ArevaEPRDCPEm Resource

From: WELLS Russell D (AREVA NP INC) [Russell.Wells@areva.com]
Sent: Tuesday, October 27, 2009 9:44 AM
To: Tesfaye, Getachew
Cc: Pederson Ronda M (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 37, FSAR Ch 2, Supplement 2
Attachments: RAI 37 Supplement 2 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. provided technically correct and complete responses to 3 of the 5 questions of RAI No. 37 on September 8, 2008. Responses to the remaining two questions were provided on November 17, 2008. This supplemental response is being submitted to correct U.S. EPR FSAR Tier 2, Table 2.1-1 that was provided in original response to RAI No. 37, Question 02.03.04-5.

The attached file, "RAI 37 Supplement 2 Response US EPR DC.pdf" provides a technically correct and complete response to this question, as committed.

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 37 Question 02.03.04-5.

The following table indicates the respective pages in the response document, "RAI 37 Supplement 2 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 37 — 02.03.04-5	2	2

This concludes the formal AREVA NP response to RAI 37, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

(Russ Wells on behalf of)
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
Lynchburg, VA 24506-0935
Phone: 434-832-3694
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From: Pederson Ronda M (AREVA NP INC)
Sent: Monday, November 17, 2008 5:30 PM
To: 'Getachew Tesfaye'
Cc: 'John Rycyna'; WELLS Russell D (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); SLIVA Dana (EXT)
Subject: Response to U.S. EPR Design Certification Application RAI No. 37, FSAR Ch 2, Supplement 1

Getachew,

AREVA NP Inc. provided responses to 3 of the 5 questions of RAI No. 37 on September 8, 2008. The attached file, "RAI 37 Supplement 1 Response US EPR DC.pdf" provides a technically correct and complete response to the remaining two questions, as committed

The following table provides the page(s) in the response document, "RAI 37 Supplement 1 Response US EPR DC.pdf" containing the response to each question.

Question #	Start Page	End Page
RAI 37 — 02.03.01-10	2	3
RAI 37 — 02.03.01-11	4	4

This concludes the formal AREVA NP response to RAI 37, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Ronda Pederson
ronda.pederson@areva.com
Licensing Manager, U.S. EPR Design Certification
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From: WELLS Russell D (AREVA NP INC)
Sent: Monday, September 08, 2008 4:45 PM
To: 'Getachew Tesfaye'
Cc: 'John Rycyna'; Pederson Ronda M (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 37, FSAR Ch 2

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 37 Response US EPR DC.pdf" provides technically correct and complete responses to 3 of the 5 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 37 Question 02.03.04-5.

The following table provides the page(s) in the response document, "RAI 37 Response US EPR DC.pdf" containing the response to each question.

Question #	Start Page	End Page
RAI 37 — 02.03.01-10	2	2
RAI 37 — 02.03.01-11	3	3
RAI 37 — 02.03.04-5	4	4
RAI 37 — 02.03.04-6	5	5

RAI 37 — 02.03.05-5	6	6

A complete answer is not provided for 2 of the 5 questions. The schedule for a technically correct and complete response to this question is provided below.

Question #	Response Date
RAI 37 — 02.03.01-10	November 17, 2008
RAI 37 — 02.03.01-11	November 17, 2008

Sincerely,

(Russ Wells on behalf of)

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From: Getachew Tesfaye [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Thursday, August 07, 2008 3:32 PM
To: ZZ-DL-A-USEPR-DL
Cc: Joseph Hoch; Charles Cox; John Rycyna; Joseph Colaccino
Subject: U.S. EPR Design Certification Application RAI No. 37, FSAR Ch 2

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on July 16, 2008, and discussed with your staff on August 5, 2008. No changes were made to the RAI questions as a result of that discussion (typographical error in Question 02.03.04-6 was corrected). 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: 913

Mail Envelope Properties (1F1CC1BBDC66B842A46CAC03D6B1CD41021F8791)

Subject: Response to U.S. EPR Design Certification Application RAI No. 37, FSAR Ch 2, Supplement 2
Sent Date: 10/27/2009 9:44:11 AM
Received Date: 10/27/2009 9:47:20 AM
From: WELLS Russell D (AREVA NP INC)

Created By: Russell.Wells@areva.com

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"Pederson Ronda M (AREVA NP INC)" <Ronda.Pederson@areva.com>
Tracking Status: None
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Tracking Status: None

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Files	**Size**	**Date & Time**
MESSAGE	5868	10/27/2009 9:47:20 AM
RAI 37 Supplement 2 Response US EPR DC.pdf	50859	

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

Response to

Request for Additional Information No. 37, Supplement 2, Revision 0

8/07/2008

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 02.03.01 - Regional Climatology
SRP Section: 02.03.04 - Short Term Atmospheric Dispersion Estimates for Accident Releases
SRP Section: 02.03.05 - Long-Term Atmospheric Dispersion Estimates for Routine Releases
Application Section: FSAR Ch. 2
RSAC Branch

Question 02.03.04-5:

The staff intends for the control room accident χ/Q values to be presented in the site parameter table, FSAR Table 2.1-1. Standard Review Plan 2.3.4 specifically states that a DC applicant should include EAB, LPZ, and control room atmospheric dispersion factors for the appropriate time periods in the list of site parameters. Note, Standard Review Plant 2.0 states that the examples of site characteristics and site-related design parameters provided are not necessarily a complete list. Please revise FSAR Table 2.1-1 accordingly.

