

ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Tuesday, April 30, 2013 11:28 PM
To: Snyder, Amy
Cc: Hearn, Peter; ANDERSON Katherine (EXTERNAL AREVA); DELANO Karen (AREVA); LEIGHLITER John (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); KOWALSKI David (AREVA)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 12
Attachments: RAI 525 Supplement 12 Response US EPR DC - PUBLIC.pdf

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28. Supplement 4 response was sent on December 14, 2012 to provide a revised schedule for 6 of the remaining 17 questions. Supplement 5 response was sent on January 8, 2013 to provide a revised schedule for 11 of the remaining 17 questions. Supplement 6 response was sent on February 25, 2013 to provide technically correct and complete final responses to Questions 09.01.04-32 and 09.01.04-35. Supplement 7 response was sent on February 28, 2013 to provide technically correct and complete final responses to Questions 09.01.04-21 and 09.01.04-34. Supplement 8 response was also sent on February 28, 2013 to provide a revised schedule for Questions 09.01.04-23 and 09.01.04-38. Supplement 9 response was sent on March 14, 2013 to provide technically correct and complete final responses to Questions 09.01.04-23 and 09.01.04-38. Supplement 10 and Supplement 11 responses were sent on April 30, 2013 to provide technically correct and complete final responses to Questions 09.01.04-27 and 09.01.04-29, respectively.

NRC staff written review comments on AREVA's final response to Question 09.01.04-23 were received on March 26, 2013 and clarified in a subsequent telecon on April 3, 2013. We have incorporated NRC staff comments in the revised final response to this question provided in this supplement. The attached file, "RAI 525 Supplement 12 Response US EPR DC - PUBLIC.pdf" provides a technically correct and complete final revised response to Question 09.01.04-23.

Because the response file contains security-related sensitive information that should be withheld from public disclosure in accordance with 10 CFR 2.390, a public version is provided with the security-related sensitive information redacted. This e-mail does not contain any security-related information. The unredacted SUNSI version is provided under separate e-mail.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format, which support the revised final response to RAI 525 Question 09.01.04-23.

The following table indicates the respective pages in the response document, "RAI 525 Supplement 12 Response US EPR DC - PUBLIC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 525 — 09.01.04-23	2	4

The schedule for technically correct and complete responses to the remaining 9 questions has not changed as provided below.

Question #	Response Date
RAI 525 — 09.01.04-22	May 15, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)
Sent: Tuesday, April 30, 2013 5:58 PM
To: Amy.Snyder@nrc.gov
Cc: peter.hearn@nrc.gov; ANDERSON Katherine (External AREVA NP INC.); DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 11

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28. Supplement 4 response was sent on December 14, 2012 to provide a revised schedule for 6 of the remaining 17 questions. Supplement 5 response was sent on January 8, 2013 to provide a revised schedule for 11 of the remaining 17 questions. Supplement 6 response was sent on February 25, 2013 to provide technically correct and complete final responses to Questions 09.01.04-32 and 09.01.04-35. Supplement 7 response was sent on February 28, 2013 to provide technically correct and complete final responses to Questions 09.01.04-21 and 09.01.04-34. Supplement 8 response was also sent on February 28, 2013 to provide a revised schedule for Questions 09.01.04-23 and 09.01.04-38. Supplement 9 response was sent on March 14, 2013 to provide technically correct and complete final responses to Questions 09.01.04-23 and 09.01.04-38. Supplement 10 response was sent on April 30, 2013 to provide a technically correct and complete final response to Question 09.01.04-27.

NRC staff written review comments on AREVA's advanced response to Question 09.01.04-29 were received on April 12, 2013, and also discussed with NRC staff during telecons on April 3, 2013, April 8, 2013, and April 22, 2013. We have incorporated NRC staff comments in the final response to this question provided in this supplement. The attached file, "RAI 525 Supplement 11 Response US EPR DC.pdf" provides a technically correct and complete final response to Question 09.01.04-29.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the final response to RAI 525 Question 09.01.04-29.

The following table indicates the respective pages in the response document, "RAI 525 Supplement 11 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 525 — 09.01.04-29	2	5

The schedule for a technically correct and complete response to the remaining 9 questions has not changed as shown below.

Question #	Response Date
RAI 525 — 09.01.04-22	May 15, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)
Sent: Tuesday, April 30, 2013 12:27 PM
To: Amy.Snyder@nrc.gov
Cc: peter.hearn@nrc.gov; ANDERSON Katherine (External AREVA NP INC.); DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 10
Importance: High

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28. Supplement 4 response was sent on December 14, 2012 to provide a revised schedule for 6 of the remaining 17 questions. Supplement 5 response was sent on January 8, 2013 to provide a revised schedule for 11 of the remaining 17 questions. Supplement 6 response was sent on February 25, 2013 to provide technically correct and complete final responses to Questions 09.01.04-32 and 09.01.04-35. Supplement 7 response was sent on February 28, 2013 to provide technically correct and complete final responses to Questions 09.01.04-21 and 09.01.04-34. Supplement 8 response was also sent on February 28, 2013 to provide a revised schedule for Questions 09.01.04-23 and 09.01.04-38. Supplement 9 response was sent on March 14, 2013 to provide technically correct and complete final responses to Questions 09.01.04-23 and 09.01.04-38.

