# ArevaEPRDCPEm Resource

From:	WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent:	Tuesday, September 13, 2011 2:52 PM
То:	Tesfaye, Getachew
Cc:	BENNETT Kathy (AREVA); DELANO Karen (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA)
Subject:	Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 24
Attachments:	RAI 371 Supplement 24 Response US EPR DC.pdf

#### Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments, AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to guestion 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 15 on April 1, 2011, to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Questions 03.07.02-67 and 03.07.02-69. AREVA NP submitted Supplement 17 on May 2, 2011, to provide a revised schedule for Question 03.07.02-68. On May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 19 on June 17, 2011, to provide a final response to Question 03.07.02-68 and a revised schedule for Question 03.07.01-28. On June 23, 2011, AREVA NP submitted Supplement 20 to provide a final response to Question 03.07.02-69. On June 24, 2011, AREVA NP submitted Supplement 20 and Supplement 21 to provide a final response to Question 03.07.02-69 and INTERIM responses to Questions 03.07.02-66 and 03.07.02-67, respectively. On July 6, 2011, AREVA NP submitted Supplement 22 to provide a final response to Question 03.07.01-28. On July 29, 2011, AREVA NP submitted Supplement 23 to provide a revised final response to Question 03.07.02-68 to address NRC comments.

The attached file, "RAI 371 Supplement 24 Response US EPR DC.pdf" provides a technically correct and complete final response to Question 03.07.02-67, as committed. Appended to this file are the affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 371 Question 03.07.02-67.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 24 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 371 — 03.07. 02-67	2	42

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

Question #	Interim Response Date	Response Date
RAI 371-03.07.02-66	July 29, 2010 (Actual) June 24, 2011 (Actual)	October 10, 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

Charlotte, NC 28262 Phone: 704-805-2223 Email: <u>Dennis.Williford@areva.com</u>

From: WELLS Russell (RS/NB)
Sent: Friday, July 29, 2011 4:59 PM
To: Tesfaye, Getachew
Cc: ROMINE Judy (RS/NB); LENTZ Tony (External RS/NB); WILLIFORD Dennis (RS/NB); BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); RYAN Tom (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 23

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to guestion 03.07.01-29. On October 4. 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 15 on April 1, 2011, to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Questions 03.07.02-67 and 03.07.02-69. AREVA NP submitted Supplement 17 on May 2, 2011, to provide a revised schedule for Question 03.07.02-68. On

May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 19 on June 17, 2011, to provide a final response to Question 03.07.02-68 and a revised schedule for Question 03.07.01-28. On June 23, 2011, AREVA NP submitted Supplement 20 to provide a final response to Question 03.07.02-69. On June 24, 2011, AREVA NP submitted Supplement 20 and Supplement 21 to provide a final response to Question 03.07.02-69 and INTERIM responses to Questions 03.07.02-67, respectively. On July 6, 2011, AREVA NP submitted Supplement 22 to provide a final response to Question 03.07.02-69.

The attached file, "RAI 371 Supplement 23 Response US EPR DC.pdf" provides a REVISED technically correct and final response to Question 03.07.02-68 to address NRC comments. Appended to this file are the affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 371 Question 03.07.02-68.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 23 Response US EPR DC.pdf," that contains AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 371 — 03.07. 02-68	2	22

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

Question #	Interim Response Date	Response Date
RAI 371-03.07.02-66	July 29, 2010 (Actual) June 24, 2011 (Actual)	October 10, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual) June 24, 2011 (Actual)	September 14, 2011

Sincerely,

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: Wednesday, July 06, 2011 9:26 AM
To: Tesfaye, Getachew
Cc: 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. 371, FSAR Ch. 3, Supplement 22

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8,

2010, to provide a revised date for submittal of a FINAL response to guestion 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4. 2010. AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to guestion 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 15 on April 1, 2011, to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Questions 03.07.02-67 and 03.07.02-69. AREVA NP submitted Supplement 17 on May 2, 2011, to provide a revised schedule for Question 03.07.02-68. On May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 19 on June 17, 2011, to provide a final response to Question 03.07.02-68 and a revised schedule for Question 03.07.01-28. On June 24, 2011, AREVA NP submitted Supplement 20 to provide a final response to Question 03.07.02-69. Supplement 21 was submitted also on June 24, 2011 to provide revised INTERIM responses to Questions 03.07.02-66 and 03.07.02-67 and a revised schedule for final responses to these 2 questions.

