

ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Friday, February 22, 2013 8:09 AM
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. 526 (6190, 6191), FSAR Ch. 9, Supplement 4
Attachments: RAI 526 Supplement 4 Response US EPR DC.pdf
Importance: High

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the four questions in RAI No. 526 on January 4, 2012. Supplement 1, Supplement 2 and Supplement 3 responses to RAI No. 526 were sent on January 25, 2012, February 24, 2012, and January 9, 2013, respectively, to provide a revised schedule.

The attached file, "RAI 526 Supplement 4 Response US EPR DC.pdf," provides a technically correct and complete response to one question. Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format, which support a final response to RAI 526 Question 09.01.03-15.

The following table indicates the respective pages in the response document, "RAI 526 Supplement 4 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 526 — 09.01.03-15	2	2

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

Question #	Response Date
RAI 526 — 09.01.02-40	May 15, 2013
RAI 526 — 09.01.02-41	May 15, 2013
RAI 526 — 09.01.03-14	May 15, 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 09, 2013 7:55 AM

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. 526 (6190, 6191), FSAR Ch. 9, Supplement 3

Amy,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the four questions in RAI No. 526 on January 4, 2012. Supplement 1 and Supplement 2 responses to RAI No. 526 were sent on January 25, 2012 and February 24, 2012, respectively, to provide a revised schedule.

The schedule for technically correct and complete responses to the remaining questions has been revised as provided below.

Question #	Response Date
RAI 526 — 09.01.02-40	May 15, 2013
RAI 526 — 09.01.02-41	May 15, 2013
RAI 526 — 09.01.03-14	May 15, 2013
RAI 526 — 09.01.03-15	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, February 24, 2012 5:25 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. 526 (6190, 6191), FSAR Ch. 9, Supplement 2

Getachew,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the four questions in RAI No. 526 on January 4, 2012. Supplement 1 response to RAI No. 526 was sent on January 25, 2012 to provide a revised schedule.

The schedule for technically correct and complete responses to the four 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 526 — 09.01.02-40	June 28, 2013
RAI 526 — 09.01.02-41	June 28, 2013
RAI 526 — 09.01.03-14	June 28, 2013
RAI 526 — 09.01.03-15	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 12:15 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); Michael.Miernicki@nrc.gov; peter.hearn@nrc.gov
Subject: Response to U.S. EPR Design Certification Application RAI No. 526 (6190, 6191), FSAR Ch. 9, Supplement 1

Getachew,

AREVA NP Inc. (AREVA NP) provided a preliminary schedule for responding to the four questions in RAI No. 526 on January 4, 2012.

The preliminary schedule for the response to these four questions has been changed as 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 526 — 09.01.02-40	February 21, 2012
RAI 526 — 09.01.02-41	February 21, 2012
RAI 526 — 09.01.03-14	February 21, 2012
RAI 526 — 09.01.03-15	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: WILLIFORD Dennis (RS/NB)
Sent: Wednesday, January 04, 2012 4:17 PM
To: 'Tesfaye, Getachew'
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. 526 (6190, 6191), FSAR Ch. 9

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 526 Response US EPR DC.pdf," provides a schedule since technically correct and complete responses to the four questions cannot be provided at this time.

The following table indicates the respective pages in the response document, "RAI 526 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 526 — 09.01.02-40	2	2
RAI 526 — 09.01.02-41	3	3
RAI 526 — 09.01.03-14	4	4
RAI 526 — 09.01.03-15	5	5

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 January 25, 2012.

Question #	Response Date
RAI 526 — 09.01.02-40	January 25, 2012
RAI 526 — 09.01.02-41	January 25, 2012
RAI 526 — 09.01.03-14	January 25, 2012
RAI 526 — 09.01.03-15	January 25, 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: Friday, November 25, 2011 10:43 AM
To: ZZ-DL-A-USEPR-DL
Cc: Hernandez, Raul; Dreisbach, Jason; Segala, John; Hearn, Peter; Colaccino, Joseph
Subject: U.S. EPR Design Certification Application RAI No. 526 (6190, 6191), FSAR Ch. 9

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on November 11, 2011, and on November 21, 2011, you informed us that the RAI is clear and no further clarification is needed. As a result, no change is made to the draft RAI. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 days, it is expected that a date for receipt of this information will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the published schedule.