NRC staff review comments on our advanced response to Question 09.01.04-27 were received via e-mail on March 26, 2013 and clarified in a subsequent telecon on April 3, 2013. We have incorporated NRC staff comments in the final response to this question provided in this supplement. The attached file, "RAI 525 Supplement 10 Response US EPR DC.pdf" provides a technically correct and complete final response to Question 09.01.04-27.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the final response to RAI 525 Question 09.01.04-27.

The following table indicates the respective pages in the response document, "RAI 525 Supplement 10 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 525 — 09.01.04-27	2	3

The schedule for a technically correct and complete response to Question 09.01.04-29 has been revised as provided below. The response schedule for the other 9 questions has not changed.

Question #	Response Date
RAI 525 — 09.01.04-22	May 15, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-29	April 30, 2013
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B

Charlotte, NC 28262

Phone: 704-805-2223

Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)

Sent: Friday, March 29, 2013 3:45 PM

To: Amy.Snyder@nrc.gov

Cc: peter.hearn@nrc.gov; DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WILLS Tiffany (CORP/QP); HONMA George (EXT); KOWALSKI David (RS/NB); GUCWA Len (External RS/NB); VANCE Brian (RS/NB)

Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Questions 09.01.04-27 and 09.01.04-29 - STATUS

Importance: High

Amy,

AREVA appreciates the NRC staff review comments received earlier this week on the Advanced RAI responses to Questions 09.01.04-27 and 09.01.04-29. We need and have requested a clarification telecon with NRC staff to review the comments. AREVA will provide a revised schedule for submittal of the final responses to these 2 questions after completion of the clarification telecon and evaluation of the additional comments received.

The schedule for a technically correct and complete final response to the other 9 questions remains unchanged as shown below.

Question #	Response Date
RAI 525 — 09.01.04-22	May 15, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-27	TBD
RAI 525 — 09.01.04-29	TBD
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013

Sincerely,

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

AREVA NP Inc.

7207 IBM Drive, Mail Code CLT 2B

Charlotte, NC 28262

Phone: 704-805-2223

Email: Dennis.Williford@areva.com**From:** WILLIFORD Dennis (RS/NB)**Sent:** Thursday, March 14, 2013 1:44 PM**To:** Amy.Snyder@nrc.gov**Cc:** peter.hearn@nrc.gov; DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WILLS Tiffany (CORP/QP); KOWALSKI David (RS/NB)**Subject:** Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 9**Importance:** High

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28. Supplement 4 response was sent on December 14, 2012 to provide a revised schedule for 6 of the remaining 17 questions. Supplement 5 response was sent on January 8, 2013 to provide a revised schedule for 11 of the remaining 17 questions. Supplement 6 response was sent on February 25, 2013 to provide technically correct and complete final responses to Questions 09.01.04-32 and 09.01.04-35. Supplement 7 response was sent on February 28, 2013 to provide technically correct and complete final responses to Questions 09.01.04-21 and 09.01.04-34. Supplement 8 response was also sent on February 28, 2013 to provide a revised schedule for Questions 09.01.04-23 and 09.01.04-38.

The attached file, "RAI 525 Supplement 9 Response US EPR DC - PUBLIC.pdf," provides technically correct and complete final responses to Questions 09.01.04-23 and 09.01.04-38.

Because the response file contains security-related sensitive information that should be withheld from public disclosure in accordance with 10 CFR 2.390, a public version is provided with the security-related sensitive information redacted. This e-mail does not contain any security-related information. The unredacted SUNSI version is provided under separate e-mail.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format, which support final responses to RAI 525 Questions 09.01.04-23 and 09.01.04-38.

The following table indicates the respective pages in the response document, "RAI 525 Supplement 9 Response US EPR DC - PUBLIC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 525 — 09.01.04-23	2	3
RAI 525 — 09.01.04-38	4	7

The schedule for technically correct and complete responses to the remaining 11 questions has not changed and is provided below.

Question #	Response Date
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RAI 525 — 09.01.04-22	May 15, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-27	March 29, 2013
RAI 525 — 09.01.04-29	March 29, 2013
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)
Sent: Thursday, February 28, 2013 10:07 PM
To: Amy.Snyder@nrc.gov
Cc: peter.hearn@nrc.gov; DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WILLS Tiffany (CORP/QP); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 8
Importance: High

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28. Supplement 4 response was sent on December 14, 2012 to provide a revised schedule for 6 of the remaining 17 questions. Supplement 5 response was sent on January 8, 2013 to provide a revised schedule for 11 of the remaining 17 questions. Supplement 6 response was sent on February 25, 2013 to provide technically correct and complete final responses to two questions (Questions 09.01.04-32 and 09.01.04-35). Supplement 7 response was sent on February 28, 2013 to provide technically correct and complete final responses to Questions 09.01.04-21 and 09.01.04-34.

The schedule for technically correct and complete responses to two questions (Questions 09.01.04-23 and 09.01.04-38) has been changed as provided below.

