PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Tuesday, April 27, 2010 1:25 PM
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Cc: ComanchePeakCOL Resource; Magee, Michael
Subject: Comanche Peak RCOL Chapter 2 Section 2.3.1 - RAI Number 155
Attachments: RAI 4606 (RAI 155).docx

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 April 27, 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
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Request for Additional Information (RAI) No. 4606 COLA Revision 1

RAI Number 155

4/27/2010

Comanche Peak Units 3 and 4
Luminant Generation Company, LLC.
Docket No. 52-034 and 52-035
SRP Section: 02.03.01 - Regional Climatology
Application Section: Regional Climatology

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

02.03.01-6

NUREG-0800, Standard Review Plan (SRP), Chapter 2.3.1, Regional Climatology,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

10 CFR 52.79(a)(1)(iii) states, in part, that the COL application must contain the meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated.

The staff considers temperatures based on a 100-year return period to provide sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated as required by the regulation. This is why SRP 2.3.1 states that 100-year return period ambient temperature and humidity statistics should be identified as site characteristics. Thus, the staff believes the higher of either the maximum recorded dry-bulb value or the maximum 100-year dry-bulb value should be listed as the 0 percent exceedance maximum dry-bulb site characteristic value. Similarly, the lower of either the minimum recorded dry-bulb value or the minimum 100-year dry-bulb value should be listed as the 0 percent exceedance minimum dry-bulb site characteristic value.

- The staff has found, through the use of the 2005 ASHRAE Handbook – Fundamentals for Dallas, TX, the 100-year return period maximum dry-bulb temperature to be higher than that provided in FSAR Table 2.0-1R and FSAR Table 2.3-202. Please either update the appropriate FSAR Sections with a revised 100-year return period maximum dry bulb temperature, or justify the use of the current temperature.

- The staff has found, through the use of the 2005 ASHRAE Handbook – Fundamentals for Dallas, TX, the 100-year return period minimum dry-bulb temperature to be lower than that provided in FSAR Table 2.0-1R and FSAR Table 2.3-202. Please either update the appropriate FSAR

Sections with a revised 100-year return period minimum dry bulb temperature, or justify the use of the current temperature.

02.03.01-7

NUREG-0800, Standard Review Plan (SRP), Chapter 2.3.1, Regional Climatology,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

In RAI 2.3.1-5, the staff requested that Luminant update combined license (COL) FSAR Section 2.3.1.2.8 to address the extreme frozen winter precipitation event and extreme liquid winter precipitation event in accordance with the Interim Staff Guidance (ISG) DC/COL-ISG-07, “Interim Staff Guidance on Normal and Extreme Winter Precipitation Loads on the Roofs of Seismic Category 1 Structures” (ML081990438)”. Based on a review of the updated COL FSAR Section 2.3.1.2.8, provided by Luminant in response to RAI 2.3.1-5, it is unclear whether this ISG was used. Please clarify.

In the updated COL FSAR Section 2.3.1.2.8, Luminant addresses the normal winter precipitation roof load, the extreme winter precipitation roof load (100-year snowpack maximum snow weight including contributing portion of extreme frozen winter precipitation), and the 48-hour probable maximum winter precipitation (PMWP). The results provided in the updated COL FSAR Section 2.3.1.2.8 all indicate values within the bounding values of DCD Rev.2, Table 2.0-1. The staff has also confirmed these values. DCD Rev. 2, Table 2.0-1, further indicates that the extreme winter precipitation roof load should also consider the 100-year snowpack maximum snow weight including the contributing portion of extreme liquid winter precipitation event. Please clarify how this analysis was conducted, along with the results.

02.03.01-8

NUREG-0800, Standard Review Plan (SRP), Chapter 2.3.1, Regional Climatology,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

Regulatory Guide (RG) 1.27, "Ultimate Heat Sink for Nuclear Power Plants," Revision 2 states that the FSAR should include information pertaining to the following:

- The meteorological conditions resulting in maximum evaporation.
- A description on how the worst 30-day average wet-bulb temperature correlates to maximum evaporation potential.

Please update FSAR Section 2.3.1.2.10 to include this information, or provide justification as to why this information should not be included as requested in RG 1.27.

02.03.01-9

NUREG-0800, Standard Review Plan (SRP), Chapter 2.3.1, Regional Climatology,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

Revision 2 to the US-APWR DCD Table 2.0-1 states that the site parameter “Extreme wind speed (other than a tornado),” should be based on 3-second gusts at 33 ft above ground level based on the 100-year return period, with an importance factor of 1.15 for seismic category I/II structures.

Combined License (COL), Part 2, FSAR Table 2.0-1R presents this site characteristic value at 90 mph. However, FSAR 2.3.1.2.11 states that the 3-second gust wind speed for a 100-year return period is 96 mph. The FSAR further states that this value is based on an importance factor of 1.15 and the exposure category is C.

Please update COL, Part 2, FSAR Table 2.0-1R to include the 3-second gust wind speed for a 100-year return period with an importance factor of 1.15 as stated in the US-APWR DCD, or justify the current site characteristic.

02.03.01-10

NUREG-0800, Standard Review Plan (SRP), Chapter 2.3.1, Regional Climatology,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

SRP 2.3.1 Acceptance Criteria #2 states, in part, the applicability of severe weather phenomena data to represent site conditions during the expected period of reactor operation should be substantiated. SRP 2.3.1 Review Procedure #3 states, in part, that current literature on possible changes in the weather in the site region should be reviewed to be confident that the methods used to predict weather extremes are reasonable.

Please include in FSAR Section 2.3.1, a discussion on the potential effects of global climate change on the future regional conditions near the site. Include in the discussion any proposed site characteristics that may be altered or affected due to the potential of climate change.