PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Friday, February 26, 2010 8:28 AM
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Cc: ComanchePeakCOL Resource; Magee, Michael
Subject: Comanche Peak RCOL Chapter 2.4.5 - RAI Number 144
Attachments: RAI 4312 (RAI 144).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 or public meeting is needed.

The response to this RAI is due within 35 calendar days of February 26, 2010.

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: 835

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From: Monarque, Stephen

Created By: Stephen.Monarque@nrc.gov

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Request for Additional Information (RAI) No. 4312 COL Revision 1

RAI Number 144

2/26/2010

Comanche Peak Units 3 and 4
Luminant Generation Company, LLC.
Docket No. 52-034 and 52-035
SRP Section: 02.04.05 - Probable Maximum Surge and Seiche Flooding
Application Section: FSAR Section 2.4.5

QUESTIONS for Hydrologic Engineering Branch (RHEB)

02.04.05-5

NUREG-0800, Standard Review Plan (SRP), Section 2.4.5, 'Probable Maximum Surge and Seiche Flooding,' establishes criteria that the NRC staff intends to use to evaluate whether an Applicant meets the NRC's regulations.

The NRC staff issued RAI ID 3667 (RAI 112) Question Number 14254 (02.04.05-1), in which the NRC staff asked "Provide a description of and rationale for the process used to determine the conceptual models for probable maximum hurricane, probable maximum wind storm, seiche and resonance, wave runup, and sediment erosion and deposition to ensure that the most conservative of plausible conceptual models has been identified."

The Applicant responded in document CP-200901564-Log No TXNB-09067-(ML093230704) executed on November 13, 2009. The NRC staff has evaluated the Applicant's response and the related FSAR revisions incorporated through Updated Tracking Report (UTR) Number 4.

The NRC staff determined that the response does not provide a complete description of the causal mechanisms that create hazard from probable maximum hurricane, probable maximum wind storm, seiche and resonance, and wave runup. The Applicant's response dismisses the hurricane surge hazard without considering how a hurricane surge would propagate upstream, notwithstanding the distance of 275 miles. The response cites the use of maximum winds in computing the wave effects, but does not explain why those winds are bounding conservative in terms of their effect on the design basis flood.

In order to make its safety determination based on the use of appropriate quantitative and technical analyses, the staff requests that the Applicant provide additional specific and deductive justification for the bounding conservatism of the approach to hurricane surge hazard and wave runup hazard in Section 2.4.5 of the Combined License (COL) Part 2 FSAR.

This is supplemental RAI 2.4.5-00-S.

02.04.05-6

NUREG-0800, Standard Review Plan (SRP), Section 2.4.5, ‘Probable Maximum Surge and Seiche Flooding,' establishes criteria that the NRC staff intends to use to evaluate whether an Applicant meets the NRC's regulations.

The NRC staff issued RAI ID 3667 (RAI 112) Question Number 14256 (02.04.05-3), in which the NRC staff asked “Provide discussion to clarify the assumptions made and the risk thresholds used to eliminate from consideration the seiche hazard to the site. Provide a quantitative characterization of the term “rare” as used in reference to USACE geologic hazard evaluations of seiche wave risk.”

The Applicant responded in document CP-200901564-Log No TXNB-09067-(ML093230704) executed on November 13, 2009. The NRC staff reviewed the response and the related revisions contained in UTR #4.

The NRC staff determined that the Applicant has not adequately analyzed or reported the potential for landslide-induced seiche in Squaw Creek Reservoir. The Applicant cites slope stability analysis in COL Part 2 FSAR Section 2.5.5 as indicating that “landslide-induced waves are not plausible for the Squaw Creek Reservoir.”

The NRC staff also determined that the slope stability analysis in COL Part 2 FSAR Section 2.5.5 is limited in scope to the subsurface of the power block and ultimate heat sink equipment portions of the proposed site. It does not consider the entire shoreline of Squaw Creek Reservoir, nor does it consider the submerged slopes of the reservoir banks or any submerged accumulation of sediment that may exhibit slope failure within the reservoir.

In order to make its safety determination based on the use of appropriate quantitative and technical analyses and consideration of all mechanisms that could result in a conservative estimate, the staff requests that, that the Applicant include in the FSAR a conceptual model and analysis of landslide-induced seiche within Squaw Creek Reservoir and analyze the effect of such seiche on the design basis flood.

This is supplemental RAI 2.4.5-02-S-a.

02.04.05-7

NUREG-0800, Standard Review Plan (SRP), Section 2.4.5, ‘Probable Maximum Surge and Seiche Flooding,' establishes criteria that the NRC staff intends to use to evaluate whether an Applicant meets the NRC's regulations.

The NRC staff issued RAI ID 3667 (RAI 112) Question Number 14256 (02.04.05-3), in which the NRC staff asked “Provide discussion to clarify the assumptions made and the risk thresholds used to eliminate from consideration the seiche hazard to the site. Provide a quantitative characterization of the term “rare” as used in reference to USACE geologic hazard evaluations of seiche wave risk.”

The Applicant responded in document CP-200901564-Log No TXNB-09067-(ML093230704) executed on November 13, 2009. The NRC staff reviewed the response and the related revisions contained in UTR #4.

The NRC staff has determined that the Applicant has not defined the term “rare”, either in the context of the referenced USACE geologic hazard evaluation or in the context of risk that an extreme seiche would increase the design basis flood for the proposed site.

In order to avoid ambiguity from the usage of generic and overly qualitative terms and base safety determinations on appropriate consideration of relevant mechanisms that could result in conservative estimates, the NRC staff requests that the Applicant define the term “rare” and quantify the risk to the site.

This is supplemental RAI 2.4.5-02-S-b.