

ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Thursday, August 11, 2011 11:04 AM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (AREVA); DELANO Karen (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); WELLS Russell (AREVA)
Subject: Response to U.S. EPR Design Certification Application RAI No. 458, FSAR Ch. 3, Supplement 9
Attachments: RAI 458 Supplement 9 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 458 on December 6, 2010. The schedule for a technically correct and complete response to RAI No. 458 was revised in Supplement 1 and Supplement 2, submitted on March 21, 2011 and April 19, 2011, respectively, to allow additional time for AREVA NP to interact with the NRC. AREVA NP provided technically correct and complete FINAL responses to 3 of the 12 questions with Supplement 3 on May 26, 2011, as committed. AREVA NP provided a revised schedule for a technically correct and complete response to the remaining 9 questions with Supplement 4 on June 7, 2011. AREVA NP provided technically correct and complete FINAL responses to 2 of the 9 questions with Supplement 5 on June 30, 2011, as committed. AREVA NP provided technically correct and complete FINAL responses to 3 of the remaining 7 questions with Supplement 6 on July 8, 2011, as committed. AREVA NP provided a revised schedule for a technically correct and complete response to the remaining 4 questions with Supplement 7 on July 12, 2011. AREVA NP provided a technically correct and complete response to 3 of the 4 remaining questions with Supplement 8 on July 26, 2011.

The attached file, "RAI 458 Supplement 9 Response US EPR DC.pdf" provides a technically correct and complete FINAL response to the remaining question, as committed.

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 458, Question 03.09.02-152.

The following table indicates the respective pages in the response document, "RAI 458 Supplement 9 Response US EPR DC.pdf", which provide the response to the remaining question.

Question #	Start Page	End Page
RAI 458 — 03.09.02-152	2	2

This concludes the formal AREVA NP response to RAI 458, 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: WELLS Russell (RS/NB)
Sent: Tuesday, July 26, 2011 5:17 PM

To: Tesfaye, Getachew

Cc: WILLIFORD Dennis (RS/NB); BURGESS John (EP/PE); THALLAPRAGADA Pavan (EP/PE); 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. 458, FSAR Ch. 3, Supplement 8

Getachew,

AREVA NP Inc. letter NRC 11:077 dated July 26, 2011 provides a technically correct and complete response to 3 of the 4 remaining questions for RAI 458. AREVA NP considers some of the material contained in the response to be proprietary information. As required by 10 CFR 2.390(b), an affidavit is provided to support the withholding of the proprietary information from public disclosure. Proprietary and non-proprietary versions of the enclosure to this letter are provided separately.

The following table indicates the respective pages in the enclosed response that contain AREVA NP's final response to the subject questions.

Question #	Start Page	End Page
RAI 458 — 03.09.02-147	2	3
RAI 458 — 03.09.02-149	4	8
RAI 458 — 03.09.02-151	9	9

Also enclosed are affected pages of ANP-10306P, "Comprehensive Vibration Assessment Program for U.S. EPR Reactor Internals Technical Report," Revision 0 in redline-strikeout format which support the response to RAI 458 Questions 03.09.02-147, 03.09.02-149, and 03.09.02-151.

The schedule for a technically correct and complete response to the remaining question is unchanged and is provided below.

Question #	Response Date
RAI 458 — 03.09.02-152	August 12, 2011

Russ Wells 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: WILLIFORD Dennis (RS/NB)

Sent: Tuesday, July 12, 2011 3:31 PM

To: Tesfaye, Getachew

Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WELLS Russell (RS/NB)

Subject: Response to U.S. EPR Design Certification Application RAI No. 458, FSAR Ch. 3, Supplement 7

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 458 on December 6, 2010. The schedule for a technically correct and complete response to RAI No. 458 was revised in Supplement 1 and Supplement 2, submitted on March 21, 2011 and April 19, 2011, respectively, to allow additional time for AREVA NP to interact with the NRC. AREVA NP provided technically correct and complete FINAL responses to 3 of the 12 questions with Supplement 3 on May 26, 2011, as committed. AREVA NP provided a revised schedule for a technically correct and complete response to the remaining 9 questions with Supplement 4 on June 7, 2011. AREVA NP provided technically correct and complete FINAL responses to 2 of the 9 questions with Supplement 5 on June 30, 2011, as committed. AREVA NP provided technically correct and complete FINAL responses to 3 of the remaining 7 questions with Supplement 6 on July 8, 2011, as committed.

