CCNPP3eRAIPEm Resource

From: Arora, Surinder
Sent: Thursday, October 07, 2010 1:38 PM
To: 'Poche, Robert'; 'cc3project@constellation.com'; Scott, Roger D
Cc: CCNPP3eRAIPEm Resource; Raione, Richard; Jones, Henry; Tiruneh, Nebiyu; Colaccino, Joseph; Biggins, James; Vrahoretis, Susan; Chazell, Russell; Steckel, James
Subject: FINAL RAI 265 RHEB 5103
Attachments: FINAL RAI 265 RHEB 5103.doc

Rob,

Attached please find the subject request for additional information (RAI). The draft of this RAI was sent to you on October 1, 2010. In a phone call on October 7, 2010, you informed us that UniStar does not need a clarification phone call for this RAI and the RAI can be issued final.

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,
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US Nuclear Regulatory Commission

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From: Arora, Surinder

Created By: Surinder.Arora@nrc.gov

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Request for Additional Information No. 265 (eRAI 5103)

10/7/2010

Calvert Cliffs Unit 3
UniStar
Docket No. 52-016
SRP Section: 02.04.12 - Groundwater
Application Section: Section 2.4

QUESTIONS for Hydrologic Engineering Branch (RHEB)

02.04.12-13

In order to make safety conclusions and determine compliance with regulatory requirements in 10 CFR 100.20(c), 10 CFR 50, Appendix A - GDC 2, and 10 CFR 52.79(a)(1)(iii) Staff requests the following:

1. In response to RAI 101, Question 02.04.12-11, the Applicant provided a Groundwater Model Study report and associated model input files for a multi-layer groundwater flow model used to assess post-construction groundwater elevations, transport pathways, and radionuclide transport (in COL FSAR 2.4.13). The model provides a detailed representation of the excavation and building foundations of CCNPP Unit 3, but does not represent the use of lean concrete as a fill material. As described in COL FSAR Section 2.5.4.5, Rev. 6, excavation in the power block area is to the Stratum IIb Chesapeake Cemented Sand and "excavations are backfilled with compacted structural fill to the foundation level of structures or lean concrete is placed as a leveling mat," (FSAR pg 2-1241). As noted at COL FSAR pg. 2-1261, "Lean concrete, in lieu of compacted structural fill, with a minimum unconfined compressive strength of 2,000 psi is used under the Common Basemat," which supports the reactor, fuel, and safeguards buildings (as shown in COL FSAR Figure 2.5-104). The emplacement of the lean concrete is shown in the excavation profiles of COL FSAR Figures 2.5-130 to 2.5-134. Provide a revised analysis of groundwater flow that includes the use of lean concrete in the excavation or the technical basis for omitting the lean concrete from the groundwater flow analysis.

2. In response to RAI 144, Question 03.08.04-4, the Applicant provided a description of the waterproofing system to be used to protect concrete foundations. Provide the technical basis for omitting the waterproofing materials from the groundwater flow analysis.

3. In response to RAI 144, Question 03.08.04-12, the Applicant described groundwater monitoring in the powerblock area to ensure that unprotected concrete is not exposed to low pH groundwater. Provide in COL FSAR 2.4.12, a description of, or a reference to, the groundwater monitoring discussed in the response to RAI 144, Question 03.08.04-12.

4. Provide a reference supporting the values of hydraulic conductivity used for the structural fill material.

5. In the responses to RAI 101 Question 02.04.12-11 and RAI 103, Question 02.04.13-4, new effective porosity values are used. The origin of these effective porosity values appears to be solely discussed in Section 5.2.2 of the Groundwater Model Report. Provide a discussion of the origin of the effective porosity values in COL FSAR 2.4.12 or 2.4.13.

6. In the response to RAI 103, Question 02.04.13-4, the COL FSAR markup for Section 2.4.13.1.4.10 contains two errors related to the effective porosity. In the first paragraph of the discussion “Dimensions of the Contaminant Slug”, the contaminant slug volumes presented in that section were derived from the use of the prior effective porosity value, not the new value of 0.145. Staff notes that the slug volumes given in Table 2.4-200 are correct, however. Correct the text in COL FSAR 2.4.13.1.4.10 and verify that the correct contaminant slug volumes were used in the transport calculations.