

## ArevaEPRDCPEm Resource

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**From:** DUNCAN Leslie E (AREVA NP INC) [Leslie.Duncan@areva.com]  
**Sent:** Tuesday, January 19, 2010 12:02 PM  
**To:** Tesfaye, Getachew  
**Cc:** DELANO Karen V (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); VAN NOY Mark (EXT)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 291, FSAR Ch. 3, Supplement 2  
**Attachments:** RAI 291 Supplement 2 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. (AREVA NP) provided responses to 1 of the 19 questions of RAI No. 291 on October 19, 2009. AREVA NP submitted Supplement 1 to the response on January 7, 2010 providing a schedule for the remaining 18 questions. The attached file, "RAI 291 Supplement 2 Response US EPR DC.pdf" provides a technically correct and complete response to 1 of the remaining 18 questions, as committed.

The following table indicates the respective pages in the response document, "RAI 291 Supplement 2 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

| Question #            | Start Page | End Page |
|-----------------------|------------|----------|
| RAI 291 — 03.07.02-59 | 2          | 2        |

The schedule for technically correct and complete responses to the remaining 17 questions is unchanged and provided below:

| Question #            | Response Date     |
|-----------------------|-------------------|
| RAI 291 — 03.02.01-11 | March 11, 2010    |
| RAI 291 — 03.07.01-26 | February 11, 2010 |
| RAI 291 — 03.07.02-60 | March 11, 2010    |
| RAI 291 — 03.07.02-61 | March 11, 2010    |
| RAI 291 — 03.07.02-62 | February 11, 2010 |
| RAI 291 — 03.09.05-23 | February 11, 2010 |
| RAI 291 — 03.09.05-24 | February 11, 2010 |
| RAI 291 — 03.09.05-25 | February 11, 2010 |
| RAI 291 — 03.09.05-26 | February 11, 2010 |
| RAI 291 — 03.09.05-27 | February 11, 2010 |
| RAI 291 — 03.10-24    | February 11, 2010 |
| RAI 291 — 03.10-25    | February 11, 2010 |
| RAI 291 — 03.10-26    | February 11, 2010 |
| RAI 291 — 03.10-27    | March 11, 2010    |
| RAI 291 — 03.10-28    | February 11, 2010 |
| RAI 291 — 03.10-29    | February 11, 2010 |
| RAI 291 — 03.10-30    | February 11, 2010 |

Sincerely,

Les Duncan  
Licensing Engineer  
**AREVA NP Inc.**  
An AREVA and Siemens Company

Tel: (434) 832-2849  
[Leslie.Duncan@areva.com](mailto:Leslie.Duncan@areva.com)

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**From:** Pederson Ronda M (AREVA NP INC)  
**Sent:** Thursday, January 07, 2010 5:31 PM  
**To:** 'Tefaye, Getachew'  
**Cc:** BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); VAN NOY Mark (EXT)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 291, FSAR Ch. 3, Supplement 1

Getachew,

AREVA NP Inc. (AREVA NP) provided a response to 1 of the 19 questions of RAI No. 291 on October 19, 2009.

Due to changes in engineering design approaches and supporting documents, holiday work schedules, and the volume of requests for additional information, responses for the remaining 18 questions are delayed.

The schedule for technically correct and complete responses to the remaining 18 questions has been changed and is provided below:

