## ArevaEPRDCPEm Resource

**From:** Tesfaye, Getachew
**Sent:** Monday, June 15, 2009 8:13 PM
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**Subject:** U.S. EPR Design Certification Application RAI No. 244 (2958), FSAR Ch. 5
**Attachments:** RAI_244_SBPB_2958.doc

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on June 5, 2009, and on June 12, 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
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**Hearing Identifier:** AREVA_EPR_DC_RAIs
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Request for Additional Information No. 244 (2958), Revision 0

6/15/2009

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 05.02.05 - Reactor Coolant Pressure Boundary Leakage Detection
Application Section: 5.2.5

QUESTIONS for Balance of Plant Branch 2 (ESBWR/ABWR) (SBPB)

05.02.05-5

This RAI is a follow-up to **RAI 154, Question 05.02.05-1**. The acceptance of GDC 2 is based on the guidance of regulatory Guide (RG) 1.29, "Seismic Design Classification," Regulatory Position C.1 for the safety-related portions of the systems and Position C.2 for the nonsafety-related portions of the system. The staff reviewed FSAR, Revision 0, Section 5.2.5 and Table 3.2.2-1, "Classification Summary," against RG 1.29. The staff was not able to find the safety classification information in FSAR Section 5.2.5, and the reactor coolant pressure boundary (RCPB) leakage detection system is not identified in Table 3.2.2-1.

The applicant was requested, in RAI 154, Question 05.02.05-1, to clarify the safety classification of the RCPB leakage detection system in the FSAR. In the response to Question 05.02.05-1, the applicant referred to the response to RAI 168, Question 03.06.03-19. The staff reviewed the response to RAI 168, Question 03.06.03-19, and did not find the safety classification of the RCPB leakage detection system.

Therefore, the applicant is requested the second time to clarify the safety classification of the RCPB leakage detection system in the FSAR.

05.02.05-6

This RAI is a follow-up to **RAI 154, Question 05.02.05-2.** The staff reviewed the alarms and readouts of leakage in the control room in accordance with SRP Section 5.2.5, Subsection III.5. FSAR Section 5.2.5.5 states the leakage detection systems provide data to the instrumentation and control systems for indication, alarm, and archival. Operators in the main control room (MCR) are provided with the leakage rate, gallon per minute (gpm), from each detection system and a common leakage equivalent (gpm) from both identified and unidentified sources. Alarms indicate that leakage has exceeded predetermined limits. In reviewing the above, however, the staff could not find anywhere in the FSAR the procedures, chart, or graph that are promised for the operator to convert the instrument indications of various leakage detection (e.g., containment radioactivity monitor, containment sump monitor, containment air cooler condensate flow rate monitor) into common leakage rate (gpm). Therefore, the staff requested the applicant to provide the following information in RAI 154, Question 05.02.05-2:

a Identify a combined license (COL) information item to require the COL applicant provide operators the procedures, chart, or graph that permits rapid conversion of instrument indications of various leakage detection instruments into common leak rate (gpm).

b Define the alarm setpoints and demonstrate the setpoints are sufficiently low to provide an early warning for operator actions prior to Technical specification (TS) limits.

In the RAI response, the applicant stated that the requested information will be provided in site-specific plant operating procedures, which are the responsibility of the COL applicant as described in U.S. EPR FSAR Tier 2, Section 13.5. The staff reviewed FSAR Section 13.5 and did not find the COL information item that would require the COL applicant to provide information as related to conversion of instrument indications and alarm setpoint for early warning.

The applicant is requested the second time to identify a COL information item in FSAR Tier 2, Table 1.8-2, "Combined License Information Items," to address the above COL information.

05.02.05-7

This RAI is a follow-up to **RAI 154, Question 05.02.05-3.** An important safety issue lesson learned from the Davis Besse reactor vessel head leakage event of 1992 indicated that small RCS leakage and boron corrosion, if it lasts for a long time, can be a significant safety concern. This concern was not recognized in Revision 0 of RG 1.45 because it was published in 1973. However, in Revision 1 of RG 1.45, dated May 2008, the concern was identified. The FSAR does not state that procedures will be developed to adequately provide operators an early warning mechanism and provide guidance in response to a low-level leakage (well below TS limits) event such as the one occurred in Davis Besse. In RAI 154, Question 05.02.05-3, the staff requested the applicant to provide a COL information item regarding the requirement to develop procedures for determining operator responses (identifying, monitoring, trending, locating) to prolonged low-level leakage conditions. In the response to the RAI, the applicant referred to the response to Question 05.02.05-2 and did not provide the requested COL information item to manage the low level RCPB leakage.

The applicant is requested the second time to provide the COL information discussed above.

05.02.05-8

This RAI is a follow-up to **RAI 154, Question 05.02.05-4.** FSAR Tier 2, Table 14.3-8, "ITAAC Screening Summary (Sheet 6 of 7)," shows that the leakage detection is within the scope of Tier 1, and has an ITAAC. The staff found it in FSAR Tier 1 Section 2.4.8, "Leakage Detection." However, there is inadequate description of the leak detection systems and no ITAAC. The applicant was requested to provide a more detailed design description and appropriate ITAAC table to verify the design features of the leakage detection systems as described in FSAR Tier 2 in RAI 154, Question 05.02.05-4. In the

response to the RAI, the applicant used its screening process and determined that the RCPB leakage detection system need not be in the ITAAC. The staff reviewed the applicant's response and found it not acceptable. The applicant's ITAAC screening process did not adequately considered the lesson learned for the operating experience of Davis Besse reactor vessel head leakage event of 1992, and therefore, did not recognize the safety significance of the RCPB leakage detection. It's determination of not providing ITAAC for RCPB leakage detection is inconsistent with all the other design certification applications.

The applicant is requested the second time to provide ITAAC for the RCPB leakage detection as discussed above.