

ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Thursday, January 19, 2012 10:33 AM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (AREVA); CRIBB Arnie (EXTERNAL AREVA); DELANO Karen (AREVA); HATHCOCK Phillip (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); KOWALSKI David (AREVA); BALLARD Bob (AREVA); WILLIAMSON Rick (AREVA)
Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No. 519 (6131), FSAR Ch. 9, Question 09.05.01-88
Attachments: RAI 519 Response US EPR DC - DRAFT.pdf
Importance: High

Getachew,

Attached is a DRAFT response to Question 09.05.01-88 in RAI No. 519 (FSAR Ch. 9) in advance of the January 27, 2012 final date. An official deferral of the response date to this question in RAI No. 519 will be sent in a follow-up e-mail to give an opportunity for the NRC staff to review and provide feedback prior to sending this response as final.

Let me know if the staff has any questions or if this response can be sent as final.

Thanks,

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: Wednesday, November 16, 2011 5:28 PM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 519 (6131), FSAR Ch. 9

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 519 Response US EPR DC.pdf," provides a schedule since a technically correct and complete response to the question cannot be provided at this time.

The following table indicates the respective pages in the response document, "RAI 519 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
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RAI 519 — 09.05.01-88	2	2
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The schedule for a technically correct and complete response to this question is provided below.

Question #	Response Date
RAI 519 — 09.05.01-88	January 27, 2012

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.

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From: Tesfaye, Getachew [<mailto:Getachew.Tesfaye@nrc.gov>]
Sent: Monday, October 17, 2011 4:06 PM
To: ZZ-DL-A-USEPR-DL
Cc: McCann, Edward; Dreisbach, Jason; Segala, John; Clark, Phyllis; Hearn, Peter; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 519 (6131), FSAR Ch. 9

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on October 15, 2011, and on October 17, 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,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 3692

Mail Envelope Properties (2FBE1051AEB2E748A0F98DF9EEE5A5D4A542B5)

Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No. 519 (6131), FSAR Ch. 9, Question 09.05.01-88
Sent Date: 1/19/2012 10:32:39 AM
Received Date: 1/19/2012 10:32:56 AM
From: WILLIFORD Dennis (AREVA)

Created By: Dennis.Williford@areva.com

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Files	Size	Date & Time
MESSAGE	3275	1/19/2012 10:32:56 AM
RAI 519 Response US EPR DC - DRAFT.pdf		337958

Options

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

Response to

Request for Additional Information No. 519(6131), Revision 0

10/17/2011

U.S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 09.05.01 - Fire Protection Program

Application Section: 9.5.1

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

DRAFT

Question 09.05.01-88:**OPEN ITEM****Follow-up to RAI 482, Question 09.05.01-84**

The response to RAI 482 Question 09.05.01-84 revised FSAR Tier 1 Section 2.1.1.1 and Table 2.1.1-8 to delete the 3 hour rated fire barrier separation between the RBA and the SBs and the FB and between the RBA and the RCB. FSAR Tier 2 Appendix 9A Tables shows these barriers as 3 hour rated. FSAR Tier 1 Section 2.1.1.1 and Table 2.1.1-8 both reference FSAR Tier 1 Figure 2.1.1-20 for fire ratings but this figure does not designate any fire ratings. Additionally, RG 1.189 Regulatory Position 6.1.1 Containment separation criteria only applies internal to the Containment not between external structures. The applicant needs to revise FSAR Tier 1 Section 2.1.1.1 and Table 2.1.1-8 to provide the fire barrier ratings for the above structures or reference a figure that has the ratings and to ensure RG 1.189 Containment separation guidance is used properly.

Response to Question 09.05.01-88:

U.S. EPR FSAR Tier 1, Section 2.1.1.1 and Table 2.1.1-8—Reactor Building ITAAC, Item 2.7, will be revised to provide the fire barrier ratings for the separation between the Reactor Containment Building (RCB) and Reactor Building Annulus (RBA), between the RBA and Safeguards Buildings, and between the RBA and Fuel Building.

FSAR Impact:

U.S. EPR FSAR Tier 1, Section 2.1.1.1 and Table 2.1.1-8, will be revised as described in the response and indicated on the enclosed markup.

relief device” for their respective compartments. The doors provide this pressure relief function by swinging open or by use of a pressure balance aperture (blowout panel) in the door.

