

CCNPP3eRAIPEm Resource

From: Arora, Surinder
Sent: Friday, January 20, 2012 6:47 AM
To: Infanger, Paul; UNECC3Project@unistarnuclear.com
Cc: CCNPP3eRAIPEm Resource; Segala, John; Jeng, David; Wilson, Anthony; Vrahoretis, Susan; Thomas, Brian; Miernicki, Michael
Subject: Final RAI 333 SEB2 6214
Attachments: FINAL RAI 333 SEB2 6214.doc

Paul,

Attached please find the subject request for additional information (RAI). The draft of this RAI was sent to you on January 4, 2012. In a phone call on January 17, 2012, you confirmed that no clarification phone call was required to clarify any questions in the draft RAI and this RAI can be issued as "Final" with no changes. Accordingly, this email forwards the subject RAI for your response.

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 schedule date for submitting your technically correct and complete response will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the review schedule.

Your response letter should also include a statement confirming that the response does or does not contain any sensitive or proprietary information.

Thanks

SURINDER ARORA, PE
PROJECT MANAGER,
Office of New Reactors
US Nuclear Regulatory Commission

Phone: 301 415-1421
FAX: 301 415-6406
Email: Surinder.Arora@nrc.gov

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From: Arora, Surinder

Created By: Surinder.Arora@nrc.gov

Recipients:

"CCNPP3eRAIEm Resource" <CCNPP3eRAIEm.Resource@nrc.gov>
Tracking Status: None
"Segala, John" <John.Segala@nrc.gov>
Tracking Status: None
"Jeng, David" <David.Jeng@nrc.gov>
Tracking Status: None
"Wilson, Anthony" <Anthony.Wilson@nrc.gov>
Tracking Status: None
"Vrahoretis, Susan" <Susan.Vrahoretis@nrc.gov>
Tracking Status: None
"Thomas, Brian" <Brian.Thomas@nrc.gov>
Tracking Status: None
"Miernicki, Michael" <Michael.Miernicki@nrc.gov>
Tracking Status: None
"Infanger, Paul" <paul.infanger@unistarnuclear.com>
Tracking Status: None
"UNECC3Project@unistarnuclear.com" <UNECC3Project@unistarnuclear.com>
Tracking Status: None

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Request for Additional Information No. 333 (eRAI 6214)

1/20/2012

Calvert Cliffs Unit 3

UniStar

Docket No. 52-016

SRP Section: 03.08.04 - Other Seismic Category I Structures

Application Section: FSAR Section 3.8

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

03.08.04-29

Supplemental RAI for RAI 144, Question Number 03.08.04-7 (eRAI ID 2196)

In RAI number 03.08.04-7, the staff requested that the applicant provide design reports for the site-specific structures in Calvert Cliffs Unit 3 FSAR Sections 3.8.4.4.6 (Other Seismic Category I Structures - Design Report) and 3.8.5.4.5 (Foundations - Design Report), or expand Appendix 3E.4 to include the information described in SRP 3.8.4, Appendix C.

The staff reviewed the response to RAI number 03.08.04-7 provided in UniStar Letter UN#10-193 dated July 23, 2010 (ML102100480), and also reviewed Revision 7 of the Calvert Cliff Unit 3 FSAR. The RAI response indicated that the analysis and design of buried duct banks and buried pipes will be performed during detailed design engineering and the design information and results will be incorporated into revised CCNPP Unit 3 FSAR Appendix 3E.4, prior to closure of ITAAC described in Table 2.4-8 in Revision 7 of CCNPP Unit 3 ITAAC.

The staff found that the RAI response and the revised FSAR do not provide sufficient information as requested by the RAI, and additional information is needed to resolve this RAI. Since buried duct banks and buried pipes are also seismic Category I structures, the design reports with the same level of design information as that for other seismic Category I structures, such as the UHS MWIS and the Forebay, should be provided for these structures. Additionally, as requested by the original RAI, the design reports should be prepared in accordance with the guideline described in NUREG-0800 SRP Section 3.8.4, Appendix C, which indicates that the design information should include structural geometry and dimensions, key structural elements and description, engineering drawings, tabulation of capacities, etc. The staff needs to complete the review and evaluation of this information prior to the closure of the Safety Evaluation Report (SER). Therefore, the staff requests that the applicant provide the specific date when the design reports will be provided.

