

## PMComanchePeakPEm Resource

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**From:** Monarque, Stephen  
**Sent:** Friday, September 18, 2009 11:43 AM  
**To:** John.Only@luminant.com; Donald.Woodlan@luminant.com; Eric.Evans@luminant.com; cp34-rai-luminant@mnes-us.com; Diane Yeager; joseph tapia; Kazuya Hayashi; Matthew.Weeks@luminant.com; MNES RAI mailbox; Russ Bywater  
**Cc:** ComanchePeakCOL Resource; Ward, William  
**Subject:** Comanche Peak RCOL- Section 3.7.3 - RAI # 64  
**Attachments:** RAI 2883 (RAI 64).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 42 calendar days of September 18, 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:** 616

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**Subject:** Comanche Peak RCOL- Section 3.7.3 - RAI # 64  
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**From:** Monarque, Stephen

**Created By:** Stephen.Monarque@nrc.gov

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**Post Office:** HQCLSTR02.nrc.gov

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**Options**

**Priority:** Standard

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**Recipients Received:**

Request for Additional Information (RAI) No. 2883

RAI # 64

9/18/2009

Comanche Peak Units 3 and 4  
Luminant Generation Company, LLC.  
Docket No. 52-034 and 52-035  
SRP Section: 03.07.03 - Seismic Subsystem Analysis  
Application Section: 3.7.3

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

03.07.03-1

**RAI 3.7.3-1**

In combined license application (COLA), FSAR, Appendix 3KK (page 3KK-3), it is stated that the hydrodynamic effects of the water in the in the ultimate heat sink (UHS) structures is analyzed using the methodology of American Concrete Institute (ACI) 350.3-06. Describe the differences between the methodology of ACI 350.3-06 and the guidance provided in NUREG-0800 Standard Review Plan, (SRP) Section 3.7.3.II.14.A, and the references therein, and describe how the methodology used in the hydrodynamic analysis of the UHS basins differs from or complies with the SRP guidance.

03.07.03-2

**RAI 3.7.3-2**

In COLA, FSAR Appendix 3KK (page 3KK-3), it is stated that the water within each rectangular region of the UHS structures is separated into impulsive and convective masses, but it is not required that the convective mass of the water in the UHS structures be modeled in the response spectra analysis to obtain seismic demands because the fundamental convective frequency is much lower than structural and soil frequencies.

Because the separation between the convective frequencies, and the structural and soil frequencies is not uncommon, additional justification is requested for deviating from the guidance provided in SRP Section 3.7.3.II.14.A.

In order for the NRC staff to evaluate the analysis of the hydrodynamic effects on the UHS structures, the applicant should provide the following information:

1. Clarification of how the convective mass of the water is treated in the analysis.
2. A description of each of the rectangular regions used in the analysis.
3. The convective frequencies for each of the regions.
4. The convective mass of the water for each of the regions.
5. The critical response parameters for the hydrodynamic analysis of the UHS basins.

Provide estimates of the convective effects on the each of the critical response parameters. That is, the applicant should provide quantitative estimates of the error introduced into the critical response parameters by neglecting the convective effects.