Thanks,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 4225

Mail Envelope Properties (554210743EFE354B8D5741BEB695E6560E1CB4)

Subject: Response to U.S. EPR Design Certification Application RAI No. 526 (6190, 6191), FSAR Ch. 9, Supplement 4
Sent Date: 2/22/2013 8:09:15 AM
Received Date: 2/22/2013 8:09:20 AM
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	8537	2/22/2013 8:09:20 AM
RAI 526 Supplement 4 Response US EPR DC.pdf		123316

Options

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

Response to

Request for Additional Information No. 526, Supplement 4

11/25/2011

U.S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 09.01.02 - New and Spent Fuel Storage

SRP Section: 09.01.03 - Spent Fuel Pool Cooling and Cleanup System

Application Section: 09.01

QUESTIONS for Balance of Plant Branch 1 (SBPA)

Question 09.01.03-15:**OPEN ITEM**

In FSAR Tier 2 Section 9.1.3.4 "Safety Evaluation," Item 7, the applicant states that the safety-related FPCS pumps will automatically trip on a low SFP level of 16.9 m (55 ft 6 in). The FSAR further states that the SFP is provided with a low level and a low-low level alarms at elevations of 18.7 m (61 ft 6 in) and 17.8 m (58 ft 6 in) respectively. In Item 10, the application states that Seismic Category I piping and valves are provided to allow isolation of purification piping exiting the bottom of the FB pools. It is not clear to the staff that all the piping that exits and connects to the SFP at or below the elevation of 16.9 m (55 ft 6 in) is design to Seismic Category I criteria.

The staff requests the applicant to clarify in FSAR Tier 2 Section 9.1.3 that all the piping and valves that connects with the SFP at or below the elevation of 16.9 m (55 ft 6 in) are design to seismic criteria I, and to that any non-seismic pipe that extends below the elevation of 16.9 m (55 ft 6 in) are provided of an anti-siphon device.

Response to Question 09.01.03-15:

The Spent Fuel Pool (SFP) piping penetrations with the lowest elevation are the two common suction pipes to each train of the Fuel Pool Cooling System (FPCS) pumps. These two pipes penetrate the SFP at a centerline elevation of approximately 54 feet 1 inch. These pipes are the only pipes that penetrate the SFP below 55 feet 6 inches. These pipes are classified Seismic Category I and contain siphon breakers. The siphon breaker pipes tap into the top of the suction pipes and limit draining the SFP below the elevation of the bottom inside diameter of the pipe at approximately 53 feet 6 inches.

The Fuel Pool Purification System (FPPS) supply and return purification piping that enters the top of the SFP is classified non-seismic (NSC) and provided with siphon breaker devices. The FPPS piping exiting the bottom of the Fuel Building (FB) pools is in the cask loading pit and FB transfer compartment. The cask loading pit and FB transfer compartment are adjacent to and separated from the SFP by a weir with two Seismic Category I gates above the weir. All piping connected to the cask loading pit and FB transfer compartment below 55 feet 6 inches is classified as Seismic Category I.

U.S. EPR FSAR Tier 2, Section 9.1.3.4 will be revised to reflect that piping and valves connected to the SFP at or below an elevation of 55 feet 6 inches are designed to Seismic Category I and any non-seismic pipe that extends below that elevation is provided with an anti-siphon device.

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 9.1.3.4 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

leakage. In addition to SFP level instrumentation, SFP leakage detection, Fuel Building sump alarms and radiation monitors will provide timely detection and MCR notification of SFP or system component leakage to allow initiation of appropriate actions.

10. GDC 61 as related to the system design:

- The FPCPS is designed to permit appropriate periodic functional testing to confirm component integrity, operability of active components, and operational performance of the system, as described in Section 9.1.3.5. 09.01.03-15
- Safety-related and Seismic Category I piping and valves are provided to allow isolation of the purification piping exiting the bottom of the Fuel Building Cask Loading Pit & Fuel Transfer Compartment and Reactor Building pools to provide containment of radioactive water in case of failure of non-safety portions of the system. Piping and valves that connect to the SFP at or below an elevation of 55 feet 6 inches are designed to Seismic Category 1 and any non-seismic pipe that extends below that elevation is provided with an anti-siphon device. The purification piping that enters the top of the SFP is classified non-seismic and is provided with siphon breaker devices to preclude drainage below the elevation of 55 feet 6 inches.
- The FPCPS decay heat removal capability is addressed by item 5.
- The capability to prevent reduction in SFP inventory is addressed by item 7, item 8, and item 9.
- The FPPS removes corrosion products, radioactive materials and impurities from the pool water and surface. The ion exchangers and filters are designed to maintain safe operating conditions in the area and to reduce occupational exposure to radiation. Strainers are provided in pipes that exit the bottom of a pool to prevent radioactive particles from being spread throughout the piping system. Instrumentation is provided to monitor ion exchanger performance and filter loading to detect conditions that could result in excessive radiation levels.

11. ALARA principles have been incorporated into the FPCPS design with respect to providing adequate shielding, provisions for decontamination, and the use of remote methods for filter replacement.

- The capability for decontamination and flushing with demineralized water is provided for the FPCPS pumps, heat exchangers, filters, ion exchanger, and resin traps.

12. The components and systems relied on for the performance of FPCPS safety functions are not shared with other nuclear units since this is a single unit plant.