The attached file, "RAI 371 Supplement 22 Response US EPR DC.pdf" provides a technically correct and complete final response to Question 03.07.01-28. Appended to this file are the affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 371 Question 03.07.01-28.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 22 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 371 — 03.07.01-28	2	22

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

Question #	Interim Response Date	Response Date
RAI 371-03.07.02-66	July 29, 2010 (Actual)	October 10, 2011
	June 24, 2011 (Actual)	
RAI 371-03.07.02-67	July 29, 2010 (Actual)	September 14, 2011
	June 24, 2011 (Actual)	

```
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, June 24, 2011 9:40 AM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 21

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 15 on April 1, 2011, to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Questions 03.07.02-67 and 03.07.02-69. AREVA NP submitted Supplement 17 on May 2, 2011, to provide a revised schedule for Question 03.07.02-68. On May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 19 on June 17, 2011, to provide a final response to Question 03.07.02-68 and a revised schedule for Question 03.07.01-28. On June 24, 2011, AREVA NP submitted Supplement 20 to provide a final response to Question 03.07.02-69.

The attached file, "RAI 371 Supplement 21 Response US EPR DC - INTERIM.pdf" provides revised INTERIM responses to Question 03.07.02-66 and Question 03.07.02-67. Appended to this file are the affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 371 Question 03.07.02-66.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 21 Response US EPR DC - INTERIM.pdf," that contains AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 371 — 03.07.02-66	2	9
RAI 371 — 03.07.02-67	10	10

The schedule for final responses to Question 03.07.02-66 and Question 03.07.02-67 is being revised. The schedule for the remaining question is unchanged.

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	July 22, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual) June 24, 2011 (Actual)	October 10, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual) June 24, 2011 (Actual)	September 14, 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, June 24, 2011 9:08 AM
To: 'Tesfaye, Getachew'
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 20

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to guestion 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 15 on April 1, 2011, to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Questions 03.07.02-67 and 03.07.02-69. AREVA NP submitted Supplement 17 on May 2, 2011, to provide a revised schedule for Question 03.07.02-68. On May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-66.

AREVA NP submitted Supplement 19 on June 17, 2011, to provide a final response to Question 03.07.02-68 and a revised schedule for Question 03.07.01-28.

The attached file, "RAI 371 Supplement 20 Response US EPR DC.pdf" provides a technically correct, complete and final response to Question 03.07.02-69, as committed. Appended to this file are the affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 371 Question 03.07.02-69.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 20 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 371 — 03.07.02-69	2	31

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

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	July 22, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	July 8, 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: RYAN Tom (RS/NB)
Sent: Friday, June 17, 2011 3:36 PM
To: 'Tesfaye, Getachew'
Cc: CORNELL Veronica (External RS/NB); WILLIFORD Dennis (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. 371, FSAR Ch. 3, Supplement 19

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submitted of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On

November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 17 on May 2, 2011, to provide a revised schedule for Question 03.07.02-69. AREVA NP submitted Supplement 16 to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 17 on May 2, 2011, to provide a revised schedule for Question 03.07.02-67 and 03.07.02-68. On May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-68. On May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-68. On May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-68. On May 20, 2011, AREVA NP submitted Supplement 18 to provide a revised schedule for Question 03.07.02-68. On

The attached file, "RAI 371 Supplement 19 Response US EPR DC.pdf" provides a technically correct, complete and final response to Question 03.07.02-68, as committed. Appended to this file are the affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 371 Question 03.07.02-68.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 19 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 371 — 03.07.02-68	2	27

In addition, the schedule for Question 03.07.01-28 is being revised. The schedule for the remaining questions is unchanged.

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	July 22, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual) March 21, 2011	July 8, 2011
	March 8, 2011 (Actual)	

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: Friday, May 20, 2011 7:43 AM
To: Tesfaye, Getachew
Cc: CORNELL Veronica (External RS/NB); WILLIFORD Dennis (RS/NB); 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. 371, FSAR Ch. 3, Supplement 18

# Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8. 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to guestion 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to guestions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 15 on April 1, 2011, to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Questions 03.07.02-67 and 03.07.02-69. AREVA NP submitted Supplement 17 on May 2, 2011, to provide a revised schedule for Question 03.07.02-68.

