CCNPP3eRAIPEm Resource

From: Arora, Surinder
Sent: Friday, January 21, 2011 11:14 AM
To: 'Poche, Robert'; 'cc3project@constellation.com'; Scott, Roger D
Cc: CCNPP3eRAIPEm Resource; Jeng, David; Hawkins, Kimberly; Colaccino, Joseph; Miernicki, Michael; Wilson, Anthony; Vrahoretis, Susan
Subject: Final RAI 275 SEB2 5205
Attachments: FINAL RAI 275 SEB2 5205.doc

Rob,

Attached please find the subject request for additional information (RAI). The draft of this RAI was sent to you on December 10, 2010. A clarification phone call requested by UniStar was held on January 13, 2011, which resulted in no changes to the draft RAI questions.

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
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Request for Additional Information No. 275 (eRAI 5205)

1/20/2011

Calvert Cliffs Unit 3
UniStar
Docket No. 52-016
SRP Section: 14.03.02 - Structural and Systems Engineering - Inspections, Tests, Analyses, and Acceptance Criteria
Application Section: FSAR 14.3.2

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

14.03.02-13

The staff reviewed the RAI response to Question 14.03.02-2 A provided in UniStar Letter UN#10-071 dated March 31, 2010 (ML100950110) and found that the responses to Items 2 to 6 and 8 of the RAI are adequate, however, the following information is needed to address Items 1 and 7 of the RAI:

Regarding Item 1, the RAI response did not provide the markup to CCNPP Unit 3 FSAR Section 14.3.2 to show that the revised title of this section will be "Structural and Systems Engineering – Inspections, Tests, Analyses, and Acceptance Criteria." Please provide the markup showing the proposed change to the FSAR.

Regarding Item 7, the RAI response explained that several of the interface requirements listed in FSAR Table 14.3-3 are associated with the design criteria for a SSC. The RAI response also explained that the CCNPP Unit 3 COLA contains the specific design criteria that have adequate information for the NRC to establish the acceptability of the site-specific design to meet those interface requirements, therefore, no ITAAC were provided for those items. The specific interface requirements listed in Table 14.3-3 under discussion are as follows:

The COL Applicant will provide the design of the Fire Protection Storage Tanks and Building.
The COL Applicant will provide the design of the Switchgear Building.
The COL Applicant will provide the design of the Turbine Building.
The COL Applicant will provide the design of the Access Building.

For the Fire Protection Storage Tanks and Building, Table 14.3.3 references Section 3.7.2.3.3 and Section 3.7.2.8 for design information. For the Switchgear Building, the Turbine Building and the Access Building, Table 14.3.3 references Table 3.2-1 for design information.

The staff reviewed the FSAR tables/sections referenced above, and found that the referenced sections and table for the Fire Protection Storage Tanks and Building, the Switchgear Building, the Turbine Building and the Access Building contain only structural seismic classifications and references to design codes for the design of these structures. The staff considers that there is insufficient design information provided in the referenced sections or table to satisfy the interface requirements for these structures. Specifically, the design information should consist of a summary of the analysis and

design approach (including acceptable codes and standards, load and load combinations, analysis procedures, acceptance criteria and materials) and design results for some representative structural members. Therefore, the staff requests that the applicant explain where the design information, to satisfy the interface requirements for these structures, is included in the FSAR; otherwise, include the information in an appropriate section of the CCNPP Unit 3 FSAR. For any of the design information that is identical to other Category I structures, a reference to the appropriate subsections in the FSAR would be adequate.

The staff needs the above information to be able to conclude in the SER that there is reasonable assurance that the specific COL interface requirements listed in Table 14.3-3, as discussed above, have been adequately implemented and addressed in the CCNPP Unit 3 COLA.

