ArevaEPRDCPEm Resource

From: Pederson Ronda M (AREVA NP INC) [Ronda.Pederson@areva.com]
Sent: Friday, May 30, 2008 1:38 PM
To: Getachew Tesfaye
Cc: John Rycyna; SHAHROKHI F (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); NOXON David B (AREVA NP INC); SLOAN Sandra M (AREVA NP INC); MCINTYRE Brian (AREVA NP INC)
Subject: RE: U.S. EPR Design Certification Application RAI No. 4
Attachments: RAI 4 Response Supplement 1-US EPR DC.pdf

Getachew,

Attached please find AREVA NP Inc.'s supplemental response to the subject request for additional information (RAI). AREVA NP Inc. provided responses to 5 of the 7 questions on May 9, 2008. The attached file, "RAI 4 Response Supplement 1-US EPR DC.pdf" provides technically correct and complete responses to the remaining two questions. The U.S. EPR Final Safety Analysis Report will not be changed as a result of these questions.

The following table provides the page(s) in the response document, "RAI 4 Response Supplement 1-US EPR DC.pdf" containing the response to each question.

Question #	Start Page	End Page
RAI 4—19-51	2	3
RAI 4—19-55	4	4

The provided response and schedule meet NRC's stated expectation and support the established review schedule for the U.S. EPR Design Certification application.

Sincerely,

Ronda Pederson
ronda.pederson@areva.com
Licensing Manager, U.S. EPR Design Certification
New Plants Deployment
AREVA NP, Inc.
An AREVA and Siemens company
3315 Old Forest Road
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Phone: 434-832-3694
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From: Pederson Ronda M (AREVA NP INC)
Sent: Friday, May 09, 2008 3:30 PM
To: 'Getachew Tesfaye'
Cc: 'John Rycyna'; SHAHROKHI F (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC)
Subject: RE: U.S. EPR Design Certification Application RAI No. 4

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 4 Response-US EPR DC.pdf" provides technically correct and complete responses to 5 of the 7 questions. The U.S. EPR Final Safety Analysis Report will not be changed as a result of these questions.

The following table provides the page(s) in the response document, "RAI 4 Response-US EPR DC.pdf" containing the response to each question.

Question #	Start Page	End Page
RAI 4—19-49	2	2
RAI 4—19-50	3	3
RAI 4—19-51	4	4
RAI 4—19-52	5	8
RAI 4—19-53	9	9
RAI 4—19-54	10	10
RAI 4—19-55	11	11

Complete answers are not provided for 2 of the questions. The schedule for technically correct and complete response to these questions is provided below.

Question #	Response Date
RAI 4—19-51	June 30, 2008
RAI 4—19-55	May 30, 2008

The provided response and schedule meet NRC's stated expectation and support the established review schedule for the U.S. EPR Design Certification application.
Sincerely,

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From: Getachew Tesfaye [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Thursday, April 10, 2008 4:20 PM
To: ZZ-DL-A-USEPR-DL
Cc: Pederson Ronda M (AREVA NP INC); Joseph Colaccino; John Rycyna; Theresa Clark; Hanh Phan; Lynn Mrowca; Hossein Hamzehee; Edward Fuller
Subject: U.S. EPR Design Certification Application RAI No. 4

Attached please find the subject request for additional information (RAI). This RAI was discussed with your staff on April 3, 2008. 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.

Getachew Tesfaye
Office of New Reactors
U.S. Nuclear Regulatory Commission
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 160

Mail Envelope Properties (D34D696A2985BD428692405845F2305E799FEF)

Subject: RE: U.S. EPR Design Certification Application RAI No. 4
Sent Date: 5/30/2008 1:37:42 PM
Received Date: 5/30/2008 1:38:08 PM
From: Pederson Ronda M (AREVA NP INC)

Created By: Ronda.Pederson@areva.com

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"John Rycyna" <John.Rycyna@nrc.gov>
Tracking Status: None
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Files	**Size**	**Date & Time**
MESSAGE	3996	5/30/2008 1:38:08 PM
RAI 4 Response Supplement 1-US EPR DC.pdf	23951	

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

Response to

Request for Additional Information No. 4, Supplement 1, Revision 0

4/10/2008
U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation
Application Section: 19 SPLA Branch

Question 19-51:

Section 19.1.5.2.1.3 states that, "Other effects of pipe breaks, like jet impingement, spray, pipe whip, or humidity, were not specifically evaluated because all equipment at a location is considered failed." Does EPR internal flooding analysis consider the potential of electrical equipment failures in other divisions or at other locations due to water contact or pipe whip on cables/conduits/electrical cabinets?