Question #	Response Date
RAI 525 — 09.01.04-22	May 15, 2013

RAI 525 — 09.01.04-23	March 14, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-27	March 29, 2013
RAI 525 — 09.01.04-29	March 29, 2013
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013
RAI 525 — 09.01.04-38	March 14, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B

Charlotte, NC 28262

Phone: 704-805-2223

Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)

Sent: Thursday, February 28, 2013 1:54 PM

To: Amy.Snyder@nrc.gov

Cc: peter.hearn@nrc.gov; DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WILLS Tiffany (CORP/QP); KOWALSKI David (RS/NB)

Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 7

Importance: High

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28. Supplement 4 response was sent on December 14, 2012 to provide a revised schedule for 6 of the remaining 17 questions. Supplement 5 response was sent on January 8, 2013 to provide a revised schedule for 11 of the remaining 17 questions. Supplement 6 response was sent on February 25, 2013 to provide technically correct and complete final responses to two questions (Questions 09.01.04-32 and 09.01.04-35).

The attached file, "RAI 525 Supplement 7 Response US EPR DC.pdf," provides a technically correct and complete final response to two questions (Questions 09.01.04-21 and 09.01.04-34). Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the final responses to RAI 525 Questions 09.01.04-21 and 09.01.04-34.

The following table indicates the respective pages in the response document, "RAI 525 Supplement 7 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 525 — 09.01.04-21	2	3
RAI 525 — 09.01.04-34	4	5

The schedule for technically correct and complete responses to the remaining 13 questions has not changed as provided below.

Question #	Response Date
RAI 525 — 09.01.04-22	May 15, 2013
RAI 525 — 09.01.04-23	February 28, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-27	March 29, 2013
RAI 525 — 09.01.04-29	March 29, 2013
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013
RAI 525 — 09.01.04-38	February 28, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)
Sent: Monday, February 25, 2013 10:11 PM
To: Amy.Snyder@nrc.gov
Cc: peter.hearn@nrc.gov; DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WILLS Tiffany (CORP/QP); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 6
Importance: High

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a

revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28. Supplement 4 response was sent on December 14, 2012 to provide a revised schedule for 6 of the remaining 17 questions. Supplement 5 response was sent on January 8, 2013 to provide a revised schedule for 11 of the remaining 17 questions.

The attached file, "RAI 525 Supplement 6 Response US EPR DC.pdf" provides a technically correct and complete final response to two questions (Questions 09.01.04-32 and 09.01.04-35).

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 525 Questions 09.01.04-32 and 09.01.04-35.

The following table indicates the respective pages in the response document, "RAI 525 Supplement 6 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 525 — 09.01.04-32	2	2
RAI 525 — 09.01.04-35	3	3

The schedule for a technically correct and complete response to the remaining 15 questions is unchanged as provided below.

Question #	Response Date
RAI 525 — 09.01.04-21	February 28, 2013
RAI 525 — 09.01.04-22	May 15, 2013
RAI 525 — 09.01.04-23	February 28, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-27	March 29, 2013
RAI 525 — 09.01.04-29	March 29, 2013
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-34	February 28, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013
RAI 525 — 09.01.04-38	February 28, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262

From: WILLIFORD Dennis (RS/NB)
Sent: Tuesday, January 08, 2013 3:40 PM
To: Amy.Snyder@nrc.gov
Cc: peter.hearn@nrc.gov; DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WILLS Tiffany (CORP/QP); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 5
Importance: High

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28. Supplement 4 response was sent on December 14, 2012 to provide a revised schedule for 6 of the remaining 17 questions.

The schedule for a technically correct and complete response to 11 of the remaining 17 questions has been revised as provided below.

Question #	Response Date
RAI 525 — 09.01.04-21	February 28, 2013
RAI 525 — 09.01.04-22	May 15, 2013
RAI 525 — 09.01.04-23	February 28, 2013
RAI 525 — 09.01.04-24	May 15, 2013
RAI 525 — 09.01.04-25	May 15, 2013
RAI 525 — 09.01.04-26	May 15, 2013
RAI 525 — 09.01.04-27	March 29, 2013
RAI 525 — 09.01.04-29	March 29, 2013
RAI 525 — 09.01.04-30	May 15, 2013
RAI 525 — 09.01.04-31	May 24, 2013
RAI 525 — 09.01.04-32	February 28, 2013
RAI 525 — 09.01.04-33	May 24, 2013
RAI 525 — 09.01.04-34	February 28, 2013
RAI 525 — 09.01.04-35	February 28, 2013
RAI 525 — 09.01.04-36	May 24, 2013
RAI 525 — 09.01.04-37	May 24, 2013
RAI 525 — 09.01.04-38	February 28, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)

Sent: Friday, December 14, 2012 4:58 PM

To: Amy.Snyder@nrc.gov

Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); peter.hearn@nrc.gov; KOWALSKI David (RS/NB)

Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 4

Importance: High

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response was sent on March 16, 2012 to provide a response to Question 09.01.04-28. Supplement 3 response was sent on May 30, 2012 to provide a revised final response to Question 09.01.04-28.

The schedule for a technically correct and complete response to 6 of the remaining 17 questions has been revised as provided below.