The schedule for Question 03.07.02-66 is being revised. The schedule for the remaining questions is unchanged.

The schedule for the technically	/ correct and	l complete	e responses t	o th	e remaining	questions	is provided	below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	June 21, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual)	July 8, 2011
	March 21, 2011	
	March 8, 2011 (Actual)	

# 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 From: WELLS Russell (RS/NB)
Sent: Monday, May 02, 2011 10:30 AM
To: Tesfaye, Getachew
Cc: CORNELL Veronica (External RS/NB); 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. 371, FSAR Ch. 3, Supplement 17

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to guestion 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to guestions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66, AREVA NP submitted Supplement 15 on April 1, 2011, to provide a revised schedule for Question 03.07.02-68. On April 27, 2011, AREVA NP submitted Supplement 16 to provide a revised schedule for Questions 03.07.02-67 and 03.07.02-69.

Due to changes in the schedule for FSAR Sections 3.7 and 3.8 as discussed with NRC, the schedule for Question 03.07.02-68 is being revised. The schedule for the remaining questions is unchanged.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	June 21, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	May 26, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual)	July 8, 2011
	March 21, 2011	
	March 8, 2011 (Actual)	

The schedule for the technically correct and complete responses to the remaining questions is provided below.

# 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 <u>Russell.Wells@Areva.com</u>

#### From: WELLS Russell (RS/NB)

Sent: Wednesday, April 27, 2011 8:25 AM
To: 'Tesfaye, Getachew'
Cc: CORNELL Veronica (External RS/NB); 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. 371, FSAR Ch. 3, Supplement 16

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8. 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to guestion 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66. AREVA NP submitted Supplement 15 on April 1, 2011, to provide a revised schedule for Question 03.07.02-68.

The schedule for Questions 03.07.02-67 and 03.07.02-69 is being revised. The schedule for the remaining questions is unchanged.

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	June 21, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	May 26, 2011

RAI 371-03.07.02-67	July 29, 2010 (Actual)	July 8, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	May 26, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual) March 21, 2011	July 8, 2011
	March 8, 2011 (Actual)	

### 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 <u>Russell.Wells@Areva.com</u>

From: WELLS Russell (RS/NB)
Sent: Friday, April 01, 2011 2:23 PM
To: 'Tesfaye, Getachew'
Cc: CORNELL Veronica (External RS/NB); 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. 371, FSAR Ch. 3, Supplement 15

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for guestion 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to guestion 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to guestions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69. On March 24, 2011, AREVA NP submitted Supplement 14 to provide a revised schedule for Question 03.07.02-66.

The schedule for Question 03.07.02-68 is being revised to allow AREVA NP additional time to address NRC comments. The schedule for the remaining questions is unchanged.

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	June 21, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	May 26, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	April 28, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	May 26, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual) March 21, 2011 March 8, 2011 (Actual)	April 28, 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: Thursday, March 24, 2011 1:11 PM
To: 'Tesfaye, Getachew'
Cc: CORNELL Veronica (External RS/NB); 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. 371, FSAR Ch. 3, Supplement 14

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to guestion 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to guestions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for

Question 03.07.01-28 and Question 03.07.02-69. AREVA NP submitted Supplement 13 on March 8, 2011, to provide an INTERIM response to Question 03.07.02-69.

The schedule for Question 03.07.02-66 is being revised. In addition, the schedule for Question 03.07.01-28 is being revised to allow additional time for AREVA NP to address NRC comments. The schedule for the remaining questions is unchanged.

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	June 21, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	May 26, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	April 28, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	April 5, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual) March 21, 2011 March 8, 2011 (Actual)	April 28, 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 <u>Russell.Wells@Areva.com</u>

From: WELLS Russell (RS/NB)
Sent: Tuesday, March 08, 2011 3:45 PM
To: 'Tesfaye, Getachew'
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 13

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submitted of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On

November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66. On February 28, 2011, AREVA NP submitted Supplement 12 to provide a revised schedule for Question 03.07.01-28 and Question 03.07.02-69.

The attached file, "RAI 371 Supplement 13 Response US EPR DC-INTERIM.pdf" provides a technically correct INTERIM response to the Question 03.07.02-69, as committed.

The following table indicates the page in the response document, "RAI 371 Supplement 13 Response US EPR DC-INTERIM.pdf" that contains AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 371 – 03.07.02-69	2	32

