

ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Monday, February 25, 2013 10:11 PM
To: Snyder, Amy
Cc: Hearn, Peter; DELANO Karen (AREVA); LEIGHLITER John (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); WILLS Tiffany (AREVA); KOWALSKI David (AREVA)
Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 6
Attachments: RAI 525 Supplement 6 Response US EPR DC.pdf
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
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

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
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RAI 525 — 09.01.04-28	2	2
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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
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

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

Phone: 704-805-2223

Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)

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

To: 'Tesfaye, Getachew'

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

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

Charlotte, NC 28262

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: 4234

Mail Envelope Properties (554210743EFE354B8D5741BEB695E6560E6C5E)

Subject: Response to U.S. EPR Design Certification Application RAI No. 525 (6194, 6154), FSAR Ch. 9, Supplement 6
Sent Date: 2/25/2013 10:10:45 PM
Received Date: 2/25/2013 10:10:58 PM
From: WILLIFORD Dennis (AREVA)

Created By: Dennis.Williford@areva.com

Recipients:

"Hearn, Peter" <Peter.Hearn@nrc.gov>
Tracking Status: None
"DELANO Karen (AREVA)" <Karen.Delano@areva.com>
Tracking Status: None
"LEIGHLITER John (AREVA)" <John.Leighliter@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
"WILLS Tiffany (AREVA)" <Tiffany.Wills@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	18041	2/25/2013 10:10:58 PM
RAI 525 Supplement 6 Response US EPR DC.pdf		510168

Options

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

Response to

Request for Additional Information No. 525, Supplement 6

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 09.01.04-32:

OPEN ITEM

Section 9.1.4.2 of US EPR FSAR Revision 4 Interim (August 31, 2011, Response to RAI 385) described that the SFCTM operation take place in the loading hall. However, no detailed structural description of the loading hall is provided, nor is the design category for the loading hall presented. The applicant is requested to provide the following:

- a. Description of whether the loading hall and the cask loading pit are designed as seismic Category I structures.
- b. Description of the relevant codes and standards used for the design of these structures.

Response to Question 09.01.04-32:

- a. U.S. EPR FSAR Tier 2, Section 3.8.4.1 describes the Fuel Building (FB) as a Seismic Category I structure. As shown on U.S. EPR FSAR Tier 2, Figure 3.8-41—Fuel Building Plan Elevation 0 Feet, the loading hall and cask loading pit are located internal to the FB concrete structure. Therefore, the loading hall and cask loading pit are both designed as Seismic Category I structures.
- b. As described in the response to Part (a) of this question, the loading hall is a Seismic Category I structure. U.S. EPR FSAR Tier 2, Section 3.8.4.2 lists the applicable codes and standards used for the design of Seismic Category I structures other than the Reactor Containment Building and Reactor Building.

U.S. EPR FSAR Tier 2, Section 9.1.4.2 will be revised to reflect this information and include references to U.S. EPR FSAR Tier 2, Sections 3.8.4.1 and 3.8.4.2.

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 9.1.4.2 will be revised as described in the response and indicated on the enclosed markup.

Question 09.01.04-35:

OPEN ITEM

The SFCTM is moved in the loading hall on rails which are anchored to the base slab. However, the FSAR does not describe how the anchors are designed and analyzed to ensure adequate structural support for the safe movement of the SFCTM trolley. Therefore, the applicant is requested to provide the description of the analysis/design procedures used for the design of the anchors to ensure adequate structural support for the SFCTM when subject to the SSE loads.

Response to Question 09.01.04-35:

The loading hall and cask loading pit are integral to the Fuel Building (FB) concrete structure. U.S. EPR FSAR Tier 2, Section 3.8.4.1 identifies the FB as an "Other Seismic Category I Structure." That is, the FB is a Seismic Category I structure other than the Reactor Containment Building and Reactor Building. U.S. EPR FSAR Tier 2, Section 3.8.4.4.1 lists the general design procedures applicable to other Seismic Category I structures. The design of anchors and embedments conforms to the requirements of ACI 349-06.

U.S. EPR FSAR Tier 2, Section 9.1.4.2 will be revised to reflect this information and include a reference to U.S. EPR FSAR Tier 2, Section 3.8.4.4.1.

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 9.1.4.2 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

This equipment consists of fuel assembly handling devices such as the refueling machine, FTTF, new fuel elevator, spent fuel machine, auxiliary crane, Spent Fuel Cask Transfer Facility, and fuel racks. The areas associated with the fuel handling equipment are the refueling cavity consisting of the reactor cavity, the core internal storage area and the reactor building transfer compartment, and the fuel pool consisting of the transfer pit, the loading pit and the spent fuel storage pool, loading hall, and the new fuel storage area.

09.01.04-32, -35

Figures showing the overall system arrangement in the RB and FB are provided in Section 3.8. Section 3.8.4.1 describes the FB as a Seismic Category I structure. The loading hall and cask loading pit are integral to the FB concrete structure and are designed as Seismic Category I structures. Section 3.8.4.2 identifies the applicable codes and standards used for the design of Seismic Category I structures other than the RB and Reactor Containment Building. Section 3.8.4.4.1 lists the general design procedures applicable to other Seismic Category I structures. The design of anchors and embedments conforms to the requirements of ACI 349-06. The results of seismic analyses for Seismic Category I structures are given in Section 3.7.

9.1.4.2.1 General Description

The fuel handling equipment can handle a fuel assembly underwater from the time a new fuel assembly is lowered into the underwater fuel storage area until the irradiated fuel assembly is placed in a spent fuel cask for shipment from the site. Underwater transfer of spent fuel assemblies provides radiation shielding and cooling for removal of decay heat. The boric acid concentration in the water is sufficient to preclude criticality.

The reactor cavity, the core internal storage compartment, and the reactor building pool transfer compartment are flooded only for refueling during plant shutdowns. The SFP remains full of water and is always accessible to operating personnel.

New Fuel Handling and Storage

New fuel containers are received in the FB loading bay. Typically, each container carries two fuel assemblies. New fuel containers are raised one at a time through a floor opening to the new fuel examination area located at Elevation +48 feet, 6.75 inches with the use of the auxiliary crane. The new fuel assemblies are removed from the container for individual examination using the auxiliary crane and new fuel handling tool. The new fuel assembly is raised through the floor opening until the fuel assembly lower end clears the fuel pool operating floor level (+64 feet) and is then moved and either lowered in the new fuel dry storage area or in the new fuel elevator basket. This process is repeated for the remaining new fuel containers. The new fuel elevator lowers the fuel assembly into the spent fuel storage pool for underwater storage. Administrative controls prevent movement of a new fuel assembly over the