Question #	Response Date
RAI 525 — 09.01.04-21	February 28, 2013
RAI 525 — 09.01.04-22	June 28, 2013
RAI 525 — 09.01.04-23	February 28, 2013
RAI 525 — 09.01.04-24	June 28, 2013
RAI 525 — 09.01.04-25	June 28, 2013
RAI 525 — 09.01.04-26	June 28, 2013
RAI 525 — 09.01.04-27	June 28, 2013
RAI 525 — 09.01.04-29	June 28, 2013
RAI 525 — 09.01.04-30	June 28, 2013
RAI 525 — 09.01.04-31	June 28, 2013
RAI 525 — 09.01.04-32	February 28, 2013
RAI 525 — 09.01.04-33	June 28, 2013
RAI 525 — 09.01.04-34	February 28, 2013
RAI 525 — 09.01.04-35	February 28, 2013
RAI 525 — 09.01.04-36	June 28, 2013
RAI 525 — 09.01.04-37	June 28, 2013
RAI 525 — 09.01.04-38	February 28, 2013

Sincerely,

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

AREVA NP Inc.

7207 IBM Drive, Mail Code CLT 2B

Charlotte, NC 28262

Phone: 704-805-2223

Email: Dennis.Williford@areva.com**From:** WILLIFORD Dennis (RS/NB)**Sent:** Wednesday, May 30, 2012 11:38 AM**To:** Getachew.Tesfaye@nrc.gov**Cc:** BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); KOWALSKI David (RS/NB)**Subject:** Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 3**Importance:** High

Getachew,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response to RAI No. 525 was sent on February 24, 2012 to provide a revised schedule. Supplement 2 response to RAI No. 525 was sent on March 16, 2012 to provide a complete final response to Question 09.01.04-28.

The attached file, "RAI 525 Supplement 3 Response US EPR DC.pdf" provides a technically correct and complete revised final response to Question 09.01.04-28, which supersedes in its entirety the response to this question provided in Supplement 2.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 525 Question 09.01.04-28.

The following table indicates the respective pages in the response document, "RAI 525 Supplement 3 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 525 — 09.01.04-28	2	2

The schedule for a technically correct and complete response to the remaining 17 questions has not changed as provided below.

Question #	Response Date
RAI 525 — 09.01.04-21	June 28, 2013
RAI 525 — 09.01.04-22	June 28, 2013
RAI 525 — 09.01.04-23	June 28, 2013
RAI 525 — 09.01.04-24	June 28, 2013
RAI 525 — 09.01.04-25	June 28, 2013
RAI 525 — 09.01.04-26	June 28, 2013
RAI 525 — 09.01.04-27	June 28, 2013
RAI 525 — 09.01.04-29	June 28, 2013
RAI 525 — 09.01.04-30	June 28, 2013
RAI 525 — 09.01.04-31	June 28, 2013

RAI 525 — 09.01.04-32	June 28, 2013
RAI 525 — 09.01.04-33	June 28, 2013
RAI 525 — 09.01.04-34	June 28, 2013
RAI 525 — 09.01.04-35	June 28, 2013
RAI 525 — 09.01.04-36	June 28, 2013
RAI 525 — 09.01.04-37	June 28, 2013
RAI 525 — 09.01.04-38	June 28, 2013

Sincerely,

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

From: WILLIFORD Dennis (RS/NB)
Sent: Friday, March 16, 2012 3:05 PM
To: Getachew.Tesfaye@nrc.gov
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 2

Getachew,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012. Supplement 1 response to RAI No. 525 was sent on February 24, 2012 to provide a revised schedule.

The attached file, "RAI 525 Supplement 2 Response US EPR DC.pdf" provides a technically correct and complete final response to Question 09.01.04-28.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 525 Question 09.01.04-28.

The following table indicates the respective pages in the response document, "RAI 525 Supplement 2 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 525 — 09.01.04-28	2	2

The schedule for technically correct and complete responses to the remaining seventeen questions has not changed and is provided below.

Question #	Response Date
RAI 525 — 09.01.04-21	June 28, 2013

RAI 525 — 09.01.04-22	June 28, 2013
RAI 525 — 09.01.04-23	June 28, 2013
RAI 525 — 09.01.04-24	June 28, 2013
RAI 525 — 09.01.04-25	June 28, 2013
RAI 525 — 09.01.04-26	June 28, 2013
RAI 525 — 09.01.04-27	June 28, 2013
RAI 525 — 09.01.04-29	June 28, 2013
RAI 525 — 09.01.04-30	June 28, 2013
RAI 525 — 09.01.04-31	June 28, 2013
RAI 525 — 09.01.04-32	June 28, 2013
RAI 525 — 09.01.04-33	June 28, 2013
RAI 525 — 09.01.04-34	June 28, 2013
RAI 525 — 09.01.04-35	June 28, 2013
RAI 525 — 09.01.04-36	June 28, 2013
RAI 525 — 09.01.04-37	June 28, 2013
RAI 525 — 09.01.04-38	June 28, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B
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From: WILLIFORD Dennis (RS/NB)
Sent: Friday, February 24, 2012 5:21 PM
To: Getachew.Tesfaye@nrc.gov
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 1

Getachew,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the eighteen questions in RAI No. 525 on January 25, 2012.

