ArevaEPRDCPEm Resource

From: Pederson Ronda M (AREVA NP INC) [Ronda.Pederson@areva.com]
Sent: Wednesday, December 09, 2009 3:58 PM
To: Tesfaye, Getachew
Cc: BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); DUNCAN Leslie E (AREVA NP INC); WILLIFORD Dennis C (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 84, Supplement 5
Attachments: RAI 84 Supplement 5 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. (AREVA NP) provided responses to 9 of the 22 questions of RAI No. 84 on November 26, 2008. Supplement 1 response to RAI No. 84 was sent on January 21, 2009 to address 7 of the remaining 13 questions. Supplement 2 response to RAI No. 84 was sent on February 13, 2009 to address 3 of the remaining 6 questions. Supplement 3 and Supplement 4 revised the schedule for response to the remaining questions. The attached file, "RAI 84 Supplement 5 Response US EPR DC.pdf" provides technically correct and complete responses to the remaining 3 questions.

As stated in the responses, the FSAR markups are provided with the AREVA Transnuclear Inc. Report TN-Rack.0101 which was submitted via Letter NRC:09:117 from Sandra Sloan to the U.S. NRC Document Control Desk on December 8, 2009.

The following table indicates the respective pages in the response document, "RAI 84 Supplement 5 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 84 — 09.01.02-1	2	2
RAI 84 — 09.01.02-3	3	3
RAI 84 — 09.01.02-17	4	4

This concludes the formal AREVA NP response to RAI 84, 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
AREVA NP Inc.
An AREVA and Siemens company
3315 Old Forest Road
Lynchburg, VA 24506-0935
Phone: 434-832-3694
Cell: 434-841-8788

From: Pederson Ronda M (AREVA NP INC)
Sent: Friday, November 20, 2009 6:55 PM
To: 'Tesfaye, Getachew'

Cc: BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); WILLIFORD Dennis C (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 84, Supplement 4

Getachew,

AREVA NP Inc. (AREVA NP) provided responses to 9 of the 22 questions of RAI No. 84 on November 26, 2008. Supplement 1 response to RAI No. 84 was sent on January 21, 2009 to address 7 of the remaining 13 questions. Supplement 2 response to RAI No. 84 was sent on February 13, 2009 to address 3 of the remaining 6 questions.
Supplement 3 revised the schedule for response to the remaining questions.

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

Question #	Response Date
RAI 84 — 09.01.02-1	December 9, 2009
RAI 84 — 09.01.02-3	December 9, 2009
RAI 84 — 09.01.02-17	December 9, 2009

Sincerely,

Ronda Pederson
ronda.pederson@areva.com
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AREVA NP Inc.
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From: DUNCAN Leslie E (AREVA NP INC)
Sent: Thursday, June 25, 2009 4:08 PM
To: 'Getachew Tesfaye'
Cc: BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); WILLIFORD Dennis C (AREVA NP INC); Pederson Ronda M (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 84, Supplement 3

Getachew,

AREVA NP Inc. (AREVA NP) provided responses to 9 of the 22 questions of RAI No. 84 on November 26, 2008. Supplement 1 response to RAI No. 84 was sent on January 21, 2009 to address 7 of the remaining 13 questions. Supplement 2 response to RAI No. 84 was sent on February 13, 2009 to address 3 of the remaining 6 questions.

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

Question #	Response Date
RAI 84 — 09.01.02-1	November 20, 2009
RAI 84 — 09.01.02-3	November 20, 2009

Sincerely,

Les Duncan
Licensing Engineer
AREVA NP Inc.
An AREVA and Siemens Company
Tel: (434) 832-2849
Leslie.Duncan@areva.com

From: Pederson Ronda M (AREVA NP INC)
Sent: Friday, February 13, 2009 4:36 PM
To: 'Getachew Tesfaye'
Cc: BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); WILLIFORD Dennis C (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 84, Supplement 2

Getachew,

AREVA NP Inc. (AREVA NP) provided responses to 9 of the 22 questions of RAI No. 84 on November 26, 2008. AREVA NP submitted Supplement 1 to the response on January 21, 2009 to address 7 of the remaining 13 questions. The attached file, "RAI 84 Supplement 2 Response US EPR DC.pdf" provides technically correct and complete responses to 3 of the remaining 6 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 84 Questions 09.01.02-2 and 09.01.02-11.

