doors, that are described in Table 3.8-18 as motor operated rolling doors, function as designed (see Section 3.8.3.1.13 and Section 12.3.1.8.1).

5.6.1 The opening torque is less than the maximum limit specified in Section 3.8.3.1.13.

5.6.2 Access control requirements of the radiation doors meet the programmatic requirements described in Technical Specifications 5.7.1 and 5.7.2.

- High Radiation areas ≤ 1.0 rem/hour at 30 cm from the Radiation Source or surface penetrated by radiation.
- High Radiation areas > 1.0 rem/hour at 30 cm from the Radiation Source or surface penetrated, but less than 500 rad/hr at 1 meter from the Radiation Source or surface penetrated by radiation.

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CHAPTER 12 Radiation Protection			
SRP Criterion	**Description** **(AC – Acceptance Criteria Requirement,** **SAC – Specific SRP Acceptance Criteria)**	**U.S. EPR Assessment**	**FSAR Section(s)**
	they relate to persons involved in licensed activities making every reasonable effort to maintain radiation exposures ALARA		
12.3-12.4-AC-02	**10 CFR 20.1201**, as it relates to occupational dose limits for adults.	Y	12.1.2
		N/A-COL	12.1.3 12.5
12.3-12.4-AC-03	**10 CFR 20.1201**, **10 CFR 20.1202**, **10 CFR 20.1203**, **10 CFR 20.1204**, **10 CFR 20.1701**, and **10 CFR 20.1702**, as they relate to design features, ventilation, monitoring, and dose assessment for controlling the intake of radioactive materials	Y	12.3.3 12.3.4
		N/A-COL	12.5
12.3-12.4-AC-04	**10 CFR 20.1301** and **10 CFR 20.1302**, as they relate to the facility design features that impact the radiation exposure to a member of the public from noneffluent sources associated with normal operations and anticipated operational occurrences	Y	12.3.5.3
		N/A-COL	12.5
12.3-12.4-AC-05	**10 CFR 20.1406**, as it relates to the design features that will facilitate eventual decommissioning and minimize, to the extent practicable, the contamination of the facility and the generation of radioactive waste	Y	12.3.6
12.3-12.4-AC-06	**10 CFR 20.1601**, **10 CFR 20.1602**, **10 CFR 20.1901**, **10 CFR 20.1902**, **10 CFR 20.1903**, and **10 CFR 20.1904**, as they relate to the identification of potential sources of radiation exposure and the controls of access to and work within areas of the facility with a high potential for radiation exposure	Y	12.3.1.8
		N/A-COL	12.5 3.8.3.1.13
12.3-12.4-AC-07	**10 CFR 20.1801**, as it relates to securing licensed materials against unauthorized removal from the place of storage	N/A-COL	12.5
12.3-12.4-AC-08	**General Design Criterion (GDC)19** found in Appendix A to 10 CFR Part	Y	12.3.5.2