CCNPP3COLA PEmails

From: Arora, Surinder
Sent: Tuesday, April 13, 2010 3:14 PM
To: 'Poche, Robert'; 'cc3project@constellation.com'
Cc: CCNPP3COL Resource; Karas, Rebecca; Wang, Weijun; Rodriguez, Ricardo; Colaccino, Joseph; Steckel, James; Biggins, James; Vrahoretis, Susan; Hair, Christopher
Subject: DRAFT RAI 229 RGS1 4566
Attachments: DRAFT RAI 229 RGS1 4566.doc

Rob,

Attached is DRAFT RAI No. 229 (eRAI No. 4566). You have until April 27, 2010 to review it and decide whether you need a conference call to discuss any questions in this RAI before the final issuance. After the phone call or on April 27, 2010, the RAI will be finalized and sent to you for response. You will then have 30 days to provide a technically complete response or an expected response date for the RAI.

Thanks.

SURINDER ARORA, PE
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Hearing Identifier: CalvertCliffs_Unit3Cola_Public_EX
Email Number: 1264

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Subject: DRAFT RAI 229 RGS1 4566
Sent Date: 4/13/2010 3:14:00 PM
Received Date: 4/13/2010 3:14:01 PM
From: Arora, Surinder

Created By: Surinder.Arora@nrc.gov

Recipients:
"CCNPP3COL Resource" <CCNPP3COL.Resource@nrc.gov>
Tracking Status: None
"Karas, Rebecca" <Rebecca.Karas@nrc.gov>
Tracking Status: None
"Wang, Weijun" <Weijun.Wang@nrc.gov>
Tracking Status: None
"Rodriguez, Ricardo" <Ricardo.Rodriguez@nrc.gov>
Tracking Status: None
"Colaccino, Joseph" <Joseph.Colaccino@nrc.gov>
Tracking Status: None
"Steckel, James" <James.Steckel@nrc.gov>
Tracking Status: None
"Biggins, James" <James.Biggins@nrc.gov>
Tracking Status: None
"Vrahoretis, Susan" <Susan.Vrahoretis@nrc.gov>
Tracking Status: None
"Hair, Christopher" <Christopher.Hair@nrc.gov>
Tracking Status:: Response: None : 4/13/2010 1:42:00 PM
"'Poche, Robert'" <Robert.Poche@constellation.com>
Tracking Status: None
"'cc3project@constellation.com'" <cc3project@constellation.com>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	644	4/13/2010 3:14:01 PM
DRAFT RAI 229 RGS1 4566.doc	37882	

Options
Priority: Standard
Return Notification: No
Reply Requested: Yes
Sensitivity: Normal
Expiration Date:
Recipients Received:

Request for Additional Information No. 229 (eRAI 4566)
DRAFT
4/13/2010

Calvert Cliffs Unit 3
UniStar
Docket No. 52-016
SRP Section: 02.05.04 - Stability of Subsurface Materials and Foundations
Application Section: 2.5.4

QUESTIONS for Geosciences and Geotechnical Engineering Branch 1 (RGS1)

02.05.04-17

FSAR Subsection 2.5.4.10.2.2 states that the initial effective stress conditions used in the FEM settlement model were in "accordance with the post-excavation overburden geometry" with an average surface elevation of 83 ft. In addition, the model assumed that excess pore water pressures created during excavation and dewatering are fully dissipated. It also presents the settlement analysis results, total and differential settlements for individual seismic Category I structures, based on a series of static loads applied to assimilate the assumed construction schedule, without consideration of dynamic loads created by seismic events.

1. Please explain the adequacy of the initial stress conditions selected in your FEM settlement calculation.

2. Please evaluate the possibility of any additional settlement caused by seismic event at the site.

3. Please address the effects of soil parameter variation and spatial variability on your settlement analysis.

4. Please address differential settlement between the nuclear island and adjacent structures, and compliance with the U.S. EPR standard design.

5. Please justify the assumptions, especially the determination of stress increases in each layer, used in the hand calculation of settlement you performed.

02.05.04-18

FSAR Section 2.5.4.10.6 presents the calculation of static and seismic lateral pressures. Since several assumptions were used in the calculations,

1. Please evaluate the pressure induced by compaction of side backfill in the lateral earth pressures calculation.

2. Please justify the use of a Poisson's ratio value of 0.3 for the saturated portions of the backfill in your calculation of seismic lateral earth pressures.

3. Please discuss how the site-specific lateral earth pressure analysis is consistent with the standard design.

02.05.04-19

FSAR Section 2.5.4.10.1 states that the dynamic bearing capacity for the NI was assessed by dividing the ultimate bearing capacity obtained over a FOS of 2.0 and comparing it with the allowable capacity permitted in the U.S. EPR FSAR. Please discuss any possible deduction of bearing capacity under seismic/dynamic loadings.

02.05.04-20

In order for staff to conduct confirmatory analyses, please provide bearing capacity and settlement calculation documents, such as: CCNPP unit 3 Power Block Area Settlement (09-4179.01-F22), Bearing Capacity of Safety Related Buildings at CCNPP Unit 3 (09-4179.01-F25) and other documents, as well as computer files, identified during the March 16-17, 2010 site audit as needed for confirmatory analyses.