The following table indicates the respective pages in the response document, "RAI 84 Supplement 2 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 84 — 09.01.02-1	2	2
RAI 84 — 09.01.02-2	3	3
RAI 84 — 09.01.02-3	4	4
RAI 84 — 09.01.02-11	5	5
RAI 84 — 09.01.02-12	6	7
RAI 84 — 09.01.02-17	8	8

AREVA NP is unable to respond to three of the questions at this time. The schedule for technically correct and complete responses to the remaining 3 questions has been revised and is provided below:

Question #	Response Date
RAI 84 — 09.01.02-1	June 25, 2009
RAI 84 — 09.01.02-3	June 25, 2009
RAI 84 — 09.01.02-17	June 25, 2009

Sincerely,

Ronda Pederson
ronda.pederson@areva.com
Licensing Manager, U.S. EPR Design Certification

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3315 Old Forest Road
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From: WELLS Russell D (AREVA NP INC)
Sent: Wednesday, January 21, 2009 2:47 PM
To: 'Getachew Tesfaye'
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. 84, FSAR Ch 9, Supplement 1

Getachew,

AREVA NP Inc. provided responses to 9 of the 22 questions of RAI No. 84 on November 26, 2008. The attached file, "RAI 84 Supplement 1 Response US EPR DC.pdf" provides technically correct and complete responses to 7 of the remaining 13 questions, 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 84 Questions 09.01.02-7 and 09.01.02-16.

The following table indicates the respective pages in the response document, "RAI 84 Supplement 1 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 84 — 09.01.02-6	2	2
RAI 84 — 09.01.02-7	3	3
RAI 84 — 09.01.02-9	4	4
RAI 84 — 09.01.02-16	5	5
RAI 84 — 09.01.02-18	6	6
RAI 84 — 09.03.01-4	7	7
RAI 84 — 09.03.01-5	8	8

The schedule for technically correct and complete responses to the remaining 6 questions is unchanged and provided below:

Question #	Response Date
RAI 84 — 09.01.02-1	February 13, 2009
RAI 84 — 09.01.02-2	February 13, 2009
RAI 84 — 09.01.02-3	February 13, 2009
RAI 84 — 09.01.02-11	February 13, 2009
RAI 84 — 09.01.02-12	February 13, 2009
RAI 84 — 09.01.02-17	February 13, 2009

Sincerely,

(Russ Wells on behalf of)

Ronda Pederson
ronda.pederson@areva.com
Licensing Manager, U.S. EPR Design Certification
New Plants Deployment
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From: Pederson Ronda M (AREVA NP INC)
Sent: Wednesday, November 26, 2008 2:30 PM
To: 'Getachew Tesfaye'
Cc: WILLIFORD Dennis C (AREVA NP INC); DELANO Karen V (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 84 (966,980),FSAR Ch 9

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 84 Response US EPR DC.pdf" provides technically correct and complete responses to 9 of the 22 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 84 Questions 09.01.02-4, 09.01.02-8, 09.01.02-10, and 09.03.01-1.

The following table indicates the respective page(s) in the response document, "RAI 84 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 84 — 09.01.02-1	2	2
RAI 84 — 09.01.02-2	3	3
RAI 84 — 09.01.02-3	4	4
RAI 84 — 09.01.02-4	5	5
RAI 84 — 09.01.02-5	6	6
RAI 84 — 09.01.02-6	7	7
RAI 84 — 09.01.02-7	8	8
RAI 84 — 09.01.02-8	9	9
RAI 84 — 09.01.02-9	10	10
RAI 84 — 09.01.02-10	11	11
RAI 84 — 09.01.02-11	12	12
RAI 84 — 09.01.02-12	13	13
RAI 84 — 09.01.02-13	14	14
RAI 84 — 09.01.02-15	15	15
RAI 84 — 09.01.02-16	16	16

RAI 84 — 09.01.02-17	17	17
RAI 84 — 09.01.02-18	18	18
RAI 84 — 09.03.01-1	19	19
RAI 84 — 09.03.01-2	20	20
RAI 84 — 09.03.01-3	21	21
RAI 84 — 09.03.01-4	22	22
RAI 84 — 09.03.01-5	23	23

A complete answer is not provided for 13 of the 22 questions. The schedule for a technically correct and complete response to these questions is provided below.

