

## ArevaEPRDCPEm Resource

---

**From:** WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]  
**Sent:** Monday, February 06, 2012 6:23 PM  
**To:** Tesfaye, Getachew  
**Cc:** BENNETT Kathy (AREVA); DELANO Karen (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); KOWALSKI David (AREVA)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 536 (6260), FSAR Ch. 9  
**Attachments:** RAI 536 Response US EPR DC.pdf

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 536 Response US EPR DC.pdf," provides a schedule since a technically correct and complete response to the one question cannot be provided at this time.

The following table indicates the respective pages in the response document, "RAI 536 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 536 — 09.01.04-41	2	2

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

Question #	Response Date
RAI 536 — 09.01.04-41	April 11, 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](mailto:Dennis.Williford@areva.com)

---

**From:** Tesfaye, Getachew [<mailto:Getachew.Tesfaye@nrc.gov>]  
**Sent:** Wednesday, January 04, 2012 6:55 PM  
**To:** ZZ-DL-A-USEPR-DL  
**Cc:** Jenkins, Joel; Terao, David; Hearn, Peter; Segala, John; ArevaEPRDCPEm Resource  
**Subject:** U.S. EPR Design Certification Application RAI No. 536 (6260), FSAR Ch. 9

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on December 23, 2011, and on January 4, 2012, 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/LB1  
(301) 415-3361

**Hearing Identifier:** AREVA\_EPR\_DC\_RAIs  
**Email Number:** 3733

**Mail Envelope Properties** (2FBE1051AEB2E748A0F98DF9EEE5A5D4AE881D)

**Subject:** Response to U.S. EPR Design Certification Application RAI No. 536 (6260),  
FSAR Ch. 9  
**Sent Date:** 2/6/2012 6:23:19 PM  
**Received Date:** 2/6/2012 6:23:18 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  
"KOWALSKI David (AREVA)" <David.Kowalski@areva.com>  
Tracking Status: None  
"Tsfaye, Getachew" <Getachew.Tsfaye@nrc.gov>  
Tracking Status: None

**Post Office:** auscharm02.adom.ad.corp

Files	Size	Date & Time
MESSAGE	2123	2/6/2012 6:23:18 PM
RAI 536 Response US EPR DC.pdf		61252

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

**Response to**

**Request for Additional Information No. 536(6260), Revision 0**

**01/04/2012**

**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: 9.1.4**

**QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR  
Projects) (CIB1)**

**Question 09.01.04-41:****OPEN ITEM**

FSAR Section 3.8.3.1.1 states that a permanently installed cavity seal ring and neutron shield assembly rests on an embedded ring at the top of the wall, and is fabricated of stainless steel and radiation shielding material that bridges the annular gap between the reactor vessel and the vessel cavity concrete wall. The cavity seal is designed to meet the stress limits of ASME BPVC, Section III, Subsection ND. Seal and structural welds are made in accordance with ASME BPVC, Section IX and are examined in accordance with ASME BPVC, Section V.

The response from AREVA to RAI 337, Question 09.01.04-14, changes the name of the seal to "ring," and describes the reactor vessel cavity ring as a permanently installed stainless steel assembly welded to the reactor vessel and a support structure embedded in the reactor building concrete. It clarifies that this cavity ring is a mechanical component designed in accordance with ASME Section III, Subsection ND. Base metal and weld materials are consistent with specifications in ASME BPVC Section II. Welding procedures and welders are qualified in accordance with ASME BPVC Section IX. Welds are examined in accordance with ASME BPVC, Section V. It also includes Figure 09.01.04-14-1 showing the reactor cavity ring arrangement.

Based on these elements, especially from the Figure 09.01.04-14-1, the staff deduced that some parts of the cavity ring assembly are welded to the reactor vessel. However, the staff was not able to identify precisely which ones and how they are attached to the reactor vessel; therefore, it is not clear to the staff how the cavity ring assembly could affect the reactor vessel material and integrity.

Because of the interfaces between the cavity ring assembly and the reactor vessel, the staff requests the applicant provide the following information to assure that this ring assembly will not adversely impact the materials and integrity of the reactor vessel (e.g., to behave in a brittle manner or increase the probability of rapidly propagating failure):

- a. Describe in detail the permanent refueling cavity ring assembly, including the identification of the materials that are used;
- b. Identify any fasteners or welds used in the cavity ring assembly;
- c. Describe in detail the connections between the cavity ring assembly and the reactor vessel, particularly with the reactor vessel pressure retaining portion. If welding is used, describe any design considerations (such as weld joint type or location) or controls on welding (such as weld size or heat input limitations) that assure that welding has no adverse impact on the reactor vessel material and integrity.

**Response to Question 09.01.04-41:**

A response to this question will be provided by April 11, 2012.