

PMSTPCOL PEmails

From: Tai, Tom
Sent: Tuesday, December 01, 2009 12:12 PM
To: Price, John E
Cc: STPCOL; Mookhoek, William
Subject: STP - Draft RAI 4048 Chapter 3.8.5
Attachments: RAI 4048 03.08.05-xx.doc

John,

Attached for your information and use is a draft copy of RAI 4048 for Chapter 3.8.5. This is a supplement to RAI 3324 (RAI Question 03.08.05-1).

Please let me know if you need a clarification phone call on or before 12/8. If I do not hear from you by then, this RAI will be issued formally.

Regards

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From: Tai, Tom

Created By: Tom.Tai@nrc.gov

Recipients:

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Tracking Status: None

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Tracking Status: None

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Request for Additional Information No. 4048 Revision 3

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 03.08.05 - Foundations
Application Section: FSAR 3.8

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

03.08.05-***

Follow-up to Question 03.08.05-1 (RAI 3324)

The applicant's response to RAI 03.08.05-1 states that "the differential settlements will be determined based on detailed settlement calculations considering the time rate of settlements and construction sequence. Additional information on settlements is provided in the response to RAI 02.05.04-30 (see letter U7-C-STP-NRC-090146 dated September 21, 2009)."

Although the applicant's response to RAI 02.05.04-30 provides general information on the settlement study, the applicant did not provide any information regarding magnitudes of the differential settlements considered for design of site-specific seismic category I structures, and how the differential settlements were included in the analysis of these structures. Therefore, the applicant is requested to clearly describe the magnitudes of differential settlements considered for design of site-specific seismic category I structures, and also explain how differential settlements were accounted for in the analysis of these structures. This information is needed so the staff can conclude that the design of site-specific seismic category I structures has appropriately considered the differential settlements.

Also, the applicant stated in its response that information pertaining to analysis and design results including the coefficient of friction used for sliding evaluation, calculated factors of safety for static and dynamic bearing pressures, lateral pressure on foundation walls, and design details of foundation walls and mat will be provided in a supplemental response to RAI 03.07.01-13 by December 31, 2009. The applicant is requested to either include the above information in its response, or include the information in the December supplemental response, and update the FSAR with relevant information, as appropriate.

03.08.05-***

In FSAR Section 3.8.6.2, "Site Specific Physical Properties and Foundation Settlement," the applicant referred to FSAR Sections 3H.6.4.2 and 2.5S.4 to address COL License Information Item 3.24, which required that the physical properties of the site-specific subgrade medium be determined, and the settlement of foundations and structures, including seismic category I, be evaluated. In FSAR Section 2.5S.4.10.4, the applicant provided a settlement evaluation of the structures and stated that "from the differential settlement value, angular distortions/tilts were estimated (based on average foundation

plan dimension), and for all evaluated structures were within the acceptable limit of 1/300.” It is not clear if the applicant implied that the ABWR DCD standard plant structures were designed using the above acceptable limit. Therefore, the applicant is requested to confirm that the angular distortions/tilts due to differential settlement determined for the STP site are enveloped by the corresponding values used for design of ABWR DCD standard plant structures, and if not, provide justification for acceptability of angular distortions determined for these structures for the STP site. Please also explain how the site-specific differential settlements between adjacent buildings are considered acceptable in relation to their impact on tunnels and other commodities between these buildings for the standard plant structures. Please include pertinent references to the sources of any information used in the response. This information is needed so the staff can conclude that the applicant has completed all actions required by COL License Information Item 3.24.