ArevaEPRDCPEm Resource

From: BRYAN Martin (EXTERNAL AREVA) [Martin.Bryan.ext@areva.com]
Sent: Thursday, August 19, 2010 11:28 AM
To: Tesfaye, Getachew
Cc: DELANO Karen (AREVA); ROMINE Judy (AREVA); BENNETT Kathy (AREVA); NOXON David (AREVA); WILLIFORD Dennis (AREVA)
Subject: Response to U.S. EPR Design Certification Application RAI No. 423, FSAR Ch. 11 PHASE 4 RAI, Supplement 1
Attachments: RAI 423 Supplement 1 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. provided a schedule for a technically correct and complete response to the one question of RAI No. 423 on July 20, 2010. The attached file, "RAI 423 Supplement 1 Response US EPR DC.pdf," provides the technically correct and complete response to the one question.

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 423 Question 11.02-25.

The following table indicates the respective pages in the response document, "RAI 423 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 423 — 11.02-25	2	3

This completes the formal AREVA NP response to RAI 423. There are no additional questions associated with this RAI.

Sincerely,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
Tel: (434) 832-3016
702 561-3528 cell
Martin.Bryan.ext@areva.com

From: BRYAN Martin (EXT)
Sent: Tuesday, July 20, 2010 3:55 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen V (AREVA NP INC); ROMINE Judy (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); NOXON David B (AREVA NP INC); WILLIFORD Dennis C (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 423, FSAR Ch. 11 PHASE 4 RAI

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 423 Response US EPR DC.pdf," provides the schedule for technically correct and complete responses to these questions.

The following table indicates the respective pages in the response document, "RAI 423 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 423 — 11.02-25	2	3

The schedule for technically correct and complete response to the one question is provided below.

Question #	Response Date
RAI 423 — 11.02-25	September 20, 2010

Sincerely,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
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From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Wednesday, June 23, 2010 8:18 AM
To: ZZ-DL-A-USEPR-DL
Cc: Dehmel, Jean-Claude; Roach, Edward; Patel, Jay; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 423 (4757), FSAR Ch. 11 PHASE 4 RAI

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on June 17, 2010, and on June 22, 2010, you informed us that the RAI is clear and no further clarification is needed. As a result, no change is made to the draft RAI. 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: 1862

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Subject: Response to U.S. EPR Design Certification Application RAI No. 423, FSAR Ch. 11 PHASE 4 RAI, Supplement 1
Sent Date: 8/19/2010 11:28:19 AM
Received Date: 8/19/2010 11:28:24 AM
From: BRYAN Martin (EXTERNAL AREVA)

Created By: Martin.Bryan.ext@areva.com

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MESSAGE	3530	8/19/2010 11:28:24 AM
RAI 423 Supplement 1 Response US EPR DC.pdf	96634	

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

Response to

Request for Additional Information No. 423(4757), Revision 1, Supplement 1

6/23/2010

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 11.02 - Liquid Waste Management System
Application Section: 11.2

QUESTIONS for Health Physics Branch (CHPB)

Question 11.02-25:

Follow-up to Open Item 273, Supplement 1, Question 11.2-15 and RAI 387, Question 11.02-20(a)

In responses to Supplemental RAI 387, Question 11.02-20 and RAI 273, Supplement 1, Question 11.2-15, the applicant provides information addressing HP and BOP staff concerns about the inconsistent listing of LWMS components in FSAR Table 11.2-2 given system depictions of FSAR Figures 11.2-1 to 11.2-3. A review of the responses indicated that the descriptions of newly added components to FSAR Table 11.2-2 (pages 8 and 9) were incomplete as they did not include descriptive operating parameters, with the parameters being left to be supplied by vendors for the COL applicant. In Supplemental RAI 387, Question 11.02-20, AREVA was requested to provide the missing operating parameters or specify that this aspect of the design is not part of the design certification, or assign a COL information for these table entries.

