ArevaEPRDCPEm Resource

From: Tesfaye, Getachew
Sent: Wednesday, March 02, 2011 9:51 PM
To: 'usepr@areva.com'
Cc: Ashley, Clinton; Jensen, Walton; Jackson, Christopher; McKirgan, John; Carneal, Jason; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 468 (5335, 5356), FSAR Ch. 6
Attachments: RAI_468_SPCV_5335_5356.doc

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on January 6, 2011, and on March 2, 2011, 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
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Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 2632

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From: Tesfaye, Getachew

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Request for Additional Information No. 468(5335, 5356), Revision 0

03/02/2011

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 06.02.02 - Containment Heat Removal Systems
Application Section: 6.2.2

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

06.02.02-82

In a conference call on December 16, 2010, AREVA personnel and NRC staff discussed conservative assumptions for calculating the maximum IRWST temperature and the minimum containment pressure for the purpose of evaluating available NPSH to use in safety analyses. NRC staff determined that an important consideration would be the assumptions for mixing of the water spilled from the break with the containment atmosphere. The staff requests the following information so that this issue may be resolved:

a. Identify the limiting break size and location for evaluating available NPSH.

b. Provide tables of all mass and energy release sources not included with those provided in FSAR Rev. 2 Section 6.2.1.

c. Discuss how all mass and energy sources are added and mixed with the containment atmosphere or water pools in a matter so that IRWST temperature is maximized and containment pressure is minimized.

d. If heat transfer areas are utilized between the containment atmosphere and streams of water exiting the break, provide these areas and discuss how they were calculated so as to be conservative. Consider stream divergence, splashing and droplet formation.

06.02.02-83

Follow-up to RAI 416, Question 06.02.01-94

In a November 5, 2010 response to RAI 416, Question 06.02.01-94, dated 11/05/2010, the applicant provided design information related to the mixing dampers and convection foils. The staff has reviewed the information and requires additional information.

Specifically, the staff asked for test data to demonstrate the capability of the foils and dampers. In response, the applicant included performance criteria in the FSAR and noted that vendor-specific qualification testing was not done because specific vendors have not been selected. The staff accepts the performance criteria and agrees that the vendor-specific qualification testing is not necessary for certification. However, proof of concept testing is needed for certification because the foils and dampers appear to be first-of-a-kind applications.

The staff is unaware of any testing or operating experience associated with similar passive mixing dampers that consist of a spring loaded actuator and includes a flap with a horizontal opening axis, similar to a butterfly valve. Additionally, the staff is unaware of any testing or operating experience associated with similar convection foils that consist of two frames connected by hinges on the rear side, and a fusible link mounted on the front. Provide either a summary of proof-of-concept testing that demonstrates the foils and dampers that are described in the FSAR are capable of accomplishing the safety function or relevant operating experience that demonstrates the foils and dampers similar to those described in the FSAR are capable of accomplishing the safety function.