14.03.02-14

The staff reviewed the RAI response to Question 14.03.02-2 F provided in UniStar Letter UN#10-071 dated March 31, 2010 (ML100950110) and found that the RAI responses to Items 1 through 5 of the RAI are adequate. However, the RAI response also indicated that Part 10, "ITAAC," Appendix B, Table 2.4-1 of FSAR, Revision 6 had been updated and a markup to the updated table had been provided in UniStar letter UN#10-027 dated January 29, 2010. The staff reviewed the updated table and found that the following information is needed:

a. No explanation has been provided for the removal of the commitment requirements regarding quality, gradation, and static and dynamic properties of structural fill from Items 1 and 2 in Part 10, "ITAAC," Appendix B, Table 2.4-1 of FSAR, Revision 6. Provide a technical explanation for the removal of these items or restore these items to the table.

b. UniStar letter UN#10-027 provided a markup of ITAAC Table 2.4-1, Rev. 6 that added Items 2 through 5 related to the shear wave velocity limit of structural fill material for a variety of structures. Clarify whether these four items cover all Seismic Category I and Seismic Category II-SSE structures that utilize structural fill. If not, explain why not.
The staff needs the information requested above to be able to conclude in the SER that adequate ITAAC is proposed and there is reasonable assurance that adequate ITAAC, including the properties of structural fill material for a variety of structures, as appropriate, will be implemented pursuant to 10 CFR 52.80(a).

14.03.02-15

The staff reviewed the RAI response to Question 14.03.02-2 G (Partial) provided in UniStar Letter UN#10-071 dated March 31, 2010 (ML100950110) and found that the response to Items 1, 2a, 3a and 4 of the RAI is adequate, however, the following information is needed to address Items 2c and 3c of the RAI:

Regarding Item 2c of the RAI, for the structures listed in ITAAC Tables 2.4-2 through 2.4-6, the RAI response described two specific parameters that must be met: the maximum water-to-cementitious materials ratio and the maximum limit on supplemental cementitious materials. However, only one parameter, the maximum water-to-cementitious material ratio, was included in the markup to updated ITAAC Tables 2.4-2

through 2.4-6, and ITAAC information on supplementary cementitious material was removed from these tables.

Regarding Item 3c of the RAI, for the structures listed in ITAAC Tables 2.4-7 through 2.4-10, the response described one specific parameter that must be met: the maximum water-to-cementitious materials ratio. This parameter was included in the markup to updated ITAAC Tables 2.4-7 through 2.4-10, and ITAAC information on supplementary cementitious material was removed from these tables.
The staff requests that the applicant provide a technical justification for the removal of ITAAC information on supplementary cementitious material from the ITAAC Tables 2.4-2 through 2.4-10, or revise these tables to include the maximum limit on supplemental cementitious materials.

14.03.02-16

The staff reviewed the response to Question 14.03.02-2 K 1-4 provided in UniStar Letter UN#10-160 dated June 18, 2010 (ML101740227) and found that the response to Items 1, 2 and 4 of the RAI is adequate, however, the following additional information is needed regarding Item 3 of the RAI:

Item 3 of the RAI is related to the need for ITAAC to require an analysis for reconciling the as-built plant with all the structural design-basis loads and acceptance criteria, and a report documenting the analysis results. The response indicated that COLA Part 10 - ITAAC, Appendix B Table 2.4-9 Items 3 and 4 had been revised to include separate analysis and inspection ITAAC, and Table 2.4-9 Item 5 was also revised. The revised Table 2.4-9 shows that all of the Items 3, 4 and 5 in the table include an inspection that verifies deviations from the approved design will be reconciled and a report that concludes deviations from the approved design are reconciled. The staff's review of the response and the revised table found that neither the response nor the revised table clearly indicate whether an analysis for reconciling the as-built plant with the structural design-basis loads would be performed. Therefore, the staff requests that the applicant clarify whether an analysis for reconciling the as-built plant with structural design-basis loads will be performed. If not, explain why not. If yes, revise the response and Table 2.4-9 to clearly state that the analysis will be performed. If the analysis is performed only under certain conditions, provide the criteria for determining when the analysis has to be performed. Such criteria should be indicated in the revised ITAAC Table 2.4-9. The staff needs the above noted clarification to ensure that adequate ITAAC is proposed and there is reasonable assurance that adequate ITAAC, including reconciliation of as-built plant with the structural design-basis loads and acceptance criteria by analysis, as appropriate, will be implemented pursuant to 10 CFR 52.80(a).