## ArevaEPRDCPEm Resource

**From:** BRYAN Martin (EXTERNAL AREVA) [Martin.Bryan.ext@areva.com]
**Sent:** Thursday, September 30, 2010 11:37 AM
**To:** Tesfaye, Getachew
**Cc:** DELANO Karen (AREVA); ROMINE Judy (AREVA); BENNETT Kathy (AREVA); NOXON David (AREVA); HALLINGER Pat (EXTERNAL AREVA)
**Subject:** DRAFT Response to U.S. EPR Design Certification Application RAI No. 438, FSARCh. 12, OPEN ITEM
**Attachments:** RAI 438 Supplement 1 Response US EPR DC - DRAFT.pdf

Getachew,

Attached is a draft in support of the final response date of November 1, 2010. Let me know if the staff has questions or if this response can be sent as a final response.

Thanks

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

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**From:** BRYAN Martin (External RS/NB)
**Sent:** Friday, September 24, 2010 4:24 PM
**To:** 'Tesfaye, Getachew'
**Cc:** DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); NOXON David (RS/NB)
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 438, FSARCh. 12, OPEN ITEM

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 438 Response US EPR DC.pdf," provides the schedule for a technically correct and complete response to the one question.

The following table indicates the respective pages in the response document, "RAI 438 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

| Question # | Start Page | End Page |
|---|---|---|
| RAI 438 — 12.03-12.04-23 | 2 | 3 |

The schedule for technically correct and complete responses to these questions is provided below.

| Question # | Response Date |
|---|---|
| RAI 438 — 12.03-12.04-23 | November 1, 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:** Friday, August 27, 2010 5:53 PM
**To:** ZZ-DL-A-USEPR-DL
**Cc:** Bernal, Sara; Roach, Edward; Patel, Jay; Colaccino, Joseph; ArevaEPRDCPEm Resource
**Subject:** U.S. EPR Design Certification Application RAI No. 438 (4907), FSARCh. 12, OPEN ITEM

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on August 18, 2010, and on August 27, 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:** 2068

**Mail Envelope Properties** (BC417D9255991046A37DD56CF597DB7107BEBBC4)

**Subject:** DRAFT Response to U.S. EPR Design Certification Application RAI No. 438, FSARCh. 12, OPEN ITEM
**Sent Date:** 9/30/2010 11:37:03 AM
**Received Date:** 9/30/2010 11:37:44 AM
**From:** BRYAN Martin (EXTERNAL AREVA)

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

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"HALLINGER Pat (EXTERNAL AREVA)" <Pat.Hallinger.ext@areva.com>
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| **Files** | **Size** | **Date & Time** |
|---|---|---|
| MESSAGE | 2785 | 9/30/2010 11:37:44 AM |
| RAI 438 Supplement 1 Response US EPR DC - DRAFT.pdf | 434904 | |

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

**Response to**

**Request for Additional Information No. 438(4907), Revision 1, Supplement 1**

**8/27/2010**

**U. S. EPR Standard Design Certification**
**AREVA NP Inc.**
**Docket No. 52-020**
**SRP Section: 12.03-12.04 - Radiation Protection Design Features**
**Application Section: Section 12.3-12.4 Radiation Protection Design Features**

**QUESTIONS for Health Physics Branch (CHPB)**

DRAFT

**Question 12.03-12.04-23:**

**OPEN ITEM**

**Follow-up to OPEN ITEM RAI 228, Question No. 12.3-12.4-10 and RAI 360 Question 12.3-12.4-20:**

In response to RAI 360 Question 12.3-12.4-20 Part 4 the applicant provided a description of the design features for the condensate/feedwater storage and transfer system as well as main steam and auxiliary steam systems which demonstrate compliance with 10 CFR 20.1406. In addition the applicant makes the statement that the portions of these systems outside of containment are readily accessible for inspection. However, the FSAR was not revised to include this information. Please revise the 20.1406 discussion in section 12.3 of the FSAR to include the information on inspectability of these systems (as stated in the RAI 228 Question 12.3-12.4-20 Part 4 response).

**Response to Question 12.03-12.04-23:**

U.S. EPR FSAR Tier 2, Section 12.3.6.5.13 will be added to describe how the condensate and feedwater system (CFS) and the main steam and auxiliary steam systems comply with 10 CFR 20.1406.

**FSAR Impact:**

U.S. EPR FSAR Tier 2, Section 12.3.6.5.13 will be added as described in the response and indicated on the enclosed markup.

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# U.S. EPR Final Safety Analysis Report Markups

DRAFT

12.03 - 12.04-23

- Penetrations through outer walls of a building containing radioactive systems will be sealed to prevent leaks to the environment. The integrity of such seals will be periodically verified.

### 12.3.6.5.13 Condensate and Feedwater System, Main Steam Supply System, and Auxiliary Steam System

The condensate and feedwater system (CFS) is designed to provide feedwater to the steam generators (SGs) at the required temperature, pressure, and flow rate. Condensate is pumped from the main condenser hotwell by the condensate pumps, passes through the low pressure feedwater heaters and the deaerator-feedwater storage tank to the main feedwater pumps, and is then pumped through the high pressure feedwater heaters to the steam generators. Except for the blowdown heat exchanger cooling water, the condensate system is located in the Turbine Building. The CFS is described in Section 10.4.7.

The main steam supply system (MSSS) conveys steam from the SGs to the high pressure turbine. The MSSS also provides steam to the second stage reheaters, deaerator pegging steam, and backup auxiliary steam. The MSSS is described in Section 10.3.

The CFS and the MSSS/auxiliary steam system are not normally radioactive. The designs are consistent with the U.S. EPR contaminant management philosophy in compliance with 10 CFR 20.1406:

- Radiation monitors detect steam generator tube ruptures (SGTR), which are described in Sections 12.3.6.1.5 and 5.2.5.5.4.
- The radiation monitors on each main steam line are located just outside the containment as shown in Figure 10.3-1—Main Steam Supply System, Sheet 1.
- MSSS design feature reduce contamination in the event of a SGTR by closing the dedicated main steam isolation valve (MSIV) to isolate the affected SG.
- CFS design features reduce contamination in the event of a SGTR by closing the main feedwater isolation valve and the full-load isolation valve to isolate the water side of the affected SG.
- For the portions outside of containment, the piping and equipment in MSSS, auxiliary steam system, and CFS are accessible for inspection. The isolation valves outside the containment are located in dedicated UJE valve rooms. The dedicated UJE valve rooms are placed in the upper section (> +64 ft) of the UJK buildings.

### 12.3.6.6 Operational Program to Minimize Contamination

The operational program to minimize contamination throughout the lifecycle of the facility is described in Section 12.5.

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