ArevaEPRDCPEm Resource

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Sent: Wednesday, December 10, 2008 5:10 PM
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Subject: Draft - U.S. EPR Design Certification Application RAI No. 154 (1761, 1755), FSAR Ch. 5
Attachments: Draft RAI_154_SBPB_1761_SRSB_1755.doc

Attached please find draft RAI No. 154 regarding your application for standard design certification of the U.S. EPR. If you have any question or need clarifications regarding this RAI, please let me know as soon as possible, I will have our technical Staff available to discuss them with you.

Please also review the RAI to ensure that we have not inadvertently included proprietary information. If there are any proprietary information, please let me know within the next ten days. If I do not hear from you within the next ten days, I will assume there are none and will make the draft RAI publicly available.

Thanks,
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Hearing Identifier: AREVA_EPR_DC_RAIs
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Request for Additional Information No. 154 (1761, 1755), Revision 0

12/10/2008

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 05.02.05 - Reactor Coolant Pressure Boundary Leakage Detection
SRP Section: 05.04.12 - Reactor Coolant System High Point Vents

Application Section: FSAR Ch 5

QUESTIONS for Balance of Plant Branch 2 (ESBWR/ABWR) (SBPB)
QUESTIONS for Reactor System, Nuclear Performance and Code Review (SRSB)

05.02.05-1

The acceptance of GDC 2 is based on the guidance of RG 1.29, 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 RCPB leakage detection system is not identified in Table 3.2.2-1. The applicant is requested to clarify the safety classification of the RCPB leakage detection system in the FSAR by either explicitly stating the system being nonsafety-related or identifying the portions of the system being safety-related.

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 MCR are provided with the leakage rate (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 requests the applicant to provide the following information

(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 set points and demonstrate the set points are sufficiently low to provide an early warning for operator actions.

05.02.05-3

The operating experience at Davis Besse indicated that prolonged low-level unidentified leakage inside containment could cause material degradation such that it could potentially compromise the integrity of a system leading to the gross rupture of the reactor coolant pressure boundary. The DC applicant does not indicate that sufficient procedures for identifying, monitoring, and trending prolonged low-level leakage are to be developed and provided to the operators. Reliance only on leak rate alarms setpoint at the TS limits is not adequate without proper compensatory measures. Guidance and Regulatory Positions about developing procedures for ensuring effective management of leakage, including low-level leakage, is available in RG 1.45, Revision 1. The staff requests the applicant to provide a COL information item that requires a COL applicant to establish procedures that specify operator actions (identifying, monitoring, trending, locating) in response to prolonged low leakage conditions that exist above normal leakage rates and below the TS limit to provide the operator sufficient time to take actions before the TS limit is reached. Please include this information in the FSAR and provide a markup in your response.

05.02.05-4

The applicant has not provided adequate Tier 1 ITAAC information to demonstrate compliance with the design criteria required by GDCs 2 and 30. 10 CFR 52.47(b) (1) requires that a design certification (DC) application contain the proposed ITAAC that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a plant that incorporates the design certification is built and will operate in accordance with the design certification, the provisions of the Atomic Energy Act, and NRC regulations. The ITAAC should address the sensitivity, response time, and alarm limits for the RCPB leakage detection instruments. The staff requests the applicant to provide ITAAC for this system or to provide adequate justification for ITAAC being not required. The DC applicant should provide this information in the DC application FSAR.

05.04.12-2

Provide discussions regarding provision of flow restriction in the RCS high point vent flow path to assure that the size of the orifice in the vent line is smaller than the size corresponding to the definition of a LOCA to avoid unnecessary challenges to the ECCS.

05.04.12-3

Provide discussions regarding RCS high point vents on the top of the pressurizer relative to the design requirements of this system to demonstrate that the vent system currently provided at the top of the pressurizer meet all design requirement specified for the RCS high point vents including the requirements of 10 CFR 50.46a.

05.04.12-4

Provide discussion regarding operating procedures including instrumentation required by operators and the bases for these procedures for the RCS system high point vents.