

## PMComanchePeakPEm Resource

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**Sent:** Friday, October 02, 2009 5:07 PM  
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**Cc:** Magee, Michael; ComanchePeakCOL Resource  
**Subject:** Comanche Peak RCOLA, Section 2.4.12 - RAI # 114  
**Attachments:** RAI 3672 (RAI 114).doc

The NRC staff has identified that additional information is needed to continue its review of the combined license application. The NRC staff's request for additional information (RAI) is contained in the attachment. Luminant is requested to inform the NRC staff if a conference call is needed.

The response to this RAI is due within 35 calendar days of October 2, 2009

Note: If changes are needed to the safety analysis report, the NRC staff requests that the RAI response include the proposed changes.

thanks,

Stephen Monarque  
U. S. Nuclear Regulatory Commission  
NRO/DNRL/NMIP  
301-415-1544

**Hearing Identifier:** ComanchePeak\_COL\_Public  
**Email Number:** 671

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**Received Date:** 10/2/2009 5:06:42 PM  
**From:** Monarque, Stephen

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**Options**

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Request for Additional Information (RAI) No. 3672

RAI # 114

10/2/2009

Comanche Peak Units 3 and 4  
Luminant Generation Company, LLC.  
Docket No. 52-034 and 52-035  
SRP Section: 02.04.12 - Groundwater  
Application Section: 2.4.12

QUESTIONS for Hydrologic Engineering Branch (RHEB)

02.04.12-1

NUREG-0800, Standard Review Plan (SRP), Chapter 2.4.12, 'Groundwater,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

Provide a description of the process followed to determine the conceptual models subsequently used to establish subsurface site characteristics related to groundwater to ensure that the most conservative of plausible conceptual models have been identified.

02.04.12-2

NUREG-0800, Standard Review Plan (SRP), Chapter 2.4.12, 'Groundwater,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

The CPNPP Units 1 and 2 FSAR states that alterations related to construction increased groundwater levels onsite. In order to understand the effect of construction of Units 3 and 4 on the hydrologic characteristics of the subsurface, plausible groundwater pathways, and site groundwater levels, Luminant is requested to provide a detailed description of the location and extent of planned construction activities including: excavation of regolith/undifferentiated fill and bedrock, the placement of engineered fill and the addition of engineered features (such as drainage ditches, parking lots, roads, etc.). Additionally, please evaluate and discuss the impact of these changes on site hydrologic processes such as infiltration, surface runoff, groundwater levels, hydraulic gradients and flow paths.

02.04.12-3

In accordance with 10 CFR 52.79(a) provide illustrations of cross-sections through the centerline of each proposed reactor area which present the post-construction site configuration, hydro geological units beneath the site (including the Twin Mountains Formation and bedrock transition zone found in the Glen Rose), monitoring wells and borings used as control points and probable directions of groundwater movement. Also provide maps displaying post-construction site features and conceptualize post-construction groundwater conditions.

#### 02.04.12-4

NUREG-0800, Standard Review Plan (SRP), Chapter 2.4.12, 'Groundwater,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

In order to understand impacts of seasonality and climatic fluctuations on aquifers beneath and in the vicinity of the site, Luminant is requested to provide the following information:

- a. Explain or discuss any trends or fluctuations in data from onsite monitoring wells, which will be displayed on the revised hydrographs submitted as part of Luminant's response to Environmental RAI HYD-06.
- b. Correlate data from onsite monitoring wells to monitoring data from area wells with longer records, and provide a discussion of any apparent seasonal and climatic trends and aquifer response to historic precipitation conditions.
- c. Identify current precipitation conditions at the site (i.e., wet, normal or drought conditions) and evaluate and discuss the effect that long-term wet and dry periods will have on the post-construction groundwater conditions and compliance with the design criteria maximum groundwater level.

#### 02.04.12-5

The four groundwater flow paths and related travel time scenarios presented in FSAR Section 2.4.12.3 are based on current site conditions. To demonstrate compliance with 10 CFR 100.20(c), which requires consideration of site characteristics which may affect flow and transport, please evaluate the applicability of these flowpaths in a post-construction setting and provide a revised description of the most conservative, plausible post-construction flowpaths, if needed.

#### 02.04.12-6

To satisfy 10 CFR 100.20(c) as it relates to evaluating site characteristics important to hydrology, explain how the parameters selected for travel time calculations conservatively represent parameters which may be expected along post-construction flowpaths. Specifically:

- a. Present the range of effective porosities in hydrologic units along potential flowpaths including engineered fill, and describe why lower measured values presented in Chapter 2.5 of the FSAR were not used.
- b. Discuss how averaging of literature values for the effective porosity of the regolith and bedrock (from Reference 2.4-261 of the FSAR), and the use of total porosity in the undifferentiated fill demonstrate conservatism, and
- c. Explain the rationale behind the use of hydraulic conductivity values which are less than the highest values determined through onsite aquifer testing.

02.04.12-7

Section 2.4.12.2.5 of the Update Tracking Report, Rev. 0, dated April 2, 2009, 'Technical Correction Version' of the FSAR dated March 31, 2009 states that the undifferentiated fill, regolith and the shallow Glen Rose Formation which generally coincide with monitoring well zones "a" and "b", will be removed during construction in the power block area. Despite this excavation, it appears that groundwater bearing portions of these formations with water levels, inferred to be above the design maximum groundwater level (on Figures 2.4.12-210 of the FSAR), will be left in place after construction. In accordance with 10 CFR 100.21(d) demonstrate that the maximum operational groundwater level will comply with the design maximum groundwater level.