

ArevaEPRDCPEm Resource

From: WELLS Russell (AREVA) [Russell.Wells@areva.com]
Sent: Thursday, July 21, 2011 6:26 PM
To: Tesfaye, Getachew
Cc: ROMINE Judy (AREVA); GUCWA Len (EXTERNAL AREVA); RANSOM Jim (AREVA); ROMINE Judy (AREVA); Carneal, Jason; BENNETT Kathy (AREVA); DELANO Karen (AREVA); HALLINGER Pat (EXTERNAL AREVA); RYAN Tom (AREVA); WILLIFORD Dennis (AREVA)
Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No. 479 (5568_5610_5612), FSAR Ch. 6, Question 06.02.01-102, Part 2
Attachments: RAI 479 Response 6.2.1-102 Part 2 US EPR DC - Draft.pdf

Getachew,

Attached is a draft response to RAI No. 479, Question 06.02.01-102, Part 2 in advance of the final response date shown below.

Please let me know if the staff has questions or if this can be sent as a final response.

Sincerely,

Russ Wells for Dennis Williford

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: Tuesday, June 14, 2011 11:28 AM
To: 'Tesfaye, Getachew'
Cc: GUCWA Len (External RS/NB); BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); WILLIFORD Dennis (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 479 (5568_5610_5612), FSAR Ch. 6, Supplement 1

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to the three questions in RAI 479 on April 7, 2011.

The schedule has been has been changed as provided below:

Question #	Response Date
RAI 479 — 06.02.01-102	July 27, 2011
RAI 479 — 06.02.04-11	July 27, 2011
RAI 479 — 06.02.04-12	July 27, 2011

Sincerely,

**Tom Ryan for
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: WELLS Russell (RS/NB)
Sent: Thursday, April 07, 2011 9:23 AM
To: Tesfaye, Getachew
Cc: GUCWA Len (External RS/NB); Miernicki, Michael; BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 479 (5568_5610_5612), FSAR Ch. 6

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 479 Response US EPR DC.pdf" provides a schedule since technically correct and complete responses to the 3 questions are not provided.

The following table indicates the respective pages in the response document, "RAI 479 Response US EPR DC.pdf," that contain AREVA NP's responses to the subject questions.

Question #	Start Page	End Page
RAI 479 — 06.02.01-102	2	2
RAI 479 — 06.02.04-11	3	3
RAI 479 — 06.02.04-12	4	4

A complete answer is not provided for 3 of the 3 questions. The schedule for technically correct and complete responses to these questions is provided below.

Question #	Response Date
RAI 479 — 06.02.01-102	June 15, 2011
RAI 479 — 06.02.04-11	June 15, 2011
RAI 479 — 06.02.04-12	June 15, 2011

Sincerely,

Russ Wells
U.S. EPR Design Certification Licensing Manager
AREVA NP, Inc.
3315 Old Forest Road, P.O. Box 10935

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Lynchburg, VA 24506-0935
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Russell.Wells@Areva.com

From: Tesfaye, Getachew [<mailto:Getachew.Tesfaye@nrc.gov>]
Sent: Monday, March 07, 2011 8:29 PM
To: ZZ-DL-A-USEPR-DL
Cc: Jensen, Walton; Grady, Anne-Marie; Jackson, Christopher; McKirgan, John; Carneal, Jason; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 479 (5568_5610_5612), FSAR Ch. 6

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on March 4, 2011, and on March 7, 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: 3265

Mail Envelope Properties (1F1CC1BBDC66B842A46CAC03D6B1CD4104A27FE4)

Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No. 479
(5568_5610_5612), FSAR Ch. 6, Question 06.02.01-102, Part 2
Sent Date: 7/21/2011 6:26:03 PM
Received Date: 7/21/2011 6:26:07 PM
From: WELLS Russell (AREVA)

Created By: Russell.Wells@areva.com

Recipients:

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Tracking Status: None
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Tracking Status: None

Post Office: AUSLYNCMX02.adom.ad.corp

Files	Size	Date & Time
MESSAGE	4429	7/21/2011 6:26:07 PM
RAI 479 Response 6.2.1-102 Part 2 US EPR DC - Draft.pdf		243501

Options

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

Response to

Request for Additional Information No. 479

3/07/2011

U. S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 06.02.01 - Containment Functional Design

SRP Section: 06.02.04 - Containment Isolation System

Application Section: 06.02

**QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects)
(SPCV)**

DRAFT

Question 06.02.01-102:

These questions relate to the discussions at the February 15 and 16 Containment Audit for US-EPR.