The staff needs the above information in order to be able to conclude in the SER that there is reasonable assurance that FSAR Section 3.8.4 sufficiently meets the pertinent provisions of SRP 3.8.4.

03.08.04-30

Supplemental RAI for RAI 301, Question 03.08.04-22 (eRAI 5556)

SRP Sections 3.8.4.I.6 and SRP 3.8.5.I.6 discuss information on the materials used in the construction of Seismic Category I structures and their foundations. In RAI 301, Question 03.08.04-22, the staff requested that the applicant explain the inconsistency between CCNPP Unit 3 FSAR Revision 7 and AREVA's RAI response/EPR FSAR Revision 3 interim on the use of the waterproofing system for Seismic Category I foundations below grade.

The staff reviewed the RAI response provided in UniStar Letter UN#11-258, dated September 22, 2011 (ML11269A046). The RAI response addresses most of the staff's concern. However, the staff's review of the proposed FSAR markups determined that not all FSAR sections related to the use of the waterproofing system are covered, e.g., a markup to Section 3.8.5.5 is not provided. Therefore, the staff requests that the applicant provide FSAR updates for all applicable 3.8 subsections related to the use of waterproofing and dampproofing systems.

The staff needs the above information to determine whether FSAR Sections 3.8.4.6.1 and 3.8.5.6.1 are consistent with SRP Acceptance Criteria 3.8.4.II.6 and 3.8.5.II.6.

03.08.04-31

Supplemental RAI for RAI 310, Question 03.08.04-26 (eRAI 5746)

SRP acceptance criterion 3.8.4.II.7 discusses information on testing and inservice surveillance requirements. In RAI 310, Question 03.08.04-26, the staff requested that the applicant explain whether the periodic monitoring program, for buried concrete duct banks that may be exposed to low-pH groundwater, also covers buried piping. The staff reviewed the RAI response provided in UniStar Letter UN#11-262, dated October 3, 2011 (ML11277A229).

The staff determined that the RAI response addresses most of the staff's concern. The staff notes that the discussions on buried piping in both the RAI 310, Question 03.08.04-26 and FSAR Section 3.8.4.7 apply to all buried piping. However, the proposed markup for Section 3.8.4.7 references Section 9.2.5.6, which discusses only the UHS Makeup Water System components, for the description of the periodic in-service testing of buried piping using flow or pressure test. Therefore, the staff request that the applicant clarify that the discussion in the proposed markup for Section 3.8.4.7 is for all buried piping and revise the FSAR markup accordingly.

The staff needs the information to be able to conclude that there is reasonable assurance that inservice inspection requirements for buried Seismic Category I structures and piping are consistent with SRP acceptance criteria 3.8.4.II.7.

Supplemental RAI for RAI 310, Question 03.08.04-27 (eRAI 5746)

In RAI 310, Question 03.08.04-27, the staff requested that the applicant explain whether all the exterior walls of the UHS MWIS are subject to breaking wave pressures and revise FSAR Section 3.8.4.3.1 accordingly.

The staff reviewed the RAI response provided in UniStar Letter UN#11-238, dated August 26, 2011 (ML11241A1960). The RAI response indicated that only the East Wall, which is facing the Bay, is subject to the breaking wave pressure. However, no explanation is provided on the change from multiple walls to one single wall being subject to breaking wave pressure. Therefore, provide additional information to justify the assumption that only the East Wall is subject to breaking wave pressure.

In addition, FSAR Revision 7, Section 2.4.5.3.2 states that "The maximum wave run-up on the intake structure was computed to be 15.6 ft. This run-up, combined with the Probable Maximum Storm Surge, will reach an elevation of 33.2 ft NGVD 29 as shown on Figure 2.4-26." This elevation of 33.2 ft is higher than the elevation of the crest of the wave based on the applicant's calculations which utilize ASCE 7-05 for wave pressure calculations. The staff's review of FSAR Revision 7 Section 3.8 and related RAI responses cannot determine whether the run-up water elevation has been taken into account in the wave pressure calculations. Therefore, the staff requests that the applicant clarify that the run-up water elevation has been taken into account in the design of the exterior walls of the UHS MWIS. The applicant is also requested to correlate the run-up water elevation used in the design with the water run-up elevations described in FSAR Figure 2.4-26.

The staff needs the information to be able to conclude that there is reasonable assurance that design loads for the site-specific Category I structures have been adequately addressed in the CCNPP Unit 3 FSAR.