The schedule for technically correct and complete responses to the eighteen questions has been changed as provided below. This schedule was transmitted to the NRC in AREVA NP letter NRC:12:008 dated February 21, 2012.

Question #	Response Date
RAI 525 — 09.01.04-21	June 28, 2013
RAI 525 — 09.01.04-22	June 28, 2013
RAI 525 — 09.01.04-23	June 28, 2013
RAI 525 — 09.01.04-24	June 28, 2013

RAI 525 — 09.01.04-25	June 28, 2013
RAI 525 — 09.01.04-26	June 28, 2013
RAI 525 — 09.01.04-27	June 28, 2013
RAI 525 — 09.01.04-28	June 28, 2013
RAI 525 — 09.01.04-29	June 28, 2013
RAI 525 — 09.01.04-30	June 28, 2013
RAI 525 — 09.01.04-31	June 28, 2013
RAI 525 — 09.01.04-32	June 28, 2013
RAI 525 — 09.01.04-33	June 28, 2013
RAI 525 — 09.01.04-34	June 28, 2013
RAI 525 — 09.01.04-35	June 28, 2013
RAI 525 — 09.01.04-36	June 28, 2013
RAI 525 — 09.01.04-37	June 28, 2013
RAI 525 — 09.01.04-38	June 28, 2013

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B

Charlotte, NC 28262

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Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)

Sent: Wednesday, January 25, 2012 4:06 PM

To: 'Tsfaye, Getachew'

Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); KOWALSKI David (RS/NB); Michael.Miernicki@nrc.gov; peter.hearn@nrc.gov

Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 525 Response US EPR DC.pdf," provides a preliminary schedule since a technically correct and complete response to these eighteen questions cannot be provided at this time.

The following table indicates the respective pages in the response document, "RAI 525 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 525 — 09.01.04-21	2	2
RAI 525 — 09.01.04-22	3	3
RAI 525 — 09.01.04-23	4	4
RAI 525 — 09.01.04-24	5	5
RAI 525 — 09.01.04-25	6	6

RAI 525 — 09.01.04-26	7	7
RAI 525 — 09.01.04-27	8	8
RAI 525 — 09.01.04-28	9	9
RAI 525 — 09.01.04-29	10	10
RAI 525 — 09.01.04-30	11	11
RAI 525 — 09.01.04-31	12	12
RAI 525 — 09.01.04-32	13	13
RAI 525 — 09.01.04-33	14	14
RAI 525 — 09.01.04-34	15	15
RAI 525 — 09.01.04-35	16	16
RAI 525 — 09.01.04-36	17	17
RAI 525 — 09.01.04-37	18	18
RAI 525 — 09.01.04-38	19	19

A preliminary schedule for technically correct and complete responses to these questions is provided below. This schedule is being reevaluated and a new supplement with a revised schedule will be transmitted by February 21, 2012.

Question #	Response Date
RAI 525 — 09.01.04-21	February 21, 2012
RAI 525 — 09.01.04-22	February 21, 2012
RAI 525 — 09.01.04-23	February 21, 2012
RAI 525 — 09.01.04-24	February 21, 2012
RAI 525 — 09.01.04-25	February 21, 2012
RAI 525 — 09.01.04-26	February 21, 2012
RAI 525 — 09.01.04-27	February 21, 2012
RAI 525 — 09.01.04-28	February 21, 2012
RAI 525 — 09.01.04-29	February 21, 2012
RAI 525 — 09.01.04-30	February 21, 2012
RAI 525 — 09.01.04-31	February 21, 2012
RAI 525 — 09.01.04-32	February 21, 2012
RAI 525 — 09.01.04-33	February 21, 2012
RAI 525 — 09.01.04-34	February 21, 2012
RAI 525 — 09.01.04-35	February 21, 2012
RAI 525 — 09.01.04-36	February 21, 2012
RAI 525 — 09.01.04-37	February 21, 2012
RAI 525 — 09.01.04-38	February 21, 2012

Sincerely,

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

7207 IBM Drive, Mail Code CLT 2B
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Phone: 704-805-2223

Email: Dennis.Williford@areva.com

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

Sent: Monday, December 19, 2011 4:19 PM

To: ZZ-DL-A-USEPR-DL

Cc: Curran, Gordon; McKenna, Eileen; Xu, Jim; Thomas, Brian; Hearn, Peter; Segala, John; ArevaEPRDCPEm Resource

Subject: U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on November 11, 2011, and discussed with your staff on December 2, 2011. Draft RAI Questions 09.01.04-24, 09.01.04-31, and 09.01.04-33 were modified as a result of that discussion. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs, excluding the time period of **December 24, 2011 thru January 2, 2012, to account for the holiday season** as discussed with AREVA NP Inc. For any RAIs that cannot be answered **within 40 days**, it is expected that a date for receipt of this information will be provided to the staff within the 40-day period so that the staff can assess how this information will impact the published schedule.

