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Ref. # 10 CFR 52

March 4, 2013

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555  
ATTN: David B. Matthews, Director  
Division of New Reactor Licensing

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4  
DOCKET NUMBERS 52-034 AND 52-035  
SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION  
9 (2576) (SECTION 8.1)

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein supplemental information for the response to Request for Additional Information (RAI) 9 (2576) for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. The supplemental information addresses General Design Criterion 5.

Should you have any questions regarding the supplemental information, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me.

There are no commitments in this letter.

I state under penalty of perjury that the foregoing is true and correct.

Executed on March 4, 2013.

Sincerely,

Luminant Generation Company LLC

*Donald R. Woodlan for*

Rafael Flores

Attachment: Supplemental Response to Request for Additional Information 9 (2576)

DO90  
URO

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## **SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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**Comanche Peak, Units 3 and 4**

**Luminant Generation Company LLC**

**Docket Nos. 52-034 and 52-035**

**RAI NO.: 9 (2576)**

**SRP SECTION: 08.01 - Electric Power - Introduction**

**QUESTIONS for Electrical Engineering Branch (EEB)**

**DATE OF RAI ISSUE: 6/30/2009**

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### **QUESTION NO.: 08.01-2**

The regulatory basis for this question is discussed in 10 CFR Part 50, Appendix A, General Design Criterion 5 "Sharing of Structures, Systems, and Components" and Regulatory Guide 1.81, "Shared Emergency and Shutdown Electric Systems for Multi-Unit Nuclear Power Plants," Revision 1 (January 1975), which describes the NRC staff's techniques in evaluating applications and provides guidance to applicants.

Table 8.1-1 of the US-APWR DCD indicates that 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 5, "Sharing of Structures, Systems, and Components" and RG 1.81, "Shared Emergency and Shutdown Electric Systems for Multi-Unit Nuclear Power Plants," are not applicable to the US-APWR DCD.

- (1) Please explain how a sharing of structures, systems and components will not occur at Comanche Peak Nuclear Power Plant (CPNPP), which, if a license is granted in this proceeding will become a four-unit plant.
- (2) Discuss the applicability or non-applicability of the 10 CFR Part 50, Appendix A, GDC 5 and/or of RG 1.81 to CPNPP, Units 3 and 4.

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### **SUPPLEMENTAL INFORMATION:**

On a conference call with the NRC staff on February 6, 2013, Luminant agreed to provide a supplemental response to this question stating Luminant's position related to the applicability of GDC 5 to the offsite power system, specifically the Comanche Peak Units 3 and 4 switching station. Luminant has provided its position in the previous responses to this question (ML092240406 and ML11223A057), and in the response to RAI 249-6316 (ML12138A203).

The previous responses remain correct except that Luminant now agrees that GDC 5 applies to and is thus included in the licensing basis for the switching station. Although the current design of the switching station complies with GDC 5 because the switching station does not contain any structures, systems, or

components (SSCs) that are important to safety as stated in FSAR Subsection 8.1.2.1 marked-up in response to RAI 249-6316, if any modifications are made to the switching station that include any SSCs which are important to safety and shared by both units, those SSCs will need to meet the requirements of GDC-5.

FSAR Subsections 8.1.2.1 and 8.2.2.1 have been revised to state Luminant's position and to reorganize the FSAR to bring the discussions related to the capability of the offsite power system and shared components to a single location.

Impact on R-COLA

See attached marked-up FSAR Revision 3 pages 8.1-1, 8.1-2, 8.2-10 and 8.2-11

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

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**Part 2, FSAR**

**8.0 ELECTRIC POWER**

**8.1 INTRODUCTION**

This section of the referenced Design Control Document (DCD) is incorporated by reference with the following departures and/or supplements.

**8.1.1 General**

CP COL 8.2(3) Replace the fourth paragraph in **DCD Subsection 8.1.1** with the following.

**Figure 8.1-1R** is a simplified electrical one line diagram depicting the alternating current (ac) and direct current (dc) onsite and offsite electric power system including the site-specific switchyard.

**8.1.2.1 Utility Power Grid Description**

CP COL 8.2(1) Replace the paragraph in **DCD Subsection 8.1.2.1** with the following.