The schedule for a technically correct and complete response to the remaining 4 questions is being revised as provided below.

Question #	Response Date
RAI 458 — 03.09.02-147	August 12, 2011
RAI 458 — 03.09.02-149	August 12, 2011
RAI 458 — 03.09.02-151	August 12, 2011
RAI 458 — 03.09.02-152	August 12, 2011

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, July 08, 2011 7:50 AM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WELLS Russell (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 458, FSAR Ch. 3, Supplement 6

Getachew,

AREVA NP Inc. letter NRC:11:074 dated July 7, 2011 provides a technically correct and complete final response to 3 of the 7 remaining questions in RAI 458. AREVA NP considers some of the material contained in the response to be proprietary information. As required by 10 CFR 2.390(b), an affidavit is provided to support the withholding of the proprietary information from public disclosure. Proprietary and non-proprietary versions of the enclosure to this letter are provided separately.

The following table indicates the respective pages in the enclosure that contain AREVA NP's final response to the subject questions.

Question #	Start Page	End Page
RAI 458 — 03.09.02-150	2	4

RAI 458 — 03.09.02-153	5	6
RAI 458 — 03.09.02-154	7	8

The schedule for a technically correct and complete response to the remaining 4 questions is unchanged as provided below.

Question #	Response Date
RAI 458 — 03.09.02-147	July 13, 2011
RAI 458 — 03.09.02-149	July 13, 2011
RAI 458 — 03.09.02-151	July 13, 2011
RAI 458 — 03.09.02-152	July 13, 2011

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: Thursday, June 30, 2011 4:12 PM
To: 'Tefaye, Getachew'
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WELLS Russell (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 458, FSAR Ch. 3, Supplement 5

Getachew,

AREVA NP Inc. letter NRC:11:066 dated June 30, 2011 provides a technically correct and complete final response to 2 of the 9 remaining questions in RAI 458. AREVA NP considers some of the material contained in the response to be proprietary information. As required by 10 CFR 2.390(b), an affidavit is provided to support the withholding of the proprietary information from public disclosure. Proprietary and non-proprietary versions of the enclosure to this letter are provided separately.

The following table indicates the respective pages in the enclosure that contain AREVA NP's final response to the subject questions.

Question #	Start Page	End Page
RAI 458 — 03.09.02-146	2	2
RAI 458 — 03.09.02-148	3	3

Appended to the enclosed response file are affected pages of ANP-10306P, "Comprehensive Vibration Assessment Program for U.S. EPR Reactor Internals Technical Report," Revision 0 in redline-strikeout format which support the response to RA 458 Question 03.09.02-148.

The schedule for a technically correct and complete response to the remaining 7 questions is unchanged as provided below.

Question #	Response Date
RAI 458 — 03.09.02-147	July 13, 2011

RAI 458 — 03.09.02-149	July 13, 2011
RAI 458 — 03.09.02-150	July 13, 2011
RAI 458 — 03.09.02-151	July 13, 2011
RAI 458 — 03.09.02-152	July 13, 2011
RAI 458 — 03.09.02-153	July 13, 2011
RAI 458 — 03.09.02-154	July 13, 2011

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, June 07, 2011 8:41 AM
To: 'Tsfaye, Getachew'
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); HAMMOND Philip (RS/PT)
Subject: Response to U.S. EPR Design Certification Application RAI No. 458, FSAR Ch. 3, Supplement 4

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 458 on December 6, 2010. The schedule for a technically correct and complete response to RAI No. 458 was revised in Supplement 1 and Supplement 2, submitted on March 21, 2011 and April 19, 2011, respectively, to allow additional time for AREVA NP to interact with the NRC. AREVA NP provided technically correct and complete FINAL responses to 3 of the 12 questions with Supplement 3 on May 26, 2011, as committed.

The schedule for a technically correct and complete response to the remaining 9 questions is being revised. The revised schedule is provided below.