Thanks,

Getachew Tesfaye

Sr. Project Manager

NRO/DNRL/NARP

(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 4364

Mail Envelope Properties (554210743EFE354B8D5741BEB695E65614D9D0)

Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 12
Sent Date: 4/30/2013 11:28:28 PM
Received Date: 4/30/2013 11:28:40 PM
From: WILLIFORD Dennis (AREVA)

Created By: Dennis.Williford@areva.com

Recipients:

"Hearn, Peter" <Peter.Hearn@nrc.gov>

Tracking Status: None

"ANDERSON Katherine (EXTERNAL AREVA)" <katherine.anderson.ext@areva.com>

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"DELANO Karen (AREVA)" <Karen.Delano@areva.com>

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"LEIGHLITER John (AREVA)" <John.Leighliter@areva.com>

Tracking Status: None

"ROMINE Judy (AREVA)" <Judy.Romine@areva.com>

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"RYAN Tom (AREVA)" <Tom.Ryan@areva.com>

Tracking Status: None

"KOWALSKI David (AREVA)" <David.Kowalski@areva.com>

Tracking Status: None

"Snyder, Amy" <Amy.Snyder@nrc.gov>

Tracking Status: None

Post Office: FUSLYNCMX03.fdom.ad.corp

Files	Size	Date & Time
MESSAGE	40437	4/30/2013 11:28:40 PM
RAI 525 Supplement 12 Response US EPR DC - PUBLIC.pdf		620229

Options

Priority: Standard

Return Notification: No

Reply Requested: No

Sensitivity: Normal

Expiration Date:

Recipients Received:

Response to
Request for Additional Information No. 525, Supplement 12

12/19/2011

U.S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 09.01.04 - Light Load Handling System (Related to Refueling)
Application Section: 09.01.04

QUESTIONS for Balance of Plant Branch 1 (SBPA)
QUESTIONS for Structural Engineering Branch 2 (ESBWR/ABWR Projects) (SEB2)

Question 09.01.04-23:**OPEN ITEM**

The under-pool loading configuration precludes contamination of the exterior surface of the cask, which minimizes occupational dose during cask loading operations. As indicated by the applicant, the loading hall is provided with a separate supply and exhaust duct. The FB ventilation system has isolation provisions that can isolate the SFP room and loading hall from the rest of the building when needed. Response to RAI 9.1.4-15 indicates that occupational doses are minimized if an operator is required to enter the loading hall for abnormal conditions.

However, the staff is unclear regarding why an operator would be required to enter the SFCTF during cask loading. Therefore, the staff requests the applicant to identify what abnormal conditions would require an operator to enter the cask loading hall during cask loading operation.

Response to Question 09.01.04-23:

This response supersedes in its entirety the response to Question 09.01.04-23 provided in RAI 525, Supplement 9.

An operator typically is not required or expected to enter the loading hall from the time loading of the spent fuel assemblies into the cask is initiated, until placement of the biological lid on top of the cask, because this part of the loading sequence is remotely controlled from the spent fuel cask transfer facility (SFCTF) control room. However, operator entry into the loading hall may be required during this phase of operations for the performance of corrective action or manual operation to address abnormal situations such as:

- Failure of moving parts, such as improper functioning of an anti-seismic locking device, failure of docking mechanism leading to incorrect undocking, failure of the spent fuel cask transfer machine (SFCTM) travel drive motor or failure of the biological protections to open.
- Loss of power supply.
- Seismic event.

U.S. EPR FSAR Tier 2, Section 9.1.4.2.1 will be revised to reflect this additional information.

U.S. EPR FSAR Tier 2, Section 9.1.4.2.1 states that the anticipated dose rates for operators in the loading hall during cask handling operation are identified in Figure 12.3-33—Fuel Building +0 Ft Elevation Radiation Zones and Figure 12.3-34—Fuel Building +12 Ft Elevation Radiation Zones.

Prior to cask loading operations and after the biological lid is in place, the loading hall is not expected to be a high radiation area (i.e., the dose rates are less than 100 mrem/hr). Therefore, access controls are not required. However, during cask loading operations there is a potential for the loading hall to be a high radiation area on the upper platform of the spent fuel cask transfer machine (SFCTM). The radiation zone designation for the loading hall will therefore be revised from Yellow (4) to Red (6) to reflect the potential for high radiation area on the upper platform of the SFCTM during cask loading operations. Access to the loading hall will be procedurally controlled via locked door(s), as part of the Radiation Protection Program in accordance with 10CFR20.1601.

This supplemental response corrects the radiation zone designation for the loading hall and the minimum wall/floor thicknesses adjacent to the loading hall (UKS10 015), which were erroneously identified on the following U.S. EPR FSAR Tier 2 figures as part of the RAI 525, Supplement 9, Question 09.01.04-23, response:

- Figure 12.3-33—Fuel Building +0 Ft Elevation Radiation Zones.
- Figure 12.3-34—Fuel Building +12 Ft Elevation Radiation Zones.
- Figure 12.3-35—Fuel Building +24 Ft Elevation Radiation Zones.

These updated Fuel Building radiation zone drawings also reflect incorporation of related design changes that include changing the radiation zone designation for Room UFA19 021 from Zone 8 to Zone 7.

