ArevaEPRDCPEm Resource

From: Tesfaye, Getachew
Sent: Wednesday, June 09, 2010 8:13 AM
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Cc: Dehmel, Jean-Claude; Roach, Edward; Jennings, Jason; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 392 (4650), FSAR Ch. 11, PHASE 4 RAI
Attachments: RAI_392_CHPB_4650.doc

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on April 28, 2010, and on June 7, 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,
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Hearing Identifier: AREVA_EPR_DC_RAIs
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Request for Additional Information No. 392(4650), Revision 1

6/9/2010

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: FSAR 11.5

QUESTIONS for Health Physics Branch (CHPB)

11.05-21

Phase 4 RAI

Follow-up to Open Item 276, Question 11-05-13, Supplement 2 Response

In the response dated Nov. 12, 2009, the applicant provides information addressing the staff's questions about the provision for instrumentation and sampling system and their performance characteristics in complying with the RCS operational leakage rate of 1 GPM under U.S. EPR TS 16.3.4.12.b. While the staff confirmed the results of a selected set of conditions, a review of the response raises the following concerns. Specifically, the applicant is requested to address the following issues and revise the response and FSAR accordingly. The issues are:

1. Figure 11.05-13-1 presented in the response should be expanded to include in the right ordinate axis, the derived dynamic response range of the instrumentation showing where the 1 GPM criterion would be met.

2. Given that the response includes information addressing the implementation and application of the methodology described in the calculations, there is a need to include for COL applicants a reference to the supporting calculation package in FSAR Section 11.5.5. This information would be valuable for the COL applicant in defining procurement specifications for the related radiation monitoring instrumentation and sampling system, and for developing operating procedures in ensuring that the instrumentation will measure containment airborne concentrations over the stated dynamic response range once installed in the plant.

3. The last sentence of the proposed text (which would support the info in FSAR Table 11.5-1) should be qualified as it is not clear if the stated dynamic response range does account for the effects of filtration of airborne radioactivity from the internal filtration system, and whether under routine operation, the internal filtration system would be in continuous operation.

4. While the response acknowledges that some design features and operating characteristics of the radiation monitoring and sampling system cannot be defined at this stage of the design certification, there is a need to alert COL

applicants of these important considerations. As a result, Areva is requested to include a COL information item that places the responsibility on the COL applicant to provide plant-specific information describing how design features, installation, and implementation of operating procedures for this system will address compliance with the RCS operational leakage rate of 1 GPM under U.S. EPR TS 16.3.4.12.b. In confirming that the instrumentation and sampling system can detect and operate over the stated design certification dynamic range, the COL information item should address:

a. the representativeness of the chosen sampling or monitoring location (ambient containment, ventilation ductwork, or process stream),

b. consider expected particle size distributions and determine the need for isokinetic sampling when extracting aerosol samples from ductwork,

c. design features that minimize sample line losses and correction for line losses from the sampling location to the point of collection and measurement,

d. type of filter media and collection or retention efficiency for expected radionuclides physical and chemical properties,

e. considerations in selecting fixed or moving filter system and associated sampling flow rates, including detector to filter media geometry dependencies, fixed particulate filter replacement frequency, and equilibrium conditions of moving particulate filter system in detecting airborne radioactivity corresponding to a RCS operational leakage rate of 1 GPM,

f. radiation detection method and detection efficiencies for radionuclide distributions stated in the design certification or alternate set of surrogate radionuclides, and

g. placement of radiation monitoring instrumentation in plant areas that minimize interferences from ambient external radiation levels.