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	March 24, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	April 8, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	April 28, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	April 5, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual)	April 28, 2011
	March 21, 2011	
	March 8, 2011 (Actual)	

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, February 28, 2011 5:09 PM
To: 'Tesfaye, Getachew'
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 12

### Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule

in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to question 03.07.02-69. AREVA NP submitted Supplement 11 to the response on February 11, 2011 to provide a revised schedule for a response to question 03.07.02-66.

The schedule for the FINAL response to Question 03.07.01-28 is being revised to allow additional time for AREVA NP to interact with the NRC. In addition, the schedule for the INTERIM response to Question 03.07.02-69 is being revised to allow additional time for AREVA NP to address NRC comments. The schedule for the remaining questions is unchanged.

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	March 24, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	April 8, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	April 28, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	April 5, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual)	April 28, 2011
	March 21 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 <u>Russell.Wells@Areva.com</u>

From: BRYAN Martin (External RS/NB)
Sent: Friday, February 11, 2011 1:55 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 11

# Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28. On January 20, 2011, AREVA NP submitted Supplement 10 to provide a revised schedule for a response to questions 03.07.02-67, 03.07.02-68, and 03.07.02-69.

The schedule for Question 03.07.02-66 has changed. The schedule for the remaining questions is unchanged

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	February 28, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	April 8, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	April 28, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	April 5, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual)	April 28, 2011
	February 28, 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: BRYAN Martin (External RS/NB)
Sent: Thursday, January 20, 2011 6:53 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 10

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule

in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.02-69. On November 11, 2010, AREVA NP submitted Supplement 9 to provide a revised schedule for a response to question 03.07.01-28.

The schedule for the responses to Question 03.07.02-67 and Question 03.07.02-68 is being revised to allow additional time for AREVA NP to address NRC comments. The schedule for the response to Question 03.07.02-69 is also being revised to allow additional time for AREVA NP to prepare and submit a revised INTERIM response. The schedule for the remaining questions is unchanged

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	February 28, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	April 28, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	April 5, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual)	April 28, 2011
	February 28, 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: BRYAN Martin (External RS/NB)
Sent: Thursday, November 11, 2010 11:24 AM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 9

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to

address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29. On October 18, 2010, AREVA NP submitted Supplement 8 to provide an INTERIM response to question 03.07.02-69.

The schedule for the response to Question 03.07.01-28 is being revised to allow additional time for AREVA NP to address NRC comments. The schedule for the remaining questions is unchanged

The schedule for the technically correct and complete responses to the remaining questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	February 28, 2011
RAI 371-03.07.02-66	July 29, 2010 (Actual)	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual)	January 20, 2011

Sincerely,

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

From: BRYAN Martin (External RS/NB)
Sent: Monday, October 18, 2010 4:30 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 8

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submitted of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29. On October 4, 2010, AREVA NP submitted Supplement 7 to provide a FINAL response to question 03.07.01-29.

The attached file, "RAI 371 Supplement 8 Response US EPR DC-INTERIM.pdf" provides a technically correct and complete INTERIM response to question 03.07.02-69, as committed.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 8 Response US EPR DC-INTERIM.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 371 — 03.07.02-69	2	4

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

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	November 12, 2010
RAI 371-03.07.02-66	July 29, 2010 (Actual)	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-69	October 18, 2010 (Actual)	January 20, 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: BRYAN Martin (External RS/NB)
Sent: Monday, October 04, 2010 4:57 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 7

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to questions 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72. On September 9, 2010, AREVA NP submitted Supplement 6 to provide a revised schedule for a FINAL response to question 03.07.01-29.

The attached file, "RAI 371 Supplement 7 Response US EPR DC.pdf" provides technically correct and complete FINAL response to question 03.07.01-29, as committed.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 7 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 371 — 03.07.01-29	2	5

