

## ArevaEPRDCPEm Resource

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**From:** WELLS Russell (AREVA) [Russell.Wells@areva.com]  
**Sent:** Friday, May 20, 2011 7:30 AM  
**To:** Tesfaye, Getachew  
**Cc:** WILLIFORD Dennis (AREVA); CORNELL Veronica (EXTERNAL AREVA); BENNETT Kathy (AREVA); DELANO Karen (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 464, FSAR Ch. 14 , Supplement 2  
**Attachments:** RAI 464 Supplement 2 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI 464 on January 27, 2011. On March 29, 2011, AREVA NP submitted Supplement 1 to provide a revised schedule for Question 14.03.03-50.

The attached file, "RAI 464 Supplement 2 Response US EPR DC.pdf" provides a technically correct and complete response to Question 14.03.03-50, as committed. Appended to this file are the affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 464 Question 14.03.03-50.

The following table indicates the respective pages in the response document, "RAI 464 Supplement 2 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 464 — 14.03.03-50	2	3

This concludes the formal AREVA NP response to RAI 464, and there are no questions from this RAI for which AREVA NP has not provided responses.

*Sincerely,*

*Russ Wells*

*U.S. EPR Design Certification Licensing Manager*

*AREVA NP, Inc.*

*3315 Old Forest Road, P.O. Box 10935*

*Mail Stop OF-57*

*Lynchburg, VA 24506-0935*

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[Russell.Wells@Areva.com](mailto:Russell.Wells@Areva.com)

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**From:** WELLS Russell (RS/NB)  
**Sent:** Tuesday, March 29, 2011 4:09 PM  
**To:** 'Tesfaye, Getachew'  
**Cc:** CORNELL Veronica (External RS/NB); BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 464, FSAR Ch. 14 , Supplement 1

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI 464 on January 27, 2011.

The schedule for Question 14.03.03-50 is being revised to allow additional time for AREVA NP to address NRC comments. The schedule for the remaining question is unchanged.

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

Question #	Response Date
RAI 464 — 14.03.03-50	<b>May 26, 2011</b>

*Sincerely,*

*Russ Wells*

*U.S. EPR Design Certification Licensing Manager*

*AREVA NP, Inc.*

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[\*Russell.Wells@Areva.com\*](mailto:Russell.Wells@Areva.com)

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**From:** BRYAN Martin (External RS/NB)

**Sent:** Thursday, January 27, 2011 9:48 AM

**To:** 'Tesyfaye, Getachew'

**Cc:** DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); CORNELL Veronica (External RS/NB)

**Subject:** Response to U.S. EPR Design Certification Application RAI No. 464, FSAR Ch. 14

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 464 Response US EPR DC.pdf" provides a schedule since a technically correct and complete response to the question can not be provided at this time.

The following table indicates the respective pages in the response document, "RAI 464 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 464 — 14.03.03-50	2	2

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

Question #	Response Date
RAI 464 — 14.03.03-50	March 29, 2011

Sincerely,

Martin (Marty) C. Bryan

U.S. EPR Design Certification Licensing Manager  
AREVA NP Inc.  
Tel: (434) 832-3016  
702 561-3528 cell  
[Martin.Bryan.ext@areva.com](mailto:Martin.Bryan.ext@areva.com)

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**From:** Tesfaye, Getachew [<mailto:Getachew.Tesfaye@nrc.gov>]  
**Sent:** Tuesday, December 21, 2010 11:27 AM  
**To:** ZZ-DL-A-USEPR-DL  
**Cc:** Chakravorty, Manas; Hawkins, Kimberly; Miernicki, Michael; Colaccino, Joseph; ArevaEPRDCPEm Resource  
**Subject:** U.S. EPR Design Certification Application RAI No. 464 (5282), FSAR Ch. 14

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on December 8, 2010, and discussed with your staff on December 16, 2010. No change is made to the Draft RAI 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, 2010 thru January 3, 2011, to account for the holiday season** as discussed with AREVA NP Inc. For any RAIs that cannot be answered **within 45 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:** 2999

**Mail Envelope Properties** (1F1CC1BBDC66B842A46CAC03D6B1CD4104622974)

**Subject:** Response to U.S. EPR Design Certification Application RAI No. 464, FSAR Ch. 14 , Supplement 2  
**Sent Date:** 5/20/2011 7:30:03 AM  
**Received Date:** 5/20/2011 7:30:07 AM  
**From:** WELLS Russell (AREVA)

**Created By:** Russell.Wells@areva.com

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Tracking Status: None

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Tracking Status: None

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Tracking Status: None

**Post Office:** AUSLYNCMX02.adom.ad.corp

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	5180	5/20/2011 7:30:07 AM
RAI 464 Supplement 2 Response US EPR DC.pdf		54546

**Options**

**Priority:** Standard

**Return Notification:** No

**Reply Requested:** No

**Sensitivity:** Normal

**Expiration Date:**

**Recipients Received:**

**Response to**

**Request for Additional Information No. 464 (5282), Revision 0,  
Supplement 2**

**12/21/2010**

**U. S. EPR Standard Design Certification**

**AREVA NP Inc.**

**Docket No. 52-020**

**SRP Section: 14.03.03 - Piping Systems and Components - Inspections, Tests,  
Analyses, and Acceptance Criteria**

**Application Section: 14.03.03**

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

**Question 14.03.03-50:**

In a markup of the U.S. EPR FSAR which was attached to the response to RAI 370, Question 03.07.03-38, the applicant provided an addition to U.S. EPR FSAR Section 14.3.3 which provides references to ITAAC in Tier 1, Chapter 3 addressing non-system based topics. The addition identified was Section 3.9 addressing seismic subsystem interaction. The staff has reviewed the Tier 1, Section 3.9 write-up against the requirements of 10 CFR 52.47(b)(1) and has the following comments regarding the ITAAC in Table 3.9-1—Seismic Subsystem Interaction ITAAC.

