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Ref. # 10 CFR 52

October 6, 2010

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
ATTN: David B. Matthews, Director
Division of New Reactor Licensing

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4
DOCKET NUMBERS 52-034 AND 52-035
SUPPLEMENTAL INFORMATION FOR THE RESPONSE TO REQUEST FOR
ADDITIONAL INFORMATION NO. 4760

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein supplemental information for the response to Request for Additional Information (RAI) No. 4760 for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. The RAI involves the affect of the Squaw Creek Reservoir slope on the SSI analysis and the stability of Unit 3 ultimate heat sink structures.

Should you have any questions regarding this supplemental response, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me.

There are no commitments in this letter.

I state under penalty of perjury that the foregoing is true and correct.

Executed on October 6, 2010.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

Attachment: Supplemental Response to Request for Additional Information No. 4760 (CP RAI #171)

DO90
NRO

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SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035

RAI NO.: 4760 (CP RAI #171)

SRP SECTION: 03.07.02 – Seismic System Analysis

QUESTIONS for Structural Engineering Branch 1 (AP1000/EPR Projects) (SEB1)

DATE OF RAI ISSUE: 7/12/2010

QUESTION NO.: 03.07.02-17

This request for additional information (RAI) is necessary for the staff to determine if the application meets the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 2; 10 CFR Part 50 Appendix S; and 10 CFR Part 100; as well as the guidance in NUREG-0800, 'Standard Review Plan for the Review of Safety Analysis for Nuclear Power Plants,' Chapter 3.7.2, 'Seismic Design Parameters.'

In the response to RAI 22 (2929) question 02.05.04-9, the applicant indicated that the soil-structure interaction (SSI) calculation is bounding and is based upon the calculations using one surface foundation (no-fill) case and four embedded foundation cases. For the embedded foundation cases, it is believed that SSI analyses are based on the half-space assumption of horizontal soil layers extending to infinity in all directions. However, the applicant did not specifically discuss the validation of the half-space assumption for the power block structures setting back from the top of the Squaw Creek reservoir slopes about 150 feet.

The applicant is requested to discuss the potential impact of the nearby slopes indicated in the site profiles on the computed SSI responses to ensure that the computed seismic responses will not be under-estimated at some frequencies of interest.

Specifically, the staff would like to know how the Squaw Creek Reservoir slope may affect the SSI analysis and the stability of Unit 3 ultimate heat sink (UHS) structures, which are located near the reservoir slope, as shown in FSAR Figure 2.1-201.

Also, explain how the retaining wall (as shown in figure 2.5.5-206 of the FSAR) was considered in the UHS SSI analysis. Determine whether failure of the wall would affect the lateral stability of the UHS safety-related structure.

References:

Luminant's Final Responses to Requests for Additional Information No. 2929; Log No. TXNB-09059; dated October 28, 2009; ML093080096.

Luminant's Final Responses to Requests for Additional Information No. 2929; Log No. TXNB-09042;
dated September 10, 2009; ML092580684.

SUPPLEMENTAL INFORMATION:

In the response to this question (ML102290040), Figure 1 presented the in-structure response spectra (ISRS) obtained from the SSI analyses of the UHSRS basin foundation slab, for the best estimate and lower bound no-fill cases and for the embedded cases (lower bound separated, best estimate separated, upper bound separated, and high bound separated), together with the horizontal input design response spectra for the 0.1 Hz to 50 Hz frequency range.

The revised Figure 1 presented below includes data for the 50 Hz to 100 Hz range as requested by the NRC staff. Figure 1 shows that the SSI effects on the seismic response of the UHSRS are small. Since variations in surface geometry and properties of the limestone would affect the soil support and the response is shown to be insensitive to the variation in soil support conditions, responses of the UHSRS are not considered to be sensitive to variations in the surface geometry or properties of the limestone due to the presence of the reservoir. Therefore, the presence of the reservoir slope does not impact the SSI results and the use of a horizontally infinite half-space. Further, the consideration of a broad range of embedment conditions ensures that the ISRS results and the design of the UHSRS envelope the actual site conditions.

Impact on R-COLA

None.

Impact on DCD

None.