The schedule for an interim response and the technically correct and complete responses to the remaining questions is unchanged and is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	November 12, 2010
RAI 371-03.07.02-66	July 29, 2010 (Actual)	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-69	October 18, 2010	January 20, 2011

Sincerely,

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

From: BRYAN Martin (External RS/NB)
Sent: Thursday, September 09, 2010 12:44 PM
To: Tesfaye, Getachew
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 6

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submitted Supplement 4 to the response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to question 03.07.02-66 through question 03.07.02-68. AREVA NP submitted Supplement 5 to the response on August 31, 2010, to provide technically correct and complete FINAL responses to questions 03.07.02-70 through 03.07.02-72.

The schedule for the FINAL response to Question 03.07.01-29 is being revised to allow time for AREVA NP to address NRC comments. The schedule for the remaining questions is unchanged.

The schedule for a technically correct and complete interim response and responses to the following questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	November 12, 2010
RAI 371-03.07.01-29	N/A	October 5, 2010
RAI 371-03.07.02-66	July 29, 2010 (Actual)	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-69	October 18, 2010	January 20, 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: BRYAN Martin (External RS/NB)
Sent: Tuesday, August 31, 2010 4:55 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); CORNELL Veronica (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 5

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments. AREVA NP submitted Supplement 4 to the response on July 29, 2010, to provide INTERIM responses to question 03.07.02-66 through question 03.07.02-68.

The attached file, "RAI 371 Supplement 5 Response US EPR DC.pdf" provides technically correct and complete FINAL responses to 3 of the remaining 9 questions, as committed.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 5 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 371 — 03.07.02-70	2	3
RAI 371 — 03.07.02-71	4	10
RAI 371 — 03.07.02-72	11	11

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

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	November 12, 2010

RAI 371-03.07.01-29	N/A	September 17, 2010
RAI 371-03.07.02-66	July 29, 2010 (Actual)	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-69	October 18, 2010	January 20, 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: BRYAN Martin (EXT)
Sent: Thursday, July 29, 2010 8:08 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen V (AREVA NP INC); ROMINE Judy (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); VAN NOY Mark (EXT); CORNELL Veronica (EXT)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 4 - Interim

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a revised schedule for question 03.07.01-29. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities. AREVA NP provided Supplement 3 to the response on July 8, 2010, to provide a revised date for submittal of a FINAL response to question 03.07.01-29 to allow time to address NRC comments.

The attached file, "RAI 371 Supplement 4 Response US EPR DC.pdf" provides technically correct and complete INTERIM responses to 3 of the remaining 10 questions, as committed.

The following table indicates the respective pages in the response document, "RAI 371 Supplement 4 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 371 — 03.07.02-66	2	2
RAI 371 — 03.07.02-67	3	3
RAI 371 — 03.07.02-68	4	8

The schedule for an interim response and the technically correct and complete response to these questions is unchanged and is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	November 12, 2010
RAI 371-03.07.01-29	N/A	September 17, 2010

RAI 371-03.07.02-66	July 29, 2010 (Actual)	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-68	July 29, 2010 (Actual)	January 20, 2011
RAI 371-03.07.02-69	October 18, 2010	January 20, 2011
RAI 371-03.07.02-70	N/A	September 3, 2010
RAI 371-03.07.02-71	N/A	September 3, 2010
RAI 371-03.07.02-72	N/A	September 3, 2010

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: BRYAN Martin (EXT)
Sent: Thursday, July 08, 2010 4:02 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen V (AREVA NP INC); ROMINE Judy (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); VAN NOY Mark (EXT); CORNELL Veronica (EXT)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 3

### Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to the 9 questions of RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 on June 7, 2010, to provide a revised date for 1 of the questions (03.07.01-29) on June 7, 2010. On June 24, 2010, AREVA provided a revised response schedule in Supplement 2 for the other 8 questions based on the information presented at the June 9, 2010 public meeting on civil/structural replanning activities.

To provide for further interaction with the NRC on the response for question 03.07.01-29, a revised schedule is provided below. Dates for the other 8 questions remain unchanged.

The revised schedule for the technically correct and complete response to these questions has been changed and is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	November 12, 2010
RAI 371-03.07.01-29	N/A	September 17, 2010
RAI 371-03.07.02-66	July 29, 2010	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010	January 20, 2011
RAI 371-03.07.02-68	July 29, 2010	January 20, 2011
RAI 371-03.07.02-69	October 18, 2010	January 20, 2011
RAI 371-03.07.02-70	N/A	September 3, 2010
RAI 371-03.07.02-71	N/A	September 3, 2010
RAI 371-03.07.02-72	N/A	September 3, 2010

Martin (Marty) C. Bryan U.S. EPR Design Certification Licensing Manager AREVA NP Inc. Tel: (434) 832-3016 From: BRYAN Martin (EXT)
Sent: Thursday, June 24, 2010 12:58 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen V (AREVA NP INC); ROMINE Judy (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); VAN NOY Mark (EXT); CORNELL Veronica (EXT); RYAN Tom (AREVA NP INC); GARDNER George Darrell (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 2

### Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010. AREVA NP submitted Supplement 1 to the response on June 7, 2010, to provide a schedule for the remaining 9 questions, 8 of which were affected by the work underway to address NRC comments from the April 26, 2010, audit.

Based upon the civil/structural re-planning activities and revised RAI response schedule presented to the NRC during the June 9, 2010, Public Meeting, and to allow time to interact with the NRC on the responses, the schedule has been changed. The schedule for 03.07.01-29 remains unchanged.

Prior to submittal of the final RAI response, AREVA NP will provide an interim RAI response that includes:

- (1) a description of the technical work (e.g., methodology)
- (2) U.S. EPR FSAR revised pages, as applicable

The revised schedule for an interim response and the technically correct and complete response to these questions is provided below.

Question #	Interim Response Date	Response Date
RAI 371-03.07.01-28	N/A	November 12, 2010
RAI 371-03.07.01-29	N/A	July 8, 2010
RAI 371-03.07.02-66	July 29, 2010	February 17, 2011
RAI 371-03.07.02-67	July 29, 2010	January 20, 2011
RAI 371-03.07.02-68	July 29, 2010	January 20, 2011
RAI 371-03.07.02-69	October 18, 2010	January 20, 2011
RAI 371-03.07.02-70	N/A	September 3, 2010
RAI 371-03.07.02-71	N/A	September 3, 2010
RAI 371-03.07.02-72	N/A	September 3, 2010

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: BRYAN Martin (EXT)
Sent: Monday, June 07, 2010 5:07 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen V (AREVA NP INC); ROMINE Judy (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); CORNELL Veronica (EXT); VAN NOY Mark (EXT)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3, Supplement 1

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 371 on April 26, 2010.

As agreed with NRC, AREVA NP is providing a revised date for RAI 371 Supplement 1 Question 03.07.01-29 to allow time to interact with the NRC on the response.

The schedule for technically correct and complete responses to the remaining question has been changed and is provided below. The dates for questions 03.07.02-66 through 03.03.02-69 will be revised based on the information that will be presented at the June 9, 2010 public meeting and subsequent NRC feedback.

Question #	Response Date
RAI 371-03.07.01-28	August 3, 2010
RAI 371-03.07.01-29	July 8, 2010
RAI 371-03.07.02-66	July 27, 2010
RAI 371-03.07.02-67	July 27, 2010
RAI 371-03.07.02-68	August 3, 2010
RAI 371-03.07.02-69	August 3, 2010
RAI 371-03.07.02-70	August 3, 2010
RAI 371-03.07.02-71	August 3, 2010
RAI 371-03.07.02-72	August 3, 2010

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: BRYAN Martin (EXT)
Sent: Monday, April 26, 2010 12:45 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen V (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); ROMINE Judy (AREVA NP INC); VAN NOY Mark (EXT); RYAN Tom (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch. 3

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 371 Response US EPR DC.pdf" provides a schedule since a technically correct and complete response to the 9 questions is not provided.

The following table indicates the respective pages in the response document, "RAI 371 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 371-03.07.01-28	2	3
RAI 371-03.07.01-29	4	4
RAI 371-03.07.02-66	5	5
RAI 371-03.07.02-67	6	6
RAI 371-03.07.02-68	7	7
RAI 371-03.07.02-69	8	9
RAI 371-03.07.02-70	10	10
RAI 371-03.07.02-71	11	11
RAI 371-03.07.02-72	12	12

A complete answer is not provided for 9 of the 9 questions. The schedule for a technically correct and complete response to these questions is provided below.

Question #	Response Date
RAI 371-03.07.01-28	August 3, 2010
RAI 371-03.07.01-29	June 7, 2010
RAI 371-03.07.02-66	July 27, 2010
RAI 371-03.07.02-67	July 27, 2010
RAI 371-03.07.02-68	August 3, 2010
RAI 371-03.07.02-69	August 3, 2010
RAI 371-03.07.02-70	August 3, 2010
RAI 371-03.07.02-71	August 3, 2010
RAI 371-03.07.02-72	August 3, 2010

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: Thursday, March 25, 2010 2:05 PM
To: ZZ-DL-A-USEPR-DL
Cc: Chakravorty, Manas; Hawkins, Kimberly; Miernicki, Michael; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 371 (4273,4271,4280), FSAR Ch. 3

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on February 25, 2010, and on March 24, 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\_RAIsEmail Number:3409

Mail Envelope Properties (2FBE1051AEB2E748A0F98DF9EEE5A5D48A7DD8)

Subject: 3, Supplement 24	Response to U.S. EPR Design Certification Application RAI No. 371, FSAR Ch.
Sent Date:	9/13/2011 2:51:47 PM
Received Date:	9/13/2011 2:51:59 PM
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 "Tesfaye, Getachew" <Getachew.Tesfaye@nrc.gov> Tracking Status: None

Post Office:

auscharmx02.adom.ad.corp

FilesSizeMESSAGE82928RAI 371 Supplement 24 Response US EPR DC.pdf

Date & Time 9/13/2011 2:51:59 PM 1006756

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

### Response to

Request for Additional Information No. 371, Supplement 24

# 3/25/2010

U.S. EPR Standard Design Certification AREVA NP Inc. Docket No. 52-020 SRP Section: 03.07.01 - Seismic Design Parameters SRP Section: 03.07.02 - Seismic System Analysis

**Application Section: 03.07** 

QUESTIONS for Structural Engineering Branch 2 (ESBWR/ABWR Projects) (SEB2)

### Question 03.07.02-67:

### RAI from Public Meeting 12/14-15, 2009

A new large finite element model of the Nuclear Island Common Basemat Structures was developed using the ANSYS Code. This model is too large to be directly input into the MTR/SASSI Code. Therefore, the model used for the dynamic response analysis has been reduced in size. If these models are not dynamically equivalent, non-conservative errors could be introduced in the results of the dynamic analysis. As the ANSYS model serves as the basis for the SASSI model, the applicant is requested to demonstrate and describe the process that was used to ensure that the two models (ANSYS model vs SASSI model) are dynamically equivalent and include this information in the FSAR. The staff needs this information to conclude that an adequate dynamic model was used in the analysis.

