

ArevaEPRDCPEm Resource

From: BRYAN Martin (EXT) [Martin.Bryan.ext@areva.com]
Sent: Monday, March 01, 2010 4:45 PM
To: Tesfaye, Getachew
Cc: DELANO Karen V (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); ROMINE Judy (AREVA NP INC); PANNELL George L (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 364, FSAR Ch. 5 OPEN ITEM
Attachments: RAI 364 Response US EPR DC.pdf

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information RAI 364. The attached file, "RAI 364 Response US EPR DC.pdf" provides technically correct and complete responses to 1 of the 1 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 364 Question 05.04.02.02-16.

The following table indicates the respective pages in the response document, "RAI 364 Response US EPR DC.pdf" that contains AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 364 — 05.04.02.02-16	2	2

This concludes the formal AREVA NP response to RAI 364, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Martin (Marty) C. Bryan
Licensing Advisory Engineer
AREVA NP Inc.
Tel: (434) 832-3016
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From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Tuesday, February 02, 2010 11:02 AM
To: ZZ-DL-A-USEPR-DL
Cc: Makar, Gregory; Terao, David; Roy, Tarun; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 364 (4327), FSAR Ch. 5 OPEN ITEM

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on February 2, 2010, and on the same day February 2, 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 question in this RAI is an OPEN ITEM in the safety evaluation report for Chapter 5 for Phases 2 and 3 reviews. As such, the schedule we have established for your application assumes technically correct and complete responses prior to the start of Phase 4 review. For any RAI that cannot be answered prior to the start of Phase 4 review, it is expected that a date for receipt of this information will be provided 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: 1199

Mail Envelope Properties (BC417D9255991046A37DD56CF597DB71056B2DC4)

Subject: Response to U.S. EPR Design Certification Application RAI No. 364, FSAR Ch. 5
OPEN ITEM
Sent Date: 3/1/2010 4:45:11 PM
Received Date: 3/1/2010 4:45:14 PM
From: BRYAN Martin (EXT)

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

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Files	Size	Date & Time
MESSAGE	2234	3/1/2010 4:45:14 PM
RAI 364 Response US EPR DC.pdf		32618

Options

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

Response to

Request for Additional Information No. 364(4327), Revision 1

2/2/2010

U. S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 05.04.02.02 - Steam Generator Program

Application Section: 5.4.2.5

**QUESTIONS for Component Integrity, Performance, and Testing Branch 1
(AP1000/EPR Projects) (CIB1)**

Question 05.04.02.02-16:

OPEN ITEM

Follow-up to RAI 63, Question 05.04.02.02-11

The response to RAI No. 63, Question 05.04.02.02-11, included a modification to Technical Specification 5.5.8.d.1 regarding the initial inspection of 100 percent of the tubes in original and replacement steam generators (SGs). The proposed technical specification states, "Inspect 100% of the tubes in each SG during the first refueling outage and following SG replacement." This statement does not clearly require the 100% tube inspection during the first refueling outage following SG replacement. Please provide a revision to clarify the requirement to inspect 100% of the tubes in newly installed original and replacement steam generators during the first refueling outage following installation. (For example, "Inspect 100% of the tubes in each SG during the first refueling outage following SG installation.")

Response to Question 05.04.02.02-16:

U.S. EPR FSAR Tier 2, Chapter 16, Technical Specification Section 5.5.8.d.1 will be revised to clarify the requirement to inspect 100 percent of the tubes in newly installed original and replacement steam generators during the first refueling outage following installation.

FSAR Impact:

U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications Section 5.5.8.d.1 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

5.5 Programs and Manuals

5.5.8 Steam Generator (SG) Program (continued)

In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than an SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 0.125 gpm per SG.
 3. The operational LEAKAGE performance criterion is specified in LCO 3.4.12, "RCS Operational LEAKAGE."
- c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.
- d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of Specifications 5.5.8.d.1, 5.5.8.d.2, and 5.5.8.d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.
1. Inspect 100% of the tubes in each SG during the first refueling outage and following SG installation replacement.

05.04.02.02-16