Question #	Response Date
RAI 458 — 03.09.02-146	July 13, 2011
RAI 458 — 03.09.02-147	July 13, 2011
RAI 458 — 03.09.02-148	July 13, 2011
RAI 458 — 03.09.02-149	July 13, 2011
RAI 458 — 03.09.02-150	July 13, 2011
RAI 458 — 03.09.02-151	July 13, 2011
RAI 458 — 03.09.02-152	July 13, 2011
RAI 458 — 03.09.02-153	July 13, 2011
RAI 458 — 03.09.02-154	July 13, 2011

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:** Thursday, May 26, 2011 8:58 AM**To:** 'Tesfaye, Getachew'**Cc:** BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); HAMMOND Philip (RS/PT)**Subject:** Response to U.S. EPR Design Certification Application RAI No. 458, FSAR Ch. 3, Supplement 3

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 458 on December 6, 2010. The schedule for a technically correct and complete response to RAI No. 458 was revised in Supplement 1 and Supplement 2, submitted on March 21, 2011 and April 19, 2011 respectively, to allow additional time for AREVA NP to interact with the NRC.

The attached file, "RAI 458 Supplement 3 Response US EPR DC.pdf" provides a technically correct and complete FINAL response to 3 of the 12 questions, as committed. The following table indicates the respective pages in the response document, "RAI 458 Supplement 3 Response US EPR DC.pdf", which provide the responses to the 3 questions.

Question #	Start Page	End Page
RAI 458 — 03.09.01-13	2	6
RAI 458 — 03.09.01-14	7	10
RAI 458 — 03.09.01-15	11	17

The schedule for a technically correct and complete response to the remaining 9 questions is unchanged and is provided below.

Question #	Response Date
RAI 458 — 03.09.02-146	June 15, 2011
RAI 458 — 03.09.02-147	June 15, 2011
RAI 458 — 03.09.02-148	June 15, 2011
RAI 458 — 03.09.02-149	June 15, 2011
RAI 458 — 03.09.02-150	June 15, 2011
RAI 458 — 03.09.02-151	June 15, 2011
RAI 458 — 03.09.02-152	June 15, 2011
RAI 458 — 03.09.02-153	June 15, 2011
RAI 458 — 03.09.02-154	June 15, 2011

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: WELLS Russell (RS/NB)
Sent: Tuesday, April 19, 2011 4:25 PM
To: 'Tefaye, Getachew'
Cc: HAMMOND Philip (RS/PT); 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. 458, FSAR Ch. 3, Supplement 2

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 458 on December 6, 2010. The schedule for a technically correct and complete response to RAI No. 458 was revised with Supplement 1 on March 21, 2011.

The schedule for a technically correct and complete response to RAI No. 458 is revised to allow additional time for AREVA NP to interact with the NRC and is provided below.

Question #	Response Date
RAI 458 — 03.09.01-13	June 15, 2011
RAI 458 — 03.09.01-14	June 15, 2011
RAI 458 — 03.09.01-15	June 15, 2011
RAI 458 — 03.09.02-146	June 15, 2011
RAI 458 — 03.09.02-147	June 15, 2011
RAI 458 — 03.09.02-148	June 15, 2011
RAI 458 — 03.09.02-149	June 15, 2011
RAI 458 — 03.09.02-150	June 15, 2011
RAI 458 — 03.09.02-151	June 15, 2011
RAI 458 — 03.09.02-152	June 15, 2011
RAI 458 — 03.09.02-153	June 15, 2011
RAI 458 — 03.09.02-154	June 15, 2011

Sincerely,

Russ Wells
U.S. EPR Design Certification Licensing Manager
AREVA NP, Inc.
3315 Old Forest Road, P.O. Box 10935
Mail Stop OF-57
Lynchburg, VA 24506-0935
Phone: 434-832-3884 (work)
434-942-6375 (cell)
Fax: 434-382-3884
Russell.Wells@Areva.com

From: WELLS Russell (RS/NB)
Sent: Monday, March 21, 2011 10:14 AM

To: 'Tesfaye, Getachew'

Cc: HAMMOND Philip (RS/PT); 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. 458, FSAR Ch. 3, Supplement 1

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 458 on December 6, 2010.

The schedule for a technically correct and complete response to RAI No. 458 is revised to allow additional time for AREVA NP to interact with the NRC and is provided below.