Response to Question 02.03.04-5:

(Note: There is no change to this response, which is being resubmitted to correct U.S. EPR FSAR Tier 2, Table 2.1-1 provided in the original response. In U.S. EPR FSAR Tier 2, Table 2.1-1, sheet 6 of 7, the value for the 0 to 2 hour time period for the Main Steam Relief Train Silencer #2 should be 1.88E-03 rather than 1.99E-03. Additionally, a reference to Table 2.3-1 in U.S. EPR FSAR Tier 2, Section 15.0.3.11.2 should have been changed to Table 2.1-1.)

The control room accident χ/Q values will be relocated from U.S EPR FSAR Tier 2, Tables 2.3-1 and 2.3-2 to U.S. EPR FSAR Tier 2, Table 2.1-1. U.S. EPR FSAR Tier 2, Sections 1.8, 2.3.4, 15.0.3.3.3, and 15.0.3.11.2 will also be revised to reflect this change. U.S EPR FSAR Tier 2, Table 2.3-3 will be renumbered as Table 2.3-1.

FSAR Impact:

U.S. EPR FSAR Tier 2, Table 1.8-2, Table 2.1-1, Table 2.3-1, Section 2.3.4, Section 15.0.3.3.3, and Section 15.0.3.11.2 will be revised as described in the response and indicated on the enclosed markup. U.S. EPR FSAR Tier 2, Tables 2.3-1 and 2.3-2 will be deleted and their material relocated to Table 2.1-1.

U.S. EPR Final Safety Analysis Report Markups

Table 2.1-1—U.S. EPR Site Design Envelope
Sheet 6 of 7

U.S. EPR Site Design Envelope									
Main Control Room/Technical Support Center Intake Atmospheric Dispersion Factors for Onsite Accident Dose Analysis (χ/Q)									
Time Period	Vent Stack Base	Releases via Safe-guard Building Canopy #1	Releases via Safe-guard Building Canopy #2	Equip-ment Hatch Releases via Material Lock	Depress-urization Shaft Releases	Main Steam Relief Train Silencer #1	Main Steam Relief Train Silencer #2	Main Steam Relief Train Silencer #3	Main Steam Relief Train Silencer #4
0–2 hours (s/m^3)	1.93E-03	6.52E-03	1.66E-03	1.01E-03	4.45E-03	1.57E-03	1.9988E-03	4.30E-03	3.28E-03
2–8 hours (s/m^3)	1.73E-03	5.68E-03	1.47E-03	8.97E-04	3.95E-03	1.36E-03	1.63E-03	3.71E-03	2.83E-03
8–24 hours (s/m^3)	6.74E-04	2.34E-03	6.28E-04	3.53E-04	1.70E-03	5.44E-04	6.47E-04	1.46E-03	1.12E-03
1–4 days (s/m^3)	5.12E-04	1.63E-03	4.19E-04	2.66E-04	1.11E-03	4.11E-04	4.93E-04	1.12E-03	8.57E-04
4–30 days (s/m^3)	4.72E-04	1.50E-03	3.81E-04	2.46E-04	1.00E-03	3.78E-04	4.52E-04	1.03E-03	7.86E-04

- Following the end of drawdown, the ESF component leakage release is directly to the atmosphere via the main stack, a ground-level release, and is filtered by the KLC, with 99 percent filtration efficiency for all species.

The receptors of interest are at the EAB, LPZ and MCR. Atmospheric dispersion 02.03.04-5 factors for the EAB and LPZ are shown in ~~Table 2.3-1~~Table 2.1-1. Time-shifting of the atmospheric dispersion factors was applied to all receptors of interest so that the most adverse release of radioactive material to the environment occurs coincident with the period of most adverse atmospheric dispersion (in line with RG 1.183, Section 4.1.5, and RG 1.194, Section 2). The MCR filtered and unfiltered atmospheric dispersion factors are listed in Table 2.1-1. Table 15.0-51—MCR Composite χ/Q and Filter-Bypass Fractions LOCA Releases at the Main Stack Base provides the MCR composite atmospheric dispersion factors and filter-bypass fractions for the LOCA. These are the χ/Q values and filter-bypass fractions that are be appropriate if both the MCR supply air and unfiltered inleakage were modeled using a single junction from the environment into the MCR.

The MCR envelope ventilation model is described in Section 15.0.3.4.1. The MCR envelope is substantially shielded by the concrete structures of the Containment Building and Shield Building (including annulus). Thus, the only external shine dose explicitly calculated for the MCR is that associated with filter shine from the SAB charcoal filter. The charcoal filter is modeled as a point source located on elevation 69 feet of the MCR envelop (the HVAC space), approximately ten feet above the receptor point in the MCR proper (on elevation 53 feet), which is shielded by the approximately 20-inch (50 cm) intervening concrete floor. The HVAC space is within the MCR envelope and accounts for one third of the 200,000 ft^3 volume of the MCR envelope. Direct shine from airborne radioactivity within the HVAC space to the MCR proper was neglected in view of the shielding provided by the 20-inch concrete floor.

15.0.3.11.3 Results

The U.S. EPR LOCA doses are summarized in Table 15.0-53—Radiological Consequences of U.S. EPR Design Basis Accidents (rem TEDE). The worst-case receptor is in the MCR, where the overall TEDE dose corresponds to approximately 80 percent of the limit. The MCR filter shine dose is relatively small, resulting in less than 0.1 rem, accounting for occupancy factor.

15.0.3.12 Postaccident Reactor Building Water Chemistry Control

The evaluation presented in this section determines the quantity of the buffer trisodium phosphate dodecahydrate (TSP-C) for which the pH of the IRWST water remains at a pH of 7.0 or above for 30 days following a DBA-LOCA. The source term for the evaluation follows the AST methodology.