U.S. EPR FSAR Tier 2, Figures 12.3-33 and 12.3-34 will be revised to correctly change the radiation zone designation for the loading hall (UFA10 015) from Yellow (4) to Red (6).

The footnote on U.S. EPR FSAR Tier 2, Figures 12.3-33 and 12.3-34 will also be revised to remove the text pertaining to access control in accordance with 10 CFR 20.1601. This commitment to maintain access control to high radiation areas per 10 CFR 20.1601 is specified in U.S. EPR FSAR Tier 2, Section 12.3.1.8.

Discussion Related to the Response to RAI 43, Supplement 2, Question 14.03.08-1, Part (1)(b)

U.S. EPR FSAR Tier 1, Table 2.1.1-3—Radiation Barriers, lists Nuclear Island structures that include radiation barriers for normal operation and post-accident radiation shielding.

In the response to RAI 43, Supplement 2, Question 14.03.08-1, Part (1)(b), U.S. EPR FSAR Tier 1, Table 2.1.1-3, was revised to include additional structures providing radiation shielding during normal operations. The criteria used to identify these additional safety-significant structures is an area where a radiation zone 3 compartment (dose rate ≤ 2.5 mRem/hr) is immediately adjacent to a radiation zone 7 or 8 compartment (dose rates > 5 mRem/hr).

The response to RAI 43, Supplement 2, Question 14.03.08-1, Part (1)(b) includes the following supporting information:

“Part (1)(b):

Items associated with 10 CFR Part 20, such as structures credited for radiation shielding, were reviewed during the development of U.S. EPR FSAR Tier 1. An expert panel reviewed key safety and integrated plant analyses. Using a graded approach, they determined that the structures providing radiation shielding needed to reduce doses for personnel performing post-accident actions were safety-significant. The expert panel findings for post-accident radiation shielding are listed in U.S. EPR FSAR, Tier 2, Table 14.3-2—Radiological Analysis (Safety-Significant Features), items 2-11, 2-12, and 2-13. The associated safety-significant radiation shielding structures are listed in U.S. EPR FSAR, Tier 1, Table 2.1.1-3—Radiation Barriers.”

In this supplemental response, U.S. EPR FSAR Tier 1, Table 2.1.1-3, will be revised to reflect the following changes:

- A radiation barrier will be added at the +12 Ft Elevation of the Fuel Building between Room UFA10 015 and Room UFA15 022. It will have a minimum wall thickness of 4.1 feet.
- The minimum wall thickness between Room UFA18 062 and UFA15 022 at the +24 Ft Elevation will be increased from 4.0 to 4.1 feet.

These changes to U.S. EPR FSAR Tier 1, Table 2.1.1-3, are consistent with the criteria that was used to develop the response to RAI 43, Supplement 2, Question 14.03.08-1, Part (1)(b).

The supplemental response to RAI 525, Question 09.01.04-23 does not invalidate the response to RAI 43, Supplement 2, Question 14.03.08-1, Part (1)(b).

Discussion Related to the Response to RAI 150, Supplement 1, Question 12.03-12.04-6

The response to RAI 150, Supplement 1, Question 12.03-12.04-6, addresses dose rates in rooms adjacent to the fuel transfer tube. The response contains the following information:

“The minimum wall thickness required to maintain dose rates in occupied areas adjacent to the fuel transfer tube less than 100 rads per hour is 2.33 ft.”

The supplemental response to RAI 525, Question 09.01.04-23, is not related to any radiation zone and minimum wall thickness assignments addressed in the response to RAI 150, Supplement 1, Question 12.03-12.04-6, nor does it affect the conclusions or results presented in the response to RAI 150, Supplement 1, Question 12.03-12.04-6.

Therefore, the supplemental response to RAI 525, Question 09.01.04-23 does not invalidate the response to RAI 150, Supplement 1, Question 12.03-12.04-6.

FSAR Impact:

U.S. EPR FSAR Tier 1, Table 2.1.1-3 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR FSAR Tier 2, Section 9.1.4.2.1 and Figure 12.3-33, Figure 12.3-34 and Figure 12.3-35 will be revised as described in the response and indicated on the enclosed markup.



Table 2.1.1-3—Radiation Barriers
Sheet 5 of 7

NI Structure	From Room(s) [KKS]	To Room(s) [KKS]	Door ⁽¹⁾	Wall	Slab ⁽²⁾	Elevation(s)	Minimum Thickness (feet)
FB	<u>UFA10 015</u>	<u>UFA15 022</u>		<u>X</u>		<u>+12 feet</u>	<u>4.1</u>
	UFA13 017	UFA15 022		X		+12 feet	4.5
	UFA13 057	UFA15 022		X		+12 feet	4.5
	UFA15 022	—			X	+12 feet	5.8
	UFA18 015	UFA19 021		X		+24 feet	3.4
	UFA18 062	UFA19 021		X		+24 feet	3.4
	UFA17 017	UFA15 022		X		+24 feet	4.5
	UFA18 062	UFA15 022		X		+24 feet	<u>4.0</u>
	UFA17 025	UFA15 022		X		+24 feet	4.5
	UFA17 057	UFA15 022		X		+24 feet	4.5
	UFA17 057 ⁽⁴⁾	UFA17 084		X		+24 feet	1.0
	UFA21 015	UFA19 021		X		+36 feet	3.4
	UFA21 099	UFA19 021		X		+36 feet	3.4
	UFA21 099	UFA15 022		X		+36 feet	4.0
	UFA21 017	UFA15 022		X		+36 feet	4.1
	UFA21 057	UFA15 022		X		+36 feet	4.5
	UFA21 084	UFA16 023		X		+36 feet	4.9
	UFA21 082	UFA16 023		X		+36 feet	4.9
	UFA23 015	UFA19 021		X		+49 feet	3.4
	UFA23 018	UFA19 021		X		+49 feet	3.4
	UFA23 014	UFA19 021		X		+49 feet	3.4
	UFA23 014	UFA15 022		X		+49 feet	4.1
	UFA24 017	UFA15 022		X		+49 feet	4.1



