ArevaEPRDCPEm Resource

From: Tesfaye, Getachew
Sent: Wednesday, December 08, 2010 8:37 AM
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Cc: Chakravorty, Manas; Hawkins, Kimberly; Miernicki, Michael; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: Draft - U.S. EPR Design Certification Application RAI No. 463 (5280, 5281), FSAR Ch. 3
Attachments: Draft RAI_463_SEB2_5280_5281.doc

Attached please find draft RAI No. 463 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. 463(5280, 5281), Revision 0

12/8/2010

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 03.07.01 - Seismic Design Parameters
SRP Section: 03.07.03 - Seismic Subsystem Analysis

Application Section: 03.07

QUESTIONS for Structural Engineering Branch 2 (ESBWR/ABWR Projects) (SEB2)

03.07.01-30

Follow Up to RAI 371, Question 03.07.01-29

In its response to the second part of Question 03.07.01-29**,** the applicant states that it evaluated the impact of the Bell Bend lower bound, best estimate, and upper bound cases on the seismic response of the RCS. The results of this evaluation were not provided as part of the response. The Bell Bend ground response spectra exceed that of the EUR hard soil spectra at frequency values above approximately 22 cps to 70 cps. Although much of the structural response of the RCS may take place at frequencies below 22 cps, the applicant has not demonstrated that the application of the Bell Bend spectra does not have an impact on the results of the RCS structural analysis including any amplified response spectra generated from this analysis for subsequent use. Thus it cannot be concluded that the certified design of the RCS meets the requirements of GDC 2. As a result, AREVA is requested to provide a comparison of the RCS structural response using the EUR governing cases with that of the Bell Bend lower bound, best estimate and upper bound cases including a comparison of RCS amplified response spectra, if applicable, which demonstrates that the EUR governing cases control the seismic design of the RCS. In its response, AREVA should describe the analysis methodology used to determine the Bell Bend RCS response. AREVA should also identify and justify the cutoff frequency used for this analysis. In addition, AREVA is requested to update U.S. EPR FSAR, Tier 2, Appendix 3C.4.2.2.1 to describe how the Bell Bend cases were analyzed and their impact, if any, on the seismic design of the RCS.

03.07.03-40

Follow Up to RAI 370, Question 03.07.03-38

The staff has reviewed the final response to Question 03.07.03-38 and is unable to conclude that the design of a Seismic Category I structure system or component (SC I SSC) is adequately protected from the failure and possible impact by a non-SC I SSC and therefore the SC I SSC may not meet the design requirements of GDC 2.

a. The applicant is requested to provide the basis for assuming a 15 degree impact envelope above the SC I SSC and why this is a conservative assumption.

b. The wording under the last bullet on Page 3.7-298 of the U.S. EPR FSAR mark up is not consistent with the wording in Section 3.7.3.8.2 on page 3.7-297. In each case the issue being addressed is the same, i.e., evaluation of the impact of an SC I SSC by a non-SC I SSC. On page 3.7-297, it states that an evaluation is performed to determine that the intended safety-function of the SC I SSC is not lost as a result of the impact. This wording is acceptable to the staff. However, in the last bullet on page 3.7-298, it states an evaluation is performed to determine that unacceptable damage has not occurred to the SC I SSC. Ensuring that unacceptable damage has not occurred does not necessarily mean the intended safety-function of the SC I SSC has been preserved. As such, the applicant is requested to explain why the wording of the acceptance criteria for impact evaluation found in the second bullet on page 3.7-298 is different from that on page 3.7-297. In addition, the applicant is requested to provide specific examples of how the criteria on page 3.7-298 will be implemented in evaluating the impact of a SC I SSC by a non-SC I SSC and how the intended safety function of a SC I SSC is ensured through the use of this criteria.