Question #	Response Date
RAI 84 — 09.01.02-1	February 13, 2009
RAI 84 — 09.01.02-2	February 13, 2009
RAI 84 — 09.01.02-3	February 13, 2009
RAI 84 — 09.01.02-6	January 21, 2009
RAI 84 — 09.01.02-7	January 21, 2009
RAI 84 — 09.01.02-9	January 21, 2009
RAI 84 — 09.01.02-11	February 13, 2009
RAI 84 — 09.01.02-12	February 13, 2009
RAI 84 — 09.01.02-16	January 21, 2009
RAI 84 — 09.01.02-17	February 13, 2009
RAI 84 — 09.01.02-18	January 21, 2009
RAI 84 — 09.03.01-4	January 21, 2009
RAI 84 — 09.03.01-5	January 21, 2009

Sincerely,

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From: Getachew Tesfaye [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Monday, October 27, 2008 7:25 PM
To: ZZ-DL-A-USEPR-DL
Cc: Raul Hernandez; John Segala; Stephen Campbell; Peter Hearn; Joseph Colaccino; John Rycyna
Subject: U.S. EPR Design Certification Application RAI No. 84 (966,980),FSAR Ch 9

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on September 16, 2008, and discussed with your staff on October 7, 2008. Draft RAI Question 09.01.02-

14 was deleted and Draft RAI Questions 09.01.02-10 and 09.01.02-12 were modified 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: 1020

Mail Envelope Properties (5CEC4184E98FFE49A383961FAD402D3101767F2B)

Subject: Response to U.S. EPR Design Certification Application RAI No. 84, Supplement 5
Sent Date: 12/9/2009 3:58:19 PM
Received Date: 12/9/2009 3:58:25 PM
From: Pederson Ronda M (AREVA NP INC)

Created By: Ronda.Pederson@areva.com

Recipients:
"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
"DUNCAN Leslie E (AREVA NP INC)" <Leslie.Duncan@areva.com>
Tracking Status: None
"WILLIFORD Dennis C (AREVA NP INC)" <Dennis.Williford@areva.com>
Tracking Status: None
"Tesfaye, Getachew" <Getachew.Tesfaye@nrc.gov>
Tracking Status: None

Post Office: AUSLYNCMX02.adom.ad.corp

Files	**Size**	**Date & Time**
MESSAGE	12358	12/9/2009 3:58:25 PM
RAI 84 Supplement 5 Response US EPR DC.pdf	62729	

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

Response to

Request for Additional Information No.84, Supplement 5

10/27/2008

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 09.01.02 - New and Spent Fuel Storage
SRP Section: 09.03.01 - Compressed Air System Application Section: Ch 9
SBPA Branch

Question 09.01.02-1:

The applicant has not identified the maximum capacity or provided details of the design of the new fuel storage facility. The new fuel storage facility (NFSF) needs to provide storage for new fuel assemblies in accordance with the design basis. The staff requests the applicant to provide and include in the FSAR the design basis for the new fuel storage facility and identify the maximum number of new fuel assemblies that can be stored.

Response to Question 09.01.02-1:

As specified in AREVA Transnuclear Inc. Report TN-Rack.0101, "U.S. EPR New and Spent Fuel Storage Rack Technical Report", Section 1.2 and shown in Figure 1-3, the design of the new fuel storage facility consists of two storage racks; one with an 8x8 cell configuration for a total of 64 cells and one with a 7x8 configuration for a total of 56 cells. The total capacity of the new fuel storage racks is 120 cells. U.S. EPR FSAR Tier 2, Section 9.1.2 will be revised to provide additional design basis information for the new fuel storage facility, including the number and configuration of the new fuel storage racks and the maximum capacity of the new fuel storage facility. The design requirement is a minimum storage capacity of 96 new fuel assemblies, which corresponds with the number of new fuel assemblies expected to be replaced based on 18-month fuel cycles.

