

ArevaEPRDCPEm Resource

From: WELLS Russell (AREVA) [Russell.Wells@areva.com]
Sent: Thursday, April 28, 2011 8:33 AM
To: Tesfaye, Getachew
Cc: BALLARD Bob (AREVA); BURSTEIN Nissen (AREVA); WILLIAMSON Rick (AREVA); BUDZIK Dennis (AREVA); NOXON David (AREVA); BENNETT Kathy (AREVA); DELANO Karen (AREVA); HALLINGER Pat (EXTERNAL AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); WILLIFORD Dennis (AREVA)
Subject: Draft Response to U.S. EPR Design Certification Application RAI No. 481(5642,5664,5587,5622), FSAR Ch. 3, Question 03-12-25
Attachments: RAI 481 Question 03-12-25 Response US EPR DC - DRAFT.pdf

Getachew,

Attached is a draft response for RAI No. 481, Question 03-12-25 as shown below in advance of the May 11, 2011 final date.

Let me know if the staff has questions or if this can be sent as a final response.

Sincerely,

Russ Wells
U.S. EPR Design Certification Licensing Manager
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From: Tesfaye, Getachew [<mailto:Getachew.Tesfaye@nrc.gov>]
Sent: Monday, April 11, 2011 5:03 PM
To: ZZ-DL-A-USEPR-DL
Cc: McNally, Richard; Hsu, Kaihwa; Hsia, Anthony; Dixon-Herrity, Jennifer; Strnisha, James; Terao, David; Miernicki, Michael; Clark, Phyllis; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 481(5642,5664,5587,5622), FSAR Ch. 3

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on April 4, 2011, and discussed with your staff on April 11, 2011. No changes were 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. 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: 2901

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Subject: Draft Response to U.S. EPR Design Certification Application RAI No. 481(5642,5664,5587,5622), FSAR Ch. 3, Question 03-12-25
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From: WELLS Russell (AREVA)

Created By: Russell.Wells@areva.com

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Options

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Response to

**Request for Additional Information No. 481(5642, 5664, 5587, 5622), Revision 0,
Question 03.12-25**

4/11/2011

U. S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 03.02.01 - Seismic Classification

SRP Section: 03.02.02 - System Quality Group Classification

**SRP Section: 03.11 - Environmental Qualification of Mechanical and Electrical
Equipment**

**SRP Section: 03.12 - ASME Code Class 1, 2, and 3 Piping Systems and Piping
Components and Their Associated Supports**

Application Section: FSAR Ch 3

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

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

QUESTIONS for Engineering Mechanics Branch 1 (AP1000/EPR Projects) (EMB1)

Question 03.12-25:

In FSAR Table 1.8-2, Item 3.12-1, the applicant states that "A COL applicant that references the U.S. EPR design certification will perform a review of the impact of contributing mass of supports on the piping analysis following the final support design to confirm that the mass of the support is no more than ten percent of the mass of the adjacent pipe span".

The staff noted that the contributory support mass consideration in the piping system analysis model is a design requirement during design stage and as-built reconciliation. The staff noted that the mentioned design requirement is not a COL action item and there is no basis to limit that the contributory support mass has to be less than ten percent of the mass of the adjacent pipe span as stated in the item 3.12-1. The staff is requesting EPR to address this item.

Response to Question 03.12-25:

The above COL information item is derived from Section 5.2 of AREVA NP Topical Report ANP-10264NP-A, "U.S. EPR Piping Analysis and Pipe Support Design Topical Report," which has been reviewed and approved by NRC. As noted in Section 5.2 of this topical report:

"A portion of the weight of component type supports (such as snubbers, struts, spring hangers, etc.) is supported by the pipe and must be considered in the piping analysis model. The mass contributed by the support is included in the analysis when it is greater than 10 percent of the total mass of the adjacent pipe span (including pipe, contents, insulation and concentrated masses). The adjacent span is defined as the piping including the applicable support and bounded by the adjacent restraint on each side of this support in each direction. Because the mass of a given support will not typically contribute to the piping response in the direction of the support, only the support mass in the unsupported directions need to be considered, unless the support is flexible in the supported direction. A review of the impact of contributing mass of supports on the piping analysis will need to be performed by the COL applicant(s) following the final support design to confirm that the mass of the support is no more than 10% of the mass of the adjacent pipe span."

In the FSER for ANP-10264NP-A, NRC states:

"in RAI EPR-17, the staff requested AREVA to provide conditions under which this statement is applicable. In response (dated July 13, 2007), AREVA stated that the mass contributed by the support is included in the analysis when it is greater than 10 percent of the total mass of the adjacent pipe span (including pipe contents, insulation and concentrated masses). It is agreed that if the support is determined to be flexible in the direction of the restraint, the support mass should also be included in this direction, as well as for the unrestrained directions. Since this will simulate the actual response of the piping and its supports, the staff finds this acceptable. Therefore, RAI EPR-17 is resolved.

A review of the impact of contributing mass of supports on the piping analysis will need to be performed by the COL applicant(s) following the final support design to confirm that the mass of the support is no more than 10 percent of the mass of the adjacent pipe span. This is identified as the COL-Action Item 5 in TR Table 1-1."

FSAR Impact:

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

DRAFT