In response to RAI 387, Question 11.02-20, the applicant proposed a revision to the portion of FSAR Table 11.2-2 with an inconsistent listing of LWMS component parameters. The revised entry in Table 11.2-2 on the vendor supplied demineralizer subsystem applies one single operating parameter entry (40 gpm) as a surrogate for eight different operating parameters with a qualifying footnote. While it is recognized that the specified flow rate might be applicable to some of the subsystem operating parameters, such as for the booster pump flow rate and throughputs for the pre- and ultra-filters, resin trap, and resin beds; it would not be applicable to the solids collection system, spent resin dewatering systems, and chemical addition system. In addition, the operating characteristics and performance of the demineralizer subsystem are dependent on its operating temperatures since increasing temperatures reduce the effectiveness of the resin beds in removing radioactivity from treated process streams. The proposed revision of the Table 11.2-2 does not include a value for maximum allowable temperature parameters for the resin beds. As is shown in FSAR Section 11.2.3, the decontamination factor of the demineralizer susbsystem governs the effectiveness of the treatment process in reducing radioactive liquid effluent released and in demonstrating compliance with 10 CFR Part 20, Appendix B (Table 2, Col. 2.) effluent concentration limits and 10 CFR Part 50, Appendix I design objectives. Finally, the descriptions do not identify the type or grade of materials that will be used to make the components of the demineralizer subsystem.

Accordingly, the applicant is requested to provide missing operating parameters and material descriptions for the demineralizer subsystem in a manner already included for the other LWMS subsystems described in FSAR Table 11.2-2. The staff recognizes that such operating parameter entries for the demineralizer subsystem may be nominal values at this time, for example, based on currently available technologies. However, such entries could be qualified with a revised Footnote 3 stating that the actual demineralizer subsystem, once procured and installed, will be designed to meet or exceed the descriptive operating parameters and decontamination factors listed in FSAR Table 11.2-3 in demonstrating compliance with 10 CFR Part 20, Appendix B effluent concentration limits and 10 CFR Part 50, Appendix I design objectives.

Response to Question 11.02-25:

The requested information, based on vendor supplied demineralizer system parameters and footnotes describing these parameters, will be added to U.S. EPR FSAR Tier 2, Table 11.2-2.

FSAR Impact:

U.S. EPR FSAR Tier 2, Table 11.2-2 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

Table 11.2-2—Liquid Waste Management System Component Data
Sheet 8 of 9

11.02-25

Components / Parameters[1]	Nominal Value[2]
Vendor Supplied Demineralizer System[3,~~4~~]	
~~Demineralizer Booster Pump~~	~~40 gpm~~
~~Pre-Filter~~	
~~Ultra Filter~~	
~~Demineralizer Resin Beds~~	
~~Resin Trap~~	
~~Solids Collection System~~	
~~Spent Resin Dewatering System~~	
~~Chemical Addition System~~	
Demineralizer Booster Pump	
Number	1
Type	Centrifugal
Design Pressure	175 psig
Design Temperature	212°F
Design Flow Rate	40 gpm
Material	Stainless Steel
Pre-Filter	
Number	1
Type	Activated Carbon
Design Pressure	175 psig
Design Temperature	212°F
Design Flow Rate	40 gpm
Partical Size (micron)	500
Filter Housing Material	Stainless Steel
Ultra-Filter	
Number	1
Type	Poly
Design Pressure	175 psig
Design Temperature	212°F
Design Flow Rate	40 gpm
Partical Size (micron)	0.04 micron
Filter Housing Material	Stainless Steel

Table 11.2-2—Liquid Waste Management System Component Data
Sheet 9 of 9

11.02-25

Components / Parameters[1]	Nominal Value[2]
Demineralizer Resin Beds (Ion Exchange Columns)	
Number	5
Design Pressure	175 psig
Design Temperature	212°F
Design Flow Rate	40 gpm
Nominal Resin Volume (ft^3)	30
Resin Type	Anion and Cation
Vessel Material	Carbon Steel
Resin Trap	
Number	1
Design Pressure	175 psig
Design Temperature	212°F
Particle Size (inches)	0.007
Material	Stainless Steel
Solids Collection System	
Number	1
Design Pressure	175 psig
Design Temperature	212°F
Material	Stainless Steel
Spent Resin Dewatering System (HICs)	
Number	1
Type	8-120
Design Pressure	175 psig
Design Temperature	212°F
Nominal Volume (ft^3)	120
Chemical Addition System	
Number	1
Design Pressure	175 psig
Design Temperature	212°F
Material	Stainless Steel

Notes:

1. LWMS processing components are designed to meet or exceed the decontamination factors listed in Table 11.2-3.

2. Processing flow is a nominal value. Actual processing capacity will meet or exceed the listed operating parameters.

11.02-25

3. Typical components are shown for the vendor supplied demineralizer system.

4. The demineralizer subsystem will be designed to meet or exceed the descriptive parameters and decontamination factors listed in Table 11.2-3 in demonstrating compliance with 10 CFR Part 20, Appendix B effluent concentration limits and 10 CFR Part 50, Appendix I design objectives.