| Question #            | Response Date     |
|-----------------------|-------------------|
| RAI 291 — 03.02.01-11 | March 11, 2010    |
| RAI 291 — 03.07.01-26 | February 11, 2010 |
| RAI 291 — 03.07.02-59 | January 21, 2010  |
| RAI 291 — 03.07.02-60 | March 11, 2010    |
| RAI 291 — 03.07.02-61 | March 11, 2010    |
| RAI 291 — 03.07.02-62 | February 11, 2010 |
| RAI 291 — 03.09.05-23 | February 11, 2010 |
| RAI 291 — 03.09.05-24 | February 11, 2010 |
| RAI 291 — 03.09.05-25 | February 11, 2010 |
| RAI 291 — 03.09.05-26 | February 11, 2010 |
| RAI 291 — 03.09.05-27 | February 11, 2010 |
| RAI 291 — 03.10-24    | February 11, 2010 |
| RAI 291 — 03.10-25    | February 11, 2010 |
| RAI 291 — 03.10-26    | February 11, 2010 |
| RAI 291 — 03.10-27    | March 11, 2010    |
| RAI 291 — 03.10-28    | February 11, 2010 |
| RAI 291 — 03.10-29    | February 11, 2010 |
| RAI 291 — 03.10-30    | February 11, 2010 |

Sincerely,

*Ronda Pederson*

[ronda.pederson@areva.com](mailto:ronda.pederson@areva.com)

Licensing Manager, U.S. EPR Design Certification

**AREVA NP Inc.**

An AREVA and Siemens company

3315 Old Forest Road

Lynchburg, VA 24506-0935

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**From:** Pederson Ronda M (AREVA NP INC)  
**Sent:** Monday, October 19, 2009 6:54 PM  
**To:** 'Tesfaye, Getachew'  
**Cc:** BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); VAN NOY Mark (EXT)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 291, FSAR Ch. 3

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 291 Response US EPR DC.pdf," provides a technically correct and complete response to 1 of the 19 questions.

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 291 Question 03.07.03-36

The following table indicates the respective page in the response document, "RAI 291 Response US EPR DC.pdf," that contains AREVA NP's response to the subject questions.

| Question #            | Start Page | End Page |
|-----------------------|------------|----------|
| RAI 291 — 03.02.01-11 | 2          | 2        |
| RAI 291 — 03.07.01-26 | 3          | 3        |
| RAI 291 — 03.07.02-59 | 4          | 4        |
| RAI 291 — 03.07.02-60 | 5          | 5        |
| RAI 291 — 03.07.02-61 | 6          | 6        |
| RAI 291 — 03.07.02-62 | 7          | 7        |
| RAI 291 — 03.07.03-36 | 8          | 9        |
| RAI 291 — 03.09.05-23 | 10         | 10       |
| RAI 291 — 03.09.05-24 | 11         | 11       |
| RAI 291 — 03.09.05-25 | 12         | 12       |
| RAI 291 — 03.09.05-26 | 13         | 13       |
| RAI 291 — 03.09.05-27 | 14         | 14       |
| RAI 291 — 03.10-24    | 15         | 15       |
| RAI 291 — 03.10-25    | 16         | 16       |
| RAI 291 — 03.10-26    | 17         | 17       |
| RAI 291 — 03.10-27    | 18         | 18       |
| RAI 291 — 03.10-28    | 19         | 19       |
| RAI 291 — 03.10-29    | 20         | 20       |
| RAI 291 — 03.10-30    | 21         | 21       |

A complete answer is not provided for 18 of the 19 questions. The schedule for a technically correct and complete response to these questions is provided below.

| Question #            | Response Date   |
|-----------------------|-----------------|
| RAI 291 — 03.02.01-11 | January 7, 2010 |
| RAI 291 — 03.07.01-26 | January 7, 2010 |
| RAI 291 — 03.07.02-59 | January 7, 2010 |
| RAI 291 — 03.07.02-60 | January 7, 2010 |
| RAI 291 — 03.07.02-61 | January 7, 2010 |

|                       |                 |
|-----------------------|-----------------|
| RAI 291 — 03.07.02-62 | January 7, 2010 |
| RAI 291 — 03.09.05-23 | January 7, 2010 |
| RAI 291 — 03.09.05-24 | January 7, 2010 |
| RAI 291 — 03.09.05-25 | January 7, 2010 |
| RAI 291 — 03.09.05-26 | January 7, 2010 |
| RAI 291 — 03.09.05-27 | January 7, 2010 |
| RAI 291 — 03.10-24    | January 7, 2010 |
| RAI 291 — 03.10-25    | January 7, 2010 |
| RAI 291 — 03.10-26    | January 7, 2010 |
| RAI 291 — 03.10-27    | January 7, 2010 |
| RAI 291 — 03.10-28    | January 7, 2010 |
| RAI 291 — 03.10-29    | January 7, 2010 |
| RAI 291 — 03.10-30    | January 7, 2010 |

