ArevaEPRDCPEm Resource

From: WELLS Russell D (AREVA NP INC) [Russell.Wells@areva.com]
Sent: Monday, December 08, 2008 5:48 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. 94, Supplement 1, FSAR Ch 3
Attachments: RAI 94 Supplement 1 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. provided responses to 1 of the 2 questions of RAI No. 94 on November 10, 2008. The attached file, "RAI 94 Supplement 1 Response US EPR DC.pdf" provides technically correct and complete responses to the remaining question, as committed.

The following table indicates the respective pages in the response document, "RAI 94 Supplement 1 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 94 Supplement 1 — 03.03.01-1	2	3

This concludes the formal AREVA NP response to RAI 94, 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: WELLS Russell D (AREVA NP INC)
Sent: Monday, November 10, 2008 2:36 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. 94, FSAR Ch 3

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 94 Response US EPR DC.pdf" provides technically correct and complete responses to 1 of the 2 questions.

The following table provides the page(s) in the response document, "RAI 94 Response US EPR DC.pdf" containing the response to each question.

Question #	Start Page	End Page
RAI 03.03.01-1	2	2
RAI 03.05.02-1	3	4

A complete answer is not provided for 1 of the 2 questions. The schedule for a technically correct and complete response to this question is provided below.

Question #	Response Date
RAI 03.03.01-1	December 19, 2008

Sincerely,

(Russ Wells on behalf of)
Ronda Pederson
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From: Getachew Tesfaye [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Wednesday, October 15, 2008 7:02 PM
To: ZZ-DL-A-USEPR-DL
Cc: David Jeng; Sujit Samaddar; David Shum; John Segala; Michael Miernicki; Joseph Colaccino; John Rycyna
Subject: U.S. EPR Design Certification Application RAI No. 94 (913,1185),FSAR Ch. 3

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on October 6, 2008, and discussed with your staff on October 15, 2008. No changes were made to the Draft RAI Questions 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: 14

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Subject: Response to U.S. EPR Design Certification Application RAI No. 94, Supplement 1, FSAR Ch 3
Sent Date: 12/8/2008 5:47:43 PM
Received Date: 12/8/2008 5:47:49 PM
From: WELLS Russell D (AREVA NP INC)

Created By: Russell.Wells@areva.com

Recipients:
"John Rycyna" <John.Rycyna@nrc.gov>
Tracking Status: None
"Pederson Ronda M (AREVA NP INC)" <Ronda.Pederson@areva.com>
Tracking Status: None
"BENNETT Kathy A (OFR) (AREVA NP INC)" <Kathy.Bennett@areva.com>
Tracking Status: None
"DELANO Karen V (AREVA NP INC)" <Karen.Delano@areva.com>
Tracking Status: None
"Getachew Tesfaye" <Getachew.Tesfaye@nrc.gov>
Tracking Status: None

Post Office: AUSLYNCMX02.adom.ad.corp

Files	**Size**	**Date & Time**
MESSAGE	3666	12/8/2008 5:47:49 PM
RAI 94 Supplement 1 Response US EPR DC.pdf	64419	

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

Response to

Request for Additional Information No. 94, Supplement 1 (913, 1185), Revision 0

10/15/2008

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 03.03.01 - Wind Loading
SRP Section: 03.05.02 - Structures Systems and Components To Be Protected From Externally-Generated Missiles
Application Section: FSAR Ch. 3

QUESTIONS for SEB2 and SBPB Branches

Question 03.03.01-1:

(a) Provide the basis for the wind load design of other structures covered in the Areva FSAR. If the wind loading for other structures is less than that used for Seismic Category I Structures, address the impact and consequences of the failure of these other structures on Seismic Category I Structures.

(b) In Section 3.3.1.2.1, "Notes on Values Used", a comparison is made between the coefficient values used for the determination of the velocity pressure, q_z, between those used in SRP 3.3.1 (Wind Loading) and those used in FSAR Section 3.3.1.2 (Determination of Applied Wind Forces). Specifically, in the FSAR, the lower limit for K_z is given as .85, K_d is given as .85 or greater, and K_{zt} is given as 1.2, while in the SRP the lower limit for K_z is given as .87, K_d is given as 1.0 or greater, and K_{dt} is 1.0. A comparison of the product of these values at a height of z less than 15 feet shows the Areva value lower by .04%. Above this height, the Areva velocity pressure should exceed the SRP value due to the fact that the topographic coefficient, K_{zt}, is higher than the SRP value. However, in ASCE 7-05 (Minimum Design Loads for Buildings and Other Structures), if the value of K_d is taken from Table 6-4, then Section 6.5.4.4 of that Standard requires that the K_d value must be used in conjunction with the load combinations of Section 2.3 and 2.4. Has this requirement been reflected in the load combinations for Seismic Category I structures and other structures designed for wind load?

(c) The vent stack is a tall cylindrical structure and such structures can fail under wind load due to vortex shedding. Confirm if vortex shedding was considered in design. If yes, discuss the applied analytical methodology and related wind parameters used. If not, justify the basis of preclusion in the design and provide the analysis results for the consequences of a vent stack failure on safety-related structures.

Response to Question 03.03.01-1:

(a) The U.S. EPR standard plant consists of the structures listed in U.S. EPR FSAR Tier 2, Section 1.8. All standard plant structures use the wind load design value used for Seismic Category I structures, eliminating the need to address consequences for these structures of failure due to wind loading.

(b) U.S. EPR FSAR Tier 2, Section 3.3.1.2.1, "Notes on Values Used," is intended to reconcile differences in wind directionality factor, K_d, and topographic factor, K_{zt}, with values given in the SRP.

Using a specified value of K_d other than 1.0, as given in the SRP, does not indicate that the load combinations given in ASCE 7-05, Section 2.3 and Section 2.4, have been incorporated into the wind load design. Using factors K_d and K_{zt} from U.S. EPR FSAR Tier 2, Section 3.3.1.2, the procedure converts wind speed into equivalent wind pressure with no significant difference from the same conversion performed using factors given in the SRP.

(c) The effects of vortex shedding with respect to the wind parameters defined in U.S. EPR FSAR Tier 2, Section 3.3.1.1, were investigated and it was determined that a tuned mass damper will be utilized to minimize vortex shedding-induced load effects. With a tuned mass damper in place, vortex shedding is not the limiting design load; safe shutdown earthquake (SSE) produces the limiting vent stack design load.

FSAR Impact:

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