- Verification of the SFP gates integrity to make sure there is no unexpected loss of SFP water level during fuel movement operations.

Other than the handling of fuel and fuel assembly inserts, the inspection and testing of the fuel handling tools and accessible components and equipment are also carried out during the plant normal operation. The calibration of instruments and circuits, and the testing of electrically operated equipment and components, including the checking for proper operation of interlocks, are accomplished.

Spent Fuel Cask Transfer Facility Operation

After sufficient decay, spent fuel assemblies may be removed from the SFP for loading into a spent fuel cask using the SFCTF. The SFCTF includes equipment for receipt and preparation of a spent fuel cask, transfer of the cask within the loading hall, connection of the cask to the loading pit, and removal of the loaded cask from the FB.

The following four workstations perform their respective cask loading and supporting operations:

- Lifting station is where the cask is placed on the SFCTM by the gantry crane (not a part of the SFCTF) outside the FB prior to cask loading, and is removed from the SFCTM by the gantry crane after loading.
- Handling opening station (loading hall) is where empty casks are prepared for fuel loading and loaded casks are prepared for final removal from the FB. Lifting operations are performed by the fuel building auxiliary crane (not a part of the SFCTF) through the handling opening.
- Biological lid handling station (loading hall) is where the biological lid is removed from the empty cask prior to fuel loading, and is placed back on the cask after loading.
- Penetration station (loading hall) is where the cask is connected to the loading pit penetration assembly and spent fuel is loaded using the spent fuel machine. The spent fuel machine and loading pit are not part of the SFCTF.

The SFCTF is designed to be remotely operated during normal operation, with no personnel in the loading hall, from the time the cask is connected to the penetration assembly and to be leak tested (prior to fuel movement) until the biological lid is

placed back on the loaded cask. However, operator entry into the loading hall may be required during this phase of operations for the performance of corrective action or manual operation to address abnormal situations such as:

- Failure of moving parts, such as improper functioning of an anti-seismic locking device, failure of docking mechanism leading to incorrect docking, failure of the spent fuel cask transfer machine (SFCTM) travel drive motor or failure of the biological protections to open.



- Loss of power supply.
- Seismic event.

Shielding is provided on the SFCTM, and by the close tolerances between the cask and the loading hall ceiling, so that occupational doses are minimized if an operator is required to enter the loading hall for abnormal conditions. The under-pool loading configuration precludes contamination of the exterior surface of the cask, which minimizes occupational dose during cask loading operations. The anticipated dose rates for operators in the loading hall during cask handling operation are identified in Figure 12.3-33—Fuel Building +0 Ft Elevation Radiation Zones.

A general description of the SFCTF operations is described in this section. Operator training procedures and guidance for handling the SFCTF loads will be developed in accordance with ASME B30.2-2005 (Reference 8). Operator training and procedures are developed by the COL applicant as described in Sections 13.2 and 13.5.

Receipt and Preparations

Preparations for cask loading operation include preparing the gantry crane to interface with the SFCTM and performing regular inspections and checks of the SFCTM.

After arrival of the spent fuel cask on the transport trailer, a visual and radiological inspection of the cask is performed. The cask is lifted using the gantry crane. The SFCTM is towed under the crane, and the cask is placed on the SFCTM. The positioning of the cask is performed with screw jacks and position measurement equipment and the cask is locked in place on the SFCTM.

The design of the SFCTF does not require the cask to be lifted inside the FB, thus precluding concerns about dropping the cask onto stored fuel or safety-related equipment.

The SFCTM is towed into the FB. The SFCTM is automatically centered using a lateral guiding device sliding against guiding rails on the loading hall walls. The SFCTM brakes are secured. The towing equipment is then removed from the loading hall and the loading hall door closed. The SFCTM is then connected to the fluid systems and the electrical power supply. The SFCTM is moved into the handling area opening and the anti-seismic locking devices are engaged.

The cask is prepared for loading in the handling area. The specific preparation steps depend on the cask design. The following process is considered representative. The handling opening above the cask is opened. Leak-tightness and radiation checks are performed, and lids (except the biological lid) are removed by the auxiliary crane. ~~If a bolted biological lid is used, the~~ flange is unbolted. If necessary, cask-specific adaptors for interface with the SFCTF fluid systems are installed and the centering or