Sincerely,

*Ronda Pederson*

[ronda.pederson@areva.com](mailto:ronda.pederson@areva.com)

Licensing Manager, U.S. EPR Design Certification

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

**Sent:** Thursday, September 17, 2009 7:43 AM

**To:** ZZ-DL-A-USEPR-DL

**Cc:** Wong, Yuken; Chakravorty, Manas; Chen, Pei-Ying; Dixon-Herrity, Jennifer; Samaddar, Sujit; Hawkins, Kimberly; Miernicki, Michael; Patel, Jay; Colaccino, Joseph; ArevaEPRDCPEm Resource

**Subject:** U.S. EPR Design Certification Application RAI No. 291(3616,3691,3706,3707,3685,3703), FSAR Ch. 3

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on September 10, 2009, and on September 16, 2009, 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:** 1095

**Mail Envelope Properties** (F322AA625A7A7443A9C390B0567503A1017FA8C8)

**Subject:** Response to U.S. EPR Design Certification Application RAI No. 291, FSAR Ch.  
3, Supplement 2  
**Sent Date:** 1/19/2010 12:02:16 PM  
**Received Date:** 1/19/2010 12:02:22 PM  
**From:** DUNCAN Leslie E (AREVA NP INC)

**Created By:** Leslie.Duncan@areva.com

**Recipients:**

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

Tracking Status: None

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Tracking Status: None

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Tracking Status: None

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| Files                                       | Size | Date & Time           |
|---------------------------------------------|------|-----------------------|
| MESSAGE                                     | 7919 | 1/19/2010 12:02:22 PM |
| RAI 291 Supplement 2 Response US EPR DC.pdf |      | 57878                 |

**Options**

**Priority:** Standard

**Return Notification:** No

**Reply Requested:** No

**Sensitivity:** Normal

**Expiration Date:**

**Recipients Received:**

**Response to**

**Request for Additional Information No. 291, Supplement 2 (3616, 3691, 3706, 3707,  
3685, 3703), Revision 1**

**9/10/2009**

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

**AREVA NP Inc.**

**Docket No. 52-020**

**SRP Section: 03.02.01 - Seismic Classification**

**SRP Section: 03.07.01 - Seismic Design Parameters**

**SRP Section: 03.07.02 - Seismic System Analysis**

**SRP Section: 03.07.03 - Seismic Subsystem Analysis**

**SRP Section: 03.09.05 - Reactor Pressure Vessel Internals**

**SRP Section: 03.10 - Seismic and Dynamic Qualification of Mechanical and  
Electrical Equipment**

**Application Section: EPR FSAR Section 3.10**

**QUESTIONS for Engineering Mechanics Branch 2 (ESBWR/ABWR Projects)  
(EMB2)**

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

**Question 03.07.02-59:**

Follow-up to Question 03.07.02-36

In Section 3.7.2 of the FSAR, the applicant states that 25 percent of the floor design live load should be included in the dynamic model. Since the System Design Requirements Document cites the floor design load as 400 psf, a value of 100 psf should have been used in the two seismic models to represent the live load mass. The applicant is requested to clarify and justify the value that was used in the seismic model to represent the live load mass, if different from 100 psf, and provide the impact of this choice on the analysis.

**Response to Question 03.07.02-59:**

The Nuclear Island Common Basemat Structure stick model has been replaced by a finite element model that applies live loads equal to 25 percent of the floor design load specified by the System Design Requirements Document.

**FSAR Impact:**

The U.S. EPR FSAR will not be changed as a result of this question.