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 9.1.2 will be revised as described in the response and in the FSAR markups provided with the AREVA Transnuclear Inc. Report TN-Rack.0101 which was submitted via Letter NRC:09:117 from Sandra Sloan to the U.S. NRC Document Control Desk on December 8, 2009.

Question 09.01.02-3:

SRP Section 9.1.2 recommends that low-density storage should be used, at a minimum, for the most recently discharged fuel to enhance the capability to cool it. If low-density storage is not used, the use high-density storage racks needs to be evaluated on a case by case basis. The staff determined that the applicant has not specified in the FSAR what are the density requirements for fuel racks. The applicant is requested to identify and include in the FSAR the density requirements for spent fuel storage and, if applicable, to provide justification.

Response to Question 09.01.02-3:

Low density storage will be used for freshly discharged fuel. For 18-month fuel cycles, low density storage for 96 freshly discharged fuel assemblies plus a full core offload of 241 fuel assemblies is required, for a total of 337 cells. As shown in AREVA Transnuclear Inc. Report TN-Rack.0101, "U.S. EPR New and Spent Fuel Storage Rack Technical Report", there are 382 cells in the low density storage (Region 1) spent fuel racks. If freshly discharged fuel is required to be stored in the high density storage racks (Region 2), the assemblies will be required to be stored in a checkerboard or other pattern that confirms adequate cooling can be maintained. U.S. EPR FSAR Tier 2, Section 9.1.2 will be revised to reference AREVA Transnuclear Inc. Report TN-Rack.0101, to provide the maximum storage capacity of the Region 1 and Region 2 racks in the spent fuel pool and to the indicate that the most-recently discharged fuel will be stored in either the Region 1 low density storage racks or in a checkerboard or other pattern in the Region 2 racks with confirmation that adequate cooling can be maintained.

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 9.1.2 will be revised as described in the response and in the FSAR markups provided with the AREVA Transnuclear Inc. Report TN-Rack.0101 which was submitted via Letter NRC:09:117 from Sandra Sloan to the U.S. NRC Document Control Desk on December 8, 2009.

Question 09.01.02-17:

The applicant has stated in FSAR Tier 2, Section 3.1.6.3, that in compliance with GDC 62, preventing criticality in the new and spent fuel storage areas is accomplished by physical separation of fuel assemblies, the use of borated water and borated neutron absorber panels in the fuel storage pool. However, the applicant has also stated in FSAR Tier 2, Section 9.1.2.2.2, that borated demineralized reactor makeup water is used to fill and to supplement water inventory in the SFP but boration is not essential for maintaining the subcriticality of the stored fuel assemblies. Clarify in the FSAR the U.S EPR design requirements for borated water in the SFP.

Response to Question 09.01.02-17:

Borated water is not required to maintain subcriticality under normal storage conditions. However, to remain within criticality limits for accident conditions (either a misloaded fuel assembly or a dropped fuel assembly), a concentration of 1100 ppm natural boron is required (see AREVA Transnuclear Inc. Report TN-Rack.0101, "U.S. EPR New and Spent Fuel Storage Rack Technical Report", Section 5.1.3). U.S. EPR FSAR Tier 2, Section 9.1.2.2.2 states that a minimum boron concentration of 1700 ppm boron isotopically enriched to $\geq$ 37 percent B-10 will be maintained.

U.S. EPR FSAR Tier 2, Section 9.1.2.2.2 will be revised to delete the statement that boration is not essential for maintaining the subcriticality of the stored fuel assemblies.

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 9.1.2 will be revised as described in the response and in the FSAR markups provided with the AREVA Transnuclear Inc. Report TN-Rack.0101 which was submitted via Letter NRC:09:117 from Sandra Sloan to the U.S. NRC Document Control Desk on December 8, 2009.