1. The staff observed discrepancies in the compartment volumes in various data sets submitted by AREVA. See RAI 437 Q 06.02.01-99 and RAI 466 Q 06.02.01.02-10. The staff understands that the discrepancies are the result of compartment boundaries being independently determined by different analysts. The compartment size may affect the pressures obtained in subcompartment analyses. Provide an ITAAC by which the compartment volumes used in subcompartment analyses will be verified for the as-built plant so that the results from the FSAR analyses can be concluded to be valid for the as-built plant.
2. RHR heat exchanger fouling: The staff noted that assurance is needed that the heat transfer capabilities of the RHR heat exchangers are not degraded as the plant ages to levels below those assumed in the safety analyses. Tech Spec surveillance requirements are one means to provide the required assurance. AREVA has indicated that the Chapter 5 maintenance program would be adequate. The staff requires that AREVA provide a full and complete justification that the Chapter 5 maintenance program will be sufficient to identify any heat transfer degradation within the heat exchangers below that which was assumed in the safety analyses for reactor heat removal and the containment heat removal over the life of the plant and a justification for why Tech Specs are not appropriate.

Response to Question 06.02.01-102, Part 2:

A response to Part 1. of this question will be provided separately.

Surveillance Requirement (SR) 3.5.2.8 and associated Bases will be added to the Technical Specifications in U.S. EPR FSAR Tier 2, Chapter 16. SR 3.5.2.8 will provide for periodic verification of the heat removal capability of the Low Head Safety Injection (LHSI) system heat exchangers.

FSAR Impact:

U.S. EPR FSAR Tier 2, Chapter 16, Section 3.5.2 and associated Bases will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

DRAFT

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.2.2	Verify ECCS piping is full of water.	31 days
SR 3.5.2.3	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.4	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.5.2.5	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.5.2.6	Verify, by visual inspection, each ECCS train suction inlet from the In-Containment Refueling Water Storage Tank is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	24 months
<u>SR 3.5.2.7</u>	<u>Verify that the flow split for hot leg injection is $\geq 75\%$ of LHSI flow.</u>	<u>24 months</u>
<u>SR 3.5.2.8</u>	<u>Verify that the containment heat removal capability is sufficient to maintain post-accident conditions within design limits.</u>	<u>24 months on a STAGGERED TEST BASIS</u>

06.02.01-102(2)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.2.7

This Surveillance verifies that the LHSI flow split between the hot leg and the cold leg when in the hot leg injection mode remains consistent with analysis assumptions. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage.

06.02.01-102(2)



SR 3.5.2.8

Verifying the containment heat removal capability provides assurance that the containment heat removal systems are capable of maintaining containment temperature below design limits following an accident. This test verifies the heat removal capability of the Low Head Safety Injection (LHSI) heat exchangers. The Frequency of 24 months on a STAGGERED TEST BASIS for each LHSI heat exchanger was developed considering the known reliability of closed cycle heat exchangers and other testing performed at shorter intervals that is intended to identify the possible loss of heat removal capability.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 35.
 2. 10 CFR 50.46.
 3. FSAR Section 6.2.
 4. FSAR Chapter 15.
 5. NRC Memorandum to V. Stello, Jr., from R.L. Baer, "Recommended Interim Revisions to LCOs for ECCS Components," December 1, 1975.
 6. ASME Code for Operation and Maintenance of Nuclear Power Plants.
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