### Response to Question 03.07.02-67:

The ANSYS 3D Finite Element Model (FEM) for static analysis described in U.S. EPR FSAR Tier 2, Section 3.7.2.3.1.1 is the basis for the SASSI model. The ANSYS model includes dead and live loads applied as forces and pressures, which are converted to equivalent lumped masses for the SASSI model using the procedure described in U.S. EPR FSAR Tier 2, Section 3.7.2.3.1.2. Dynamic equivalence of the ANSYS model and SASSI model was demonstrated by performing fixed base analysis for both models. Modal time-history analyses using the European Utility Requirements (EUR) hard as input motion were performed on the ANSYS model. For the SASSI model, the MTR/SASSI FBASE module and the EUR hard input motion was used for analysis.

In-structure response spectra at selected locations were compared to confirm adequacy of the SASSI model used in the soil-structure interaction analysis. Comparisons shown in Figures 03.07.02-67-1 through 03.07.02-67-39 demonstrate that the two models are dynamically equivalent. These figures correspond to revisions to U.S. EPR FSAR Figures 3.7.2-14 through 3.7.2-46 and 3.7.2-50 through 3.7.2-55. Minor discrepancies are justified as follows:

- Reactor Shield Building, Z-direction (Figure 03.07.02-67-3): The smaller ISRS response at the dome apex for the SASSI model is attributed to the discrepancies between the geometry represented in the ANSYS model and the geometry in the drawings:
  - 1) A small deviation in the ANSYS model from the perfect dome geometry around the apex of the dome, and
  - Irregularities in the dome surface geometry in the ANSYS model. These discrepancies are acceptable because the dome geometry in the SASSI model is a more accurate representation of the geometry in the drawings.
- Fuel Building, X-direction (Figure 03.07.02-67-22 and 03.07.02-67-25): The greater dominant frequency for the SASSI model is attributed to slight differences in the two finite element models. Minor shape and location adjustments made for some of the shear walls in the framing system produce a stiffer structural configuration for the SASSI model. These model simplifications are acceptable because, overall, the SASSI model response envelopes the ANSYS model response, which becomes even more evident when the SASSI model ISRS are broadened.

### **FSAR Impact:**

U.S. EPR FSAR Tier 2, Section 3.7.2, and Figures 3.7.2-14 through 3.7.2-46 and 3.7.2-50 through 3.7.2-55 will be revised as described in the response and indicated on the enclosed markup.

# Figure 03.07.02-67-1—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +200 ft, 5 in (+61.09m) (Dome Apex) of Reactor Shield Building, 5% Damping, X-Direction



# Figure 03.07.02-67-2—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +200 ft, 5 in (+61.09m) (Dome Apex) of Reactor Shield Building, 5% Damping, Y-Direction






















































# Figure 03.07.02-67-16—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +68 ft, 10-3/4 in (+21.00m) - Safeguard Building 2/3, 5% Damping, X-Direction







# Figure 03.07.02-67-18—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +68 ft, 10-3/4 in (+21.00m) - Safeguard Building 2/3, 5% Damping, Z-Direction



















































# Figure 03.07.02-67-31—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +123 ft, 4-1/4 in (+37.60m) - Containment Building, 5% Damping, X-Direction











# Figure 03.07.02-67-34—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +63 ft, 11-3/4 in (+19.50m) - Reactor Building Internal Structure, 5% Damping, X-Direction



# Figure 03.07.02-67-35—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +63 ft, 11-3/4 in (+19.50m) - Reactor Building Internal Structure, 5% Damping, Y-Direction



# Figure 03.07.02-67-36—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +63 ft, 11-3/4 in (+19.50m) - Reactor Building Internal Structure, 5% Damping, Z-Direction



# Figure 03.07.02-67-37—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +16 ft, 10-3/4 in (+5.15m) - Reactor Building Internal Structure, 5% Damping, X-Direction



# Figure 03.07.02-67-38—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +16 ft, 10-3/4 in (+5.15m) - Reactor Building Internal Structure, 5% Damping, Y-Direction



# Figure 03.07.02-67-39—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +16 ft, 10-3/4 in (+5.15m) - Reactor Building Internal Structure, 5% Damping, Z-Direction



# U.S. EPR Final Safety Analysis Report Markups


internal columns, shield building buttresses, Polar Crane (PC) beams, and RCS beams. Lumped masses are included to model the PC and NSSS equipment.

To model structural loads, the dead and live loads are applied to the model and solved statically. The reactions at each node are found and then applied to the dynamic FEM as lumped masses, which include mass contributions from the following elements:

- Permanent equipment and distribution systems supported by slabs and platforms.
- Water in pools under normal operating conditions.
- Twenty-five percent of the live loads (variable loads) on floor slabs and platforms.
- Seventy-five percent of the maximum snow load on roof slabs.
- Miscellaneous dead loads of at least 50 psf.

In the dynamic FEM, the hydrodynamic loads are considered by adding the tributary water mass to the pool walls and slabs. For the static FEM, the hydrodynamic loads are developed using the method provided in TID-7024 and applied to the pool walls and slabs in the form of pressure distribution. The spent fuel racks are considered by lumping 100 percent of the spent fuel load at the bottom slab in the vertical direction and by distributing it along the height of the pool in the horizontal direction. Rack structure interaction is not considered in development of the FEM for the FB as far as global seismic response is concerned.

