

## PMComanchePeakPEm Resource

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**Cc:** ComanchePeakCOL Resource; Reyes, Ruth  
**Subject:** Comanche Peak RCOL Chapter 19 - RAI Number 277  
**Attachments:** RAI\_7091 (RAI 277).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 **August 1, 2013**.

Note: The NRC staff requests that the RAI response include any proposed changes to the FSAR.

thanks,

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

**Hearing Identifier:** ComanchePeak\_COL\_Public  
**Email Number:** 1855

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## **Request for Additional Information 277 (7091)**

Issue Date: 08/01/2013

Application Title: Comanche Peak Units 3 and 4 - Dockets 52-034 and 52-035

Operating Company: Luminant Generation Company, LLC.

Review Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

Application Section: 19

### QUESTIONS

19-29

The staff has reviewed the applicant's response to RAI 6877, Question 19-21. The applicant states that, "the occurrence of a wind that exceeds 96 mph (the hundred year site specific extreme wind speed) does not necessarily result in an initiating event for extreme wind since it does not necessarily disable offsite power supplies or impact structures, systems, and components (SSCs) in a manner that will result in core damage." Also, the applicant stated that the only equipment credited for the at power PRA that are not located in Category I or II structures are the non-safety related SSCs that support the alternate component cooling water (CCW) functions of the fire suppression system and the non-essential chilled water system. The Alternate AC system is located within Category I or II structures. The Category I and II structures for the US-APWR standard plant are designed for a base wind speed of 155 mph.

1. The staff reviewed the applicant's full power severe wind core damage frequency estimate based on the Comanche Peak Units 1 and 2 PRA. The severe weather loss of offsite power (LOOP) frequency was reported as  $6.11E-3$  per year. The staff then reviewed Comanche Peak Units 3 and 4 FSAR, Section 3.3.1.1 which states that, "Site-specific structures, systems, and components (SSCs) are designed using the site-specific basic wind speed of 96 mph or higher." Therefore, at wind speeds beyond 96 mph, the applicant has not provided sufficient engineering-based justification to assume that offsite power, the Alternate CCW system, and the non-essential chilled water system will remain functional. Therefore, the staff requests the applicant to perform a full power sensitivity study using the one in 125 year wind speed assuming: (1) a LOOP that would not be recoverable within 24 hours, (2) failure of the Alternate CCW function, and (3) failure of the non-essential chilled water system, or provide a wind-induced fragility assessment for the offsite power system, the Alternate CCW system and the non-essential chilled Water system.

2. The staff reviewed the applicant's severe wind shutdown core damage frequency (CDF) estimate. The applicant used a shutdown severe weather LOOP frequency of  $8.8E-3$ /year based on NUREG-6980 which is not site specific. The estimate also assumed that a LOOP event is coincident with the loss of the non-safety related SSCs that support the alternate CCW functions of the fire suppression system and makeup function of the Refueling Water Storage Auxiliary Tank. The CDF due to

extreme winds during shutdown was estimated to be  $2.8E-8$  per year which is more than 10% of the USAPWR Shutdown internal LPSD CDF of  $1.8E-7$ .

10 CFR 52.79(d)(1) states that if the combined license application references a standard design certification, then "the plant specific PRA information must use the PRA information for the design certification and must be updated to account for site-specific design information and any design changes or departures". Based on Interim Staff Guidance (DC/COL-ISG-3), "the applicant should also address (1) differences between assumptions made in the certified design PRA and site-specific or plant-specific information, (2) the impact of these differences on the plant-specific PRA results and insights, and (3) how the plant-specific PRA information is used to conclude the requirements related to the site, construction, testing, inspection, and operation of the plant are met prior to initial fuel load" given that the wind-induced shutdown CDF is greater than 10% of the US APWR shutdown internal LPSD of  $1.8E-7$ . Therefore, the FSAR should be updated to include this information.

#### 19-30

The staff has reviewed the applicant's response to RAI 6877, Question 19-22. Overall, the staff agrees with the applicant's response. However, the staff identified the following inconsistencies in the proposed FSAR mark-up.

1. To be consistent with ASME/ANS RA-Sa-2009, Table 6-2-3(b) Supporting Requirement for HLR-EXT-B, Criterion 1 should be modified to state that: "The event is of **equal or lower damage potential than a design basis event**"
2. Please eliminate the statement on page 19.1-10, "Based on the discussions in this section, the contribution of such events to the total CDF is considered insignificant as described in Table 19.1-205" or please provide the site-specific probabilistic external flood hazard analysis that supports this statement. Please note that screening of external floods based on Criterion 1 is sufficient.