Oncor Electric Delivery Company LLC (Oncor) is the transmission service provider (TSP) for the Comanche Peak Nuclear Power Plant (CPNPP). Oncor operates the largest distribution and transmission system in Texas, providing power to three million electric delivery points over more than 101,000 miles of distribution and 14,000 miles of transmission lines. Oncor operates in a service area of east, west, and north central Texas and serves cities that include the Dallas-Fort Worth area and surrounding cities. The Oncor grid is connected to fossil-fueled plants, combustion turbine plants and nuclear plants supplying electric energy over a transmission system consisting of various voltages up to 345 kV. Oncor is a member of Electric Reliability Council of Texas (ERCOT). ERCOT is comprised of members engaged in generation, transmission, distribution and marketing of electric energy in the state of Texas. ERCOT is the independent system operator that oversees all generation and transmission functions.

A new 345 kV switching station for CPNPP Units 3 and 4 (plant switching station) is constructed prior to fuel loading. The plant switching station is a part of the ERCOT grid and has four outgoing transmission circuits to remote substations as described in **Section 8.2**. In addition, the plant switching station has four independent overhead transmission tie lines, two for CPNPP Unit 3 and the other two for CPNPP Unit 4. The plant switching station has two main buses configured in a breaker and a half scheme. ~~The switching station equipment shared between Units 3 and 4, including the circuit breakers, has the capacity and is configured such that sharing will not significantly impair the ability to provide offsite power in response to an accident in one unit and an orderly shutdown and cooldown of the remaining unit and that adequate offsite power capacity exists to support both~~

RCOL2\_08.0  
1-2 S03  
RCOL2\_08.0  
1-3

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~~units during this scenario. No important to safety SSCs are shared between Units 3 and 4 under any operating scenario (normal or emergency).~~

RCOL2\_08.0

1-3

RCOL2\_08.0

1-2 S03



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prevent it from performing its intended function is immediately identified by the main control room operator.

Methods and procedures for confirming the operational readiness of offsite power systems are provided to verify that main control room operators are aware of the capability of the offsite power system to supply power during operation and situation that can result in a loss of offsite power (LOOP) following a trip of the plant.

Adequate procedures, administrative controls, and protocols are implemented to ensure that no modifications of the offsite power system circuits credited for satisfying GDC 17 without the performance of a proper safety evaluation.

Grid reliability evaluations are performed for maintenance or modifications to the offsite power system, as part of the maintenance risk assessment required by 10 Code of Federal Regulations (CFR) 50.65 before performing "grid-risk-sensitive" maintenance activities. The results of the grid reliability evaluations are evaluated by the maintenance rule program which is described in **Subsection 17.6.2**.

Communication links exist between the main control room operators and ERCOT/Oncor as a means to obtain timely information on power grid operating conditions and status to verify the operability of the offsite power grid in accordance with the requirements of the technical specifications. Communications with ERCOT/Oncor exist for restoration of offsite power in the event of a LOOP or station blackout.

Real time analysis tools are provided to evaluate the impact of the loss or unavailability of various transmission system elements. The evaluation results of these analysis tools notify the main control room operators to provide compensatory actions for the event.

CP COL 8.2(1)

**8.2.2.1**      **Applicable Criteria**

RCOL2\_08.0  
1-2 S03

Add the following sub-paragraph at the end of the third bullet of DCD Subsection 8.2.2.1:

GDC 5 applies to the CPNPP Units 3 and 4 switching station. The design of the switching station complies with GDC 5 because the switching station SSCs are not important to safety. In addition:

- The offsite power system has adequate capacity to support the auxiliary loads of one unit connected to the switching station during an accident while providing for an orderly shutdown and cool down of the remaining unit.

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- The switching station equipment shared between Units 3 and 4, including the circuit breakers, has the capacity and is configured such that sharing will not significantly impair the ability to provide offsite power in response to an accident in one unit and an orderly shutdown and cool down of the remaining unit.
- No SCCs which are important to safety are shared between Unit 3 and Unit 4 under any operating scenario (normal or emergency).

RCOL2\_08.0  
1-2 S03

CP COL 8.2(11) Add the following new subsections after **DCD Subsection 8.2.2.1**.

**8.2.2.2          Grid Reliability and Stability Analysis**

Oncor has performed a transient stability study for the proposed addition of CPNPP Units 3 and 4 generation facility to the ERCOT transmission network in accordance with BTP 8-3. The CPNPP Units 3 and 4 connect to the ERCOT network via four 345 kV transmission tie lines to the plant switching station and four 345 kV outgoing transmission lines, as discussed in **Subsection 8.2.1.1**. The purpose of this study is to determine if the expansion of this facility causes the proposed or existing nearby generators to experience transient instability for selected planning criteria contingencies. This study indicates that neither the proposed nor existing nearby generators experience transient