Question #	Response Date
RAI 458 — 03.09.01-13	May 5, 2011
RAI 458 — 03.09.01-14	May 5, 2011
RAI 458 — 03.09.01-15	May 5, 2011
RAI 458 — 03.09.02-146	May 5, 2011
RAI 458 — 03.09.02-147	May 5, 2011
RAI 458 — 03.09.02-148	May 5, 2011
RAI 458 — 03.09.02-149	May 5, 2011
RAI 458 — 03.09.02-150	May 5, 2011
RAI 458 — 03.09.02-151	May 5, 2011
RAI 458 — 03.09.02-152	May 5, 2011
RAI 458 — 03.09.02-153	May 5, 2011
RAI 458 — 03.09.02-154	May 5, 2011

Sincerely,

Russ Wells

U.S. EPR Design Certification Licensing Manager

AREVA NP, Inc.

3315 Old Forest Road, P.O. Box 10935

Mail Stop OF-57

Lynchburg, VA 24506-0935

Phone: 434-832-3884 (work)

434-942-6375 (cell)

Fax: 434-382-3884

Russell.Wells@Areva.com

From: BRYAN Martin (External RS/NB)

Sent: Monday, December 06, 2010 4:54 PM

To: 'Tesfaye, Getachew'

Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); HAMMOND Philip (RS/PT)

Subject: Response to U.S. EPR Design Certification Application RAI No. 458, FSAR Ch. 3

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 458 Response US EPR DC.pdf," provides a schedule since a technically correct and complete response to the RAI 458 questions is not provided.

The following table indicates the respective pages in the response document, "RAI 458 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 458 — 03.09.01-13	2	2
RAI 458 — 03.09.01-14	3	3
RAI 458 — 03.09.01-15	4	4
RAI 458 — 03.09.02-146	5	5
RAI 458 — 03.09.02-147	6	6
RAI 458 — 03.09.02-148	7	7
RAI 458 — 03.09.02-149	8	8
RAI 458 — 03.09.02-150	9	9
RAI 458 — 03.09.02-151	10	10
RAI 458 — 03.09.02-152	11	11
RAI 458 — 03.09.02-153	12	12
RAI 458 — 03.09.02-154	13	13

A complete answer is not provided for 12 of the 12 questions. The schedule for a technically correct and complete response to these questions is provided below.

Question #	Response Date
RAI 458 — 03.09.01-13	March 30, 2011
RAI 458 — 03.09.01-14	March 30, 2011
RAI 458 — 03.09.01-15	March 30, 2011
RAI 458 — 03.09.02-146	March 30, 2011
RAI 458 — 03.09.02-147	March 30, 2011
RAI 458 — 03.09.02-148	March 30, 2011
RAI 458 — 03.09.02-149	March 30, 2011
RAI 458 — 03.09.02-150	March 30, 2011
RAI 458 — 03.09.02-151	March 30, 2011
RAI 458 — 03.09.02-152	March 30, 2011
RAI 458 — 03.09.02-153	March 30, 2011
RAI 458 — 03.09.02-154	March 30, 2011

Sincerely,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
Tel: (434) 832-3016
702 561-3528 cell
Martin.Bryan.ext@areva.com

From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]

Sent: Friday, November 05, 2010 8:40 AM

To: ZZ-DL-A-USEPR-DL

Cc: Wu, Cheng-Ih; Wong, Yuken; Dixon-Herrity, Jennifer; Miernicki, Michael; Colaccino, Joseph; ArevaEPRDCPEm Resource

Subject: U.S. EPR Design Certification Application RAI No. 458 (5149,5152),FSAR Ch. 3

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on October 29, 2010, and on November 3, 2010, 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: 3321

Mail Envelope Properties (2FBE1051AEB2E748A0F98DF9EEE5A5D482D6AA)

Subject: Response to U.S. EPR Design Certification Application RAI No. 458, FSAR Ch.
3, Supplement 9
Sent Date: 8/11/2011 11:03:55 AM
Received Date: 8/11/2011 11:04:09 AM
From: WILLIFORD Dennis (AREVA)

Created By: Dennis.Williford@areva.com

Recipients:
"BENNETT Kathy (AREVA)" <Kathy.Bennett@areva.com>
Tracking Status: None
"DELANO Karen (AREVA)" <Karen.Delano@areva.com>
Tracking Status: None
"ROMINE Judy (AREVA)" <Judy.Romine@areva.com>
Tracking Status: None
"RYAN Tom (AREVA)" <Tom.Ryan@areva.com>
Tracking Status: None
"WELLS Russell (AREVA)" <Russell.Wells@areva.com>
Tracking Status: None
"Tsfaye, Getachew" <Getachew.Tsfaye@nrc.gov>
Tracking Status: None