2.0 Key Design Features

- 2.1 Six rib support structures, provided at the bottom of the reactor cavity, as shown on Figure 2.1.1-9, limit lower reactor pressure vessel head deformation due to thermal expansion and creep during severe accident mitigation.
- 2.2 As shown on Figure 2.1.1-4, a flooding barrier is provided to prevent ingress of water into the core melt spreading area. Penetrations within the core melt water ingress barrier are protected by watertight seals. Doors within the core melt water ingress barrier are watertight doors.
- 2.3 Core melt cannot relocate to the upper containment due to the existence of concrete barriers, as shown on Figure 2.1.1-9.
- 2.4 The RB structures are Seismic Category I and are designed and constructed to withstand design basis loads without loss of structural integrity and safety-related functions. The design basis loads are those loads associated with:
- Normal plant operation (including dead loads, live loads, lateral earth pressure loads, equipment loads, hydrostatic, hydrodynamic, and temperature loads).
 - Internal events (including internal flood loads, accident pressure loads, accident thermal loads, accident pipe reactions, and pipe break loads, including reaction loads, jet impingement loads, and missile impact loads).
 - External events (including wind, rain, snow, flood, tornado, tornado-generated missiles and earthquake).
- 2.5 The RCB, including the liner plate and penetration assemblies, maintains its pressure boundary integrity at the design pressure.
- 2.6 The RCB is post-tensioned, pre-stressed concrete structure.
- 2.7 The RBA is separated from the SBs and the FB and the RBA is separated from the RCB by ~~an~~ internal hazard protection barriers that ~~have~~s a minimum 3-hour fire rating. The barriers are shown ~~, as indicated~~ on Figure 2.1.1-20.
- 2.8 The following are provided for water flow to the in-containment refueling water storage tank (IRWST):
- As shown on Figure 2.1.1-4, RCB rooms which are adjacent to the IRWST contain wall openings ~~slightly above the floor~~ to allow water flow into the IRWST.
 - As shown on Figure 2.1.1-5, RCB rooms which are directly above the IRWST, contain ~~trapezoidal-shaped~~ openings in the floor to allow water flow into the IRWST. The floor openings are protected by weirs and trash racks to provide a barrier against material transport into the IRWST.

RAI 519,
Q. 09.05.01-88

Table 2.1.1-8—Reactor Building ITAAC (6 Sheets)

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
		<p>e. Pre-service Inspections on the RCB post-tensioned, pre-stressed concrete structure has been performed in accordance with ASME Code Section III.</p>	<p>e. ASME Code Section III Data Reports exist and concludes that Pre-Service Inspections on the RCB post-tensioned, pre-stressed concrete structure meets ASME Section III.</p>
2.7	<p>The RBA is separated from the SBs and the FB and the RBA is separated from the RCB by an internal hazard protection barriers- as shown on Figure 2.1.1-20 that have a minimum 3-hour fire rating. The barriers are shown on Figure 2.1.1-20.</p>	<p>a. A fire protection analysis will be performed.</p>	<p>a. Completion of fire protection analysis that which concludes that features such as barriers, doors, dampers, and penetrations that separates the RBA from the SBs and FB, and the RBA from the RCB, have a minimum 3-hour fire rating.</p>
	<p style="text-align: center;">↑ RAI 519, Q. 09.05.01-88</p>	<p>b. Inspection of as-built conditions of features such as barriers, doors, dampers, and penetrations, which separate the RBA from the SBs and FB, and the RBA is separated from the RCB versus construction drawings of barriers, doors, dampers and penetrations as determined in the part (a) analysis will be performed.</p> <p>c. Testing of dampers that separate the RBA from the SBs and FB and the RBA is separated from the RCB will be performed.</p> <p>d. A post-fire safe shutdown analysis will be performed.</p>	<p>b. The as-built configuration of fire barriers, doors, dampers, and penetrations that separate the RBA from the SBs and FB and the RBA from the RCB, (as shown on Figure 2.1.1-20,) agrees with the construction drawings.</p> <p>c. Dampers that separate the RBA from the SBs and FB and the RBA from the RCB are operable under air flow conditions. close on receipt of signal.</p> <p>d. Completion of the post-fire safe shutdown analysis concludes that at least one success path comprised of the minimum set of SSC is available for safe shutdown.</p>