ArevaEPRDCPEm Resource

From: Pederson Ronda M (AREVA NP INC) [Ronda.Pederson@areva.com]
Sent: Friday, November 06, 2009 8:38 PM
To: Tesfaye, Getachew
Cc: BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); WILLIFORD Dennis C (AREVA NP INC); SLIVA Dana (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 290, FSARCh. 11, Supplement 1
Attachments: RAI 290 Supplement 1 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. (AREVA NP) provided technically correct and complete responses to 2 of the 5 questions to RAI No. 290 on October 22, 2009. The attached file, "RAI 290 Supplement 1 Response US EPR DC.pdf," provides a technically correct and complete responses to portions of 1 of the remaining 3 questions, as committed.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report (FSAR) in redline-strikeout format which support the response to RAI 290 Question 11.05 -15a.

The following table indicates the respective pages in the response document, "RAI 290 Response US EPR DC.pdf," that contains AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 290 — 11.05-15 Parts a & b	2	3

A complete answer has not been provided for 3 questions. The schedule for a technically correct and complete response to these questions has been revised as provided below.

Question #	Response Date
RAI 290 — 11.05-15 Part c	November 25, 2009
RAI 290 — 11.05-16	November 25, 2009
RAI 290 — 11.05-19	November 25, 2009

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
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From: Pederson Ronda M (AREVA NP INC)
Sent: Thursday, October 22, 2009 3:48 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. 290, FSARCh. 11

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 290 Response US EPR DC.pdf" provides technically correct and complete responses to 2 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 290 Questions 11.05-17 and 11.05-18.

The following table indicates the respective page in the response document, "RAI 290 Response US EPR DC.pdf," that contains AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 290 — 11.05-15	2	2
RAI 290 — 11.05-16	3	3
RAI 290 — 11.05-17	4	4
RAI 290 — 11.05-18	5	5
RAI 290 — 11.05-19	6	6

A complete answer is not provided for 3 of the 5 questions. The schedule for a technically correct and complete response to these questions is provided below.

Question #	Response Date
RAI 290 — 11.05-15	November 6, 2009
RAI 290 — 11.05-16	November 6, 2009
RAI 290 — 11.05-19	November 6, 2009

Sincerely,

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From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Tuesday, September 22, 2009 10:17 AM
To: ZZ-DL-A-USEPR-DL
Cc: Dehmel, Jean-Claude; Frye, Timothy; Jennings, Jason; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 290 (3637), FSARCh. 11

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on September 10, 2009, and on September 22, 2009, 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: 947

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From: Pederson Ronda M (AREVA NP INC)

Created By: Ronda.Pederson@areva.com

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MESSAGE	4378	11/6/2009 8:38:10 PM
RAI 290 Supplement 1 Response US EPR DC.pdf	73799	

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

Response to

Request for Additional Information No. 290 (3637), Supplement 1

9/22/2009

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 11.05 - Process and Effluent Radiological Monitoring Instrumentation and Sampling Systems
Application Section: 11.5, 11.2, 9.3.3, 10.4.5

QUESTIONS for Health Physics Branch (CHPB)

Question 11.05-15:

FSAR Sections 11.5.3.2, 11.2.2.1.6, 11.2.2.3.3, and 10.4.5 and FSAR Figure 11.5-1 present information on the process and release paths that will be used to discharge liquid effluents from the plant during operation. A review of this information indicates that it is incomplete. Specifically, the following items were noted, given the FSAR's endorsement of Regulatory Guides 1.143 and 1.206:

a. FSAR Sections 11.2.3 and 10.4.5 do not define or describe the complete process path of LWMS discharges after the isolation valves shown in Figure 11.2-1 to the discharge canal. The information does not describe the connection from the LWMS discharge line to the Circulating Water System (CWS) and discharge canal as the ultimate point of release into the environment. A review of the information presented in FSAR Section 10.4.5 and Figure 10.4.5-1 reveals there is no input stream shown for the LWMS into the CWS, and no information describing the type of blowdown system and blowdown rates of the process stream receiving discharges from the LWMS before going into the CWS. Accordingly, the applicant is requested to provide the missing information defining the boundary of the LWMS beginning at the interface starting with plant systems provided for the collection of radioactive liquid wastes to the point of discharge into the environment in complying with the requirements of Part 20, Appendix B, and Part 50, Appendix I.