Post Office: auscharm02.adom.ad.corp

Files	Size	Date & Time
MESSAGE	20518	8/11/2011 11:04:09 AM
RAI 458 Supplement 9 Response US EPR DC.pdf		94951

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

Response to

**Request for Additional Information No. 458(5149, 5152), Revision 0,
Supplement 9**

11/05/2010

U.S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 03.09.01 - Special Topics for Mechanical Components

**SRP Section: 03.09.02 - Dynamic Testing and Analysis of Systems Structures and
Components**

Application Section: 3.9

QUESTIONS for Engineering Mechanics Branch 1 (AP1000/EPR Projects) (EMB1)

**QUESTIONS for Engineering Mechanics Branch 2 (ESBWR/ABWR Projects)
(EMB2)**

Question 03.09.02-152:

Provide the acoustic frequencies for the various volumes in the RPV, the RSG and the attached piping for inclusion in the respective sections of the CVAP and compare these resonant frequencies to the vortex shedding frequencies for appropriate flow rates within the standard operating range of the reactor through full power to verify that the pressure disturbances generated by vortex shedding will not excite an acoustic resonance. Revise the CVAP to include the requested information.

Response to Question 03.09.02-152:

Justification for not performing an analysis to determine the acoustic frequencies of the reactor pressure vessel (RPV), re-circulating steam generator (RSG), and the attached piping volumes is provided in the Response to RAI 407 Question 03.09.02-76(e) and RAI 422, Questions 03.09.02-99, 03.09.02-100, 03.09.02-101, 03.09.02-151.

In accordance with the guidance of Regulatory Guide 1.20, Revision 3, AREVA NP Inc. will compute the acoustic frequencies of the RCS volume. The acoustic frequencies will be compared with the vortex-shedding frequencies of the applicable structures within the RPV; and, also, the shaft and blade passing frequencies of the reactor coolant pump (RCP) to determine if resonant acoustic modes exist within the RCS that could amplify the pressure fluctuations associated with these sources of flow excitation. If it is determined that a resonant condition does exist, an analysis will be performed to demonstrate that the RCS meets the acceptance criteria provided by ASME Section III. A new ITAAC will be added to U.S. EPR FSAR Tier 1, Table 2.2.1-5, Item 3.8, for this activity.

FSAR Impact:


U.S. EPR FSAR Tier 1, Table 2.2.1-5, will be revised as described in the response and indicated on the enclosed markup.

Technical Report Impact:

ANP-10306P, "Comprehensive Vibration Assessment Program for U.S. EPR Reactor Internals Technical Report," Revision 0, will not be changed as a result of this question.

U.S. EPR Final Safety Analysis Report Markups

Table 2.2.1-5—Reactor Coolant System ITAAC (11 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.8	The RPV internals will withstand the effects of flow-induced vibration.	<p>a. Tests and analyses of test results will be performed on a plant containing RPV internals representative of the U.S. EPR.</p> <p>b. An inspection will be performed after hot functional testing.</p>	<p>a. A comprehensive vibration assessment program report exists and concludes that RPV internals have no observable damage, no loose parts, and stress is within ASME Code limits.</p> <p>b. Inspections show that the RPV internals have no observable damage or loose parts.</p>
		c. An analysis will be performed on the effects of the RCP acoustic frequencies on RPV internals.	c. An analysis of the effects of RCP acoustic frequencies on RPV internals exists and concludes that RPV internals stress is within ASME code limits.
	<div style="border: 1px solid red; padding: 5px; display: inline-block;"> RAI 458 Q. 152 </div> 	<u>d. An analysis will be performed of the acoustic frequencies of the RCS volume to determine their loading impact to the RCS components when considering sources of flow excitation created by vortex-shedding frequencies of the applicable structures and blade passing frequencies of the RCP.</u>	<u>d. An analysis of the acoustic frequencies and loading exists and concludes the RCS stress is within the ASME Code Section III limits.</u>
3.9	The RCS allows movement of the components for thermal expansion and contraction.	A test of the RCS will be performed.	The measured RCS gaps meet the specification requirements for the necessary component supports.
3.10	Deleted.	Deleted.	Deleted.
3.11	Deleted.	Deleted.	Deleted.
3.12	Deleted.	Deleted.	Deleted.
3.13	Deleted.	Deleted.	Deleted.