#### 03.07.02-67

The sufficiency of the dynamic FEM is established by a comparison of the five percent damping ISRS envelopes between the static FEM and dynamic fixed base FEMs at various locations of the FEMswithin the models. The input ground motions are the three components of synthetic time histories for the EUR Hard motion and HF motion. The ANSYS code, Version 11.0, is used in the modal time history analysis of the static and dynamic FEMs, whereas the MTR/SASSI code Version 8.3, is used in the frequency response analysis of the dynamic FEM. The 0.0025 second time step is used in the modal time history analysis for the EUR Hard input motion, in which one-half the time step (0.00125 seconds) changes the ISRS by less than ten percent as indicated in Section 3.7.2.1.1. The 0.00125 second time step is used in the modal time history analysis for the HF input motion. The figures listed show the spectrum comparison at the following locations:

- RSB
  - Apex of dome at elevation +200 ft, 5 inches. See Figure 3.7.2-14—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +200 ft, 5 in (+61.09m) (Dome Apex) of Reactor Shield Building, 5% Damping, X-Direction, Figure 3.7.2-15—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +200 ft, 5 in (+61.09m) (Dome Apex) of Reactor Shield Building,

















Figure 3.7.2-16—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +200ft, 5 in (+61.09m) (Dome Apex) of Reactor Shield Building, 5% Damping, Z-Direction

Revision 4-Interim

03.07.02-67



Figure 3.7.2-17—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +95 ft, 1-3/4 in (+29.00m) -Safeguard Building 1, 5% Damping, X-Direction









Page 3.7-198

Revision 4-Interim





#### Figure 3.7.2-19—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +95 ft, 1-3/4 in (+29.00m) -

03.07.02-67



Figure 3.7.2-20—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +26 ft, 3 in (+8.00m) - Safeguard Building 1, 5% Damping, X-Direction



Page 3.7-200

Revision 4-Interim













Page 3.7-202

Tier 2

Revision 4-Interim















Figure 3.7.2-25—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +95 ft, 1-3/4 in (+29.00m) -Safeguard Building 4, 5% Damping, Z-Direction











Figure 3.7.2-27—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +26 ft, 3 in (+8.00m) - Safeguard Building 4, 5% Damping, Y-Direction



Tier 2

Page 3.7-207

Revision 4-Interim









#### Figure 3.7.2-29—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +68 ft, 10-3/4 in (+21.00m) -Safeguard Building 2/3, 5% Damping, X-Direction





Figure 3.7.2-30—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +68 ft, 10-3/4 in (+21.00m) -Safeguard Building 2/3, 5% Damping, Y-Direction





Figure 3.7.2-31—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +68 ft, 10-3/4 in (+21.00m) -Safeguard Building 2/3, 5% Damping, Z-Direction





# Figure 3.7.2-32—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +26 ft, 3 in (+8.00m) - Safeguard Building 2/3, 5% Damping, X-Direction



Revision 4-Interim



Figure 3.7.2-33—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +26 ft, 3 in (+8.00m) - Safeguard Building 2/3, 5% Damping, Y-Direction



Page 3.7-213

Revision 4-Interim



Figure 3.7.2-34—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +26 ft, 3 in (+8.00m) - Safeguard Building 2/3, 5% Damping, Z-Direction





# Figure 3.7.2-35—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +62 ft, 4-1/4 in (+19.00m) - Fuel Building, 5% Damping, X-Direction











# Figure 3.7.2-37—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +62 ft, 4-1/4 in (+19.00m) - Fuel Building, 5% Damping, Z-Direction



Figure 3.7.2-38—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +23 ft, 7-1/2 in (+7.20m) - Fuel Building, 5% Damping, X-Direction





Figure 3.7.2-39—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +23 ft, 7-1/2 in (+7.20m) - Fuel





Figure 3.7.2-40—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +23 ft, 7-1/2 in (+7.20m) - Fuel Building, 5% Damping, Z-Direction





Figure 3.7.2-41—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +190 ft, 3-1/2 in (+58.00m) -Containment Dome Apex, 5% Damping, X-Direction





Figure 3.7.2-42—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +190 ft, 3-1/2 in (+58.00m) -





Figure 3.7.2-43—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +190 ft, 3-1/2 in (+58.00m) -Containment Dome Apex, 5% Damping, Z-Direction





Figure 3.7.2-44—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +123 ft, 4-1/4 in (+37.60m) -Containment Building, 5% Damping, X-Direction





Figure 3.7.2-45—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +123 ft, 4-1/4 in (+37.60m) -Containment Building, 5% Damping, Y-Direction





Figure 3.7.2-46—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +123 ft, 4-1/4 in (+37.60m) Containment Building, 5% Damping, Z-Direction





Figure 3.7.2-50—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +63 ft, 11-3/4 in (+19.50m) -Reactor Building Internal Structure, 5% Damping, X-Direction





Figure 3.7.2-51—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +63 ft, 11-3/4 in (+19.50m) -Reactor Building Internal Structure, 5% Damping, Y-Direction



Revision 4-Interim


Figure 3.7.2-52—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +63 ft, 11-3/4 in (+19.50m) -Reactor Building Internal Structure, 5% Damping, Z-Direction



Tier 2



Figure 3.7.2-53—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +16 ft, 10-3/4 in (+5.15m) -Reactor Building Internal Structure, 5% Damping, X-Direction



Tier 2



Figure 3.7.2-54—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +16 ft, 10-3/4 in (+5.15m) -Reactor Building Internal Structure, 5% Damping, Y-Direction





Figure 3.7.2-55—Static FEM vs. Dynamic FEM Spectrum Comparison at Elev. +16 ft, 10-3/4 in (+5.15m) -Reactor Building Internal Structure, 5% Damping, Z-Direction



Page 3.7-235

Revision 4—Interim