- a. The applicant is requested to revise the Commitment Wording which currently states that a seismic interaction analysis summary exists that concludes that non-Seismic Category I subsystems located within a potential impact zone of a Seismic Category I subsystem will not impair the ability of the Seismic Category I subsystems to perform their intended safety function. The commitment wording should express fundamental safety commitments of the plant design. Thus the commitment wording should not be that an analysis summary exists but that non-Seismic Category I subsystems located within a potential impact zone of a Seismic Category I subsystem will not impair the ability of the Seismic Category I subsystems to perform their intended safety function. The existence of the analysis summary forms part of the Acceptance Criteria which is intended to demonstrate that the commitment wording has been met.
- b. Under Inspections, Test, and Analysis, an item c should be added to confirm that all interactions between Seismic Category I and Non-Seismic Category I SSCs have been identified and necessary prevention features have been installed.
- c. Under Acceptance Criteria, an item c should be added stating that a report exists which confirms that all interactions between Seismic Category I and Non-Seismic Category I SSCs have been identified and necessary prevention features have been installed.

**Response to Question 14.03.03-50:****Item a:**

U.S. EPR FSAR Tier 1, Section 3.9 and Table 3.9-1, Item 1 commitment wording will be revised to remove “A seismic interaction analysis exists that concludes that.”

**Items b and c:**

The Inspections, Tests and Analyses Item a and Item b in U.S. EPR FSAR Tier 1, Table 3.9-1, will be combined and revised to require an inspection to confirm that non-Seismic Category I subsystems will not impair the ability of Seismic Category I subsystems to perform their safety function. In addition, Acceptance Criteria Item a and Item b will be combined and revised to state that a report exists that concludes that a non-Seismic Category I subsystem located within a potential impact zone of a Seismic Category I subsystem will not impair the ability of the Seismic Category I subsystem to perform its safety function as demonstrated by one of the following criteria:

- Seismic Category I subsystems are isolated from non-Seismic Category I subsystems so that interaction does not occur.

- Seismic Category I subsystems are analyzed to confirm that its safety function is not lost as a result of impact from a non- Seismic Category I subsystem.
- A Seismic Category II restraint system is used to verify that no interaction occurs between the Seismic Category I subsystem and the non-Seismic Category I subsystem.

**FSAR Impact:**

U.S. EPR FSAR, Tier 1, Section 3.9 and Table 3.9-1 will be revised as described in the response and indicated on the enclosed markup.

# U.S. EPR Final Safety Analysis Report Markups



### **3.9 Seismic Subsystem Interaction**

#### **1.0 Description**

Non-Seismic Category I subsystems will not impair the ability of Seismic Category I subsystems to perform their intended safety function.

#### **2.0 Design Features**

2.1 ~~A seismic interaction analysis summary exists that concludes that a~~ Non-Seismic Category I subsystems located within a potential impact zone of a Seismic Category I subsystem will not impair the ability of the Seismic Category I subsystems to perform their intended safety function.

14.03.03-50

#### **3.0 Inspections, Tests, Analyses, and Acceptance Criteria**

Table 3.9-1 lists the seismic interaction analysis ITAAC.

**Table 3.9-1—Seismic Subsystem Interaction ITAAC**

<b>Commitment Wording</b>	<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
<p>2.1 <del>A seismic interaction analysis summary exists that concludes that a</del> Non-Seismic Category I subsystems located within a potential impact zone of a Seismic Category I subsystem will not impair the ability of the Seismic Category I subsystems to perform their intended safety function.</p>	<p>Inspections will be performed to confirm that non-seismic Category I subsystems will not impair the ability of Seismic Category I subsystems to perform their safety function. <del>a. A seismic interaction analysis will be performed.</del></p> <p style="text-align: center;">14.03.03-50</p> <p style="text-align: center;">14.03.03-50</p> <p><del>b. Inspections of as built seismic interaction prevention features will be performed. Analyses will be performed to reconcile deviations with the as-designed seismic interaction prevention features.</del></p>	<p><del>a. A seismic interaction analysis</del> A report exists that concludes that a non-Seismic Category I subsystems located within a potential impact zone of a Seismic Category I subsystem will not impair the ability of the Seismic Category I subsystems to perform <del>their intended</del> its safety function as demonstrated by one of the following criteria:</p> <ul style="list-style-type: none"> <li>Seismic Category I subsystems are isolated from non-Seismic Category I subsystems so that interaction does not occur.</li> <li>Seismic Category I subsystems are analyzed to confirm that its safety function is not lost as a result of impact from a non-Seismic Category I subsystem.</li> <li>A Seismic Category II restraint system is used to verify that no interaction occurs between the Seismic Category I subsystem and the non-Seismic Category I subsystem.</li> </ul> <p><del>b. Reconciliation of deviations to the as-designed seismic interaction features have been performed and conclude that non-Seismic Category I subsystems located within a potential impact zone of a Seismic Category I subsystem will not impair the ability of the Seismic Category I subsystems to perform their intended safety function.</del></p>