b. The applicant is requested to describe or reconcile the bases of the dilution flow rate of 100 ft^3/s presented in FSAR Section 11.2.3.3 against a discharge flow rate of 39.3 ft^3/s listed in FSAR Table 11.2-9, both used in characterizing radioactive effluent discharges into the environment. Update the corresponding sections of the FSAR with the revised discharge and/or dilution flow rates and supporting discussions for their use in assessing offsite doses to members of the public.

c. A review of FSAR Section 11.5.3.2 indicates that there are no descriptions of equipment and types of potential releases occurring from the "Turbine Building Plant Drainage" (TBPD). FSAR Table 11.5-1 and Figure 11.5-1 identify a radiation monitor on the line leading to a "water source" before being released into the environment. The information does not describe the connection from the TBPD discharge line to the Circulating Water System (CWS) and discharge canal as the ultimate point of release into the environment. A review of the information presented in FSAR Sections 9.3.3 and 10.4.5, Figure 10.4.5-1, and Table 1.1-1 (U.S. EPR FSAR Acronyms) reveals the TBPD is not listed as a plant acronym, there is no input stream shown for the TBPD into the CWS, and no information describing the type of blowdown system and blowdown rates of the process stream receiving discharges from the TBPD before going to the CWS. Accordingly, the applicant is requested to provide the missing information defining the boundary of the TBPD beginning at the interface of turbine building systems provided for the collection of process streams and radioactive liquid wastes to the point of discharge into the environment in complying with the requirements of Part 20, Appendix B, and Part 50, Appendix I.

Response to Question 11.05-15:

a) After the isolation valves of the liquid waste storage system, the treated wastewater travels through a double-walled pipe to the discharge canal. The treated waste water is diluted with water from the Lined Retention Pond. The treated wastewater environmental interface

occurs at the discharge structure. The discharges from the liquid waste storage system do not interact with the circulating water system.

U.S. EPR FSAR Tier 2, Section 11.2.3 will be revised to include the information above. Additionally, U.S. EPR FSAR Tier 2, Figure 11.5-1 will be revised to clarify the water source as the lined retention pond and discharge path.

b) This question is addressed in the Response to RAI 301, Question 11.02-17, Part 2.

c) A response to this question will be provided by November 25, 2009.

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 11.2.3 and Figure 11.5-1 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

Treated wastewater held in the monitoring tanks must be sampled and analyzed in the laboratory before its release can be authorized. The laboratory analysis confirms that the activity of the wastewater in the monitoring tanks is within release limits. Once the laboratory results have been reviewed and confirmed to be within release limits, release is authorized. During the release, two radiation sensors in the activity-measurement tank and two flow sensors downstream of the tank continually monitor and record the discharge. If the sensors detect activity or an activity release rate in excess of release limits, or if a significant discrepancy exists between the two activity measurements or the two flow measurements, the sensors signal automatic valve closure, which terminates the release. After the isolation valves of the liquid waste storage system, the treated wastewater travels through a double-walled pipe to the discharge canal. The treated waste water is diluted with water from the lined retention pond. The treated wastewater environmental interface occurs at the discharge structure. The discharges from the liquid waste storage system do not interact with the Circulating Water System (CWS).

11.05-15a

11.2.3.1 Discharge Requirements

Discharge requirements consist of liquid radioactive waste activity, flow monitor alarm settings, and automatic isolation settings. These requirements are established for each batch of monitoring tank treated wastewater to meet the ALARA design objectives.

11.2.3.2 Estimated Annual Releases

The GALE Code (Reference 1) was used to provide an estimate of annual releases from the U.S. EPR. Input parameters used in the GALE code model for the U.S. EPR are presented in Table 11.2-3—Liquid and Gaseous Effluent Input Parameters for the GALE Computer Code. Liquid releases (for a single plant unit) in units of Curies/year at the liquid effluent discharge point are presented in Table 11.2-4—Releases to Liquid Effluent Discharge Point (Ci/yr) Calculated by GALE Code.

11.2.3.3 Release Points and Dilution Factors

The liquid waste storage system has a single release point. The release is further diluted to meet the ALARA design objectives of 10 CFR Part 50, Appendix I. This regulation specifies maximum annual values for dose and dose commitment for individuals in an unrestricted area from the pathways of exposure. The U.S. EPR complies with these values with a dilution flow of 100 cubic feet per second (cfs) without additional downstream dilution. Since dilution is site dependent, discharge flow rates vary for each release.

The activity in the liquid effluent is diluted by two potential means prior to reaching a given dose receptor. The first is the mixing that occurs in the discharge canal, prior to the effluent reaching the plant outfall. The flowrate for this discharge dilution is site-

Figure 11.5-1—Radioactive Effluent Flow Paths With Process and Effluent Radiation Monitors