Response to Question 19-51:

The internal flooding PRA did not identify a potential for electrical equipment failures in multiple divisions or locations.

In general, divisional separation in the U.S. EPR is such that flood events affecting one Safeguard Building would have effects restricted to that particular division. For example, Division 1 cabinets and cables are located in Safeguard Building 1. Because of a possibility to cross connect safety buses between different divisions (alternative feed), there could be times when two different electrical division are connected. However, the SB switchgear rooms were not included in the internal flooding PRA because no flood scenario was identified that would affect them. This evaluation is summarized below.

Safeguard Building switchgear rooms are located:

- In SB1 and 4, at Elevation +15' (DC equipment) and +27' (AC switchgears, I&C cabinets)
- In SB2 and 3, at Elevation +27' (AC switchgears, I&C cabinets) and +39' (DC equipment)

At or above Elevation +15' in the Safeguards Buildings, the following fluid-carrying systems are considered to be a flooding hazard:

- Fire Water Distribution System (FWDS)
- Safety Chilled Water System (SCWS)
- Operational Chilled Water System (OCWS, in SB4 only)
- Potable and Sanitary Water System (PSWS)
- Demineralized Water Distribution System (DWDS)
- Component Cooling Water System (Piping and Surge Tank) (CCWS)

The flooding analysis for the Safeguard Buildings, summarized in FSAR Section 3.4.3.4, shows that the floors at and above Elevation +15' are specifically designed so that water released by the FWDS, the SCWS/OCWS, the DWDS, the CCWS will be directed via openings and pipe shafts to the lower elevations of the building. There is enough free volume between Elevation -31' and Elevation +0' to contain the largest postulated flooding event, therefore elevations above ground level would not be affected.

Flooding induced by fire suppression actions in or in the vicinity of the switchgear rooms was also considered. The flooding hazard associated with fire fighting in the vicinity of the switchgear rooms is assumed to be enveloped by the various fire in switchgear rooms scenarios, which are modeled as part of the internal fire PRA. Therefore no flood scenario capable of impacting the SB switchgear rooms are identified in the PRA and the SB switchgear rooms is screened out from the flooding PRA.

Other exceptions from the divisional separation rule are four locations within the Safeguard Buildings where cables from more than one division are routed together. These locations and a summary of associated flooding evaluations are as follows:

1. MSS/MFW valve rooms located on the top elevations of Safeguard Buildings 1 and 4: MSS/MFWS valve room flooding sources are steam/feed line breaks. The flooding effects associated with these breaks are studied in the High Energy Line Break analysis. This analysis concluded that the high energy line breaks effects would not adversely challenge the plant functions credited to respond to this event. The MFW and MS components in this area are designed for harsh environment.

2. Control Room in Safeguard Building 2: The Control Room is not included in the internal flooding PRA because no flooding hazard was identified that would affect this area (see response to Question 19-54).

3. Cable spreading area in Safeguard Building 2: The cable spreading area is not included in the internal flooding PRA because no flooding hazard was identified that would affect this area.

4. Remote Shutdown Station floor in Safeguard Building 3: The remote shutdown station is not included in the internal flooding PRA because no flooding hazard was identified that would affect this area.

FSAR Impact:

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

Question 19-55:

Sections 19.1.5.2.2.1 and 19.1.5.2.3 provide point estimate values for internal flooding CDF and LRF respectively, please discuss the CDF and LRF in terms of mean frequencies in these sections.

Response to Question 19-55:

The flood related portion of the response to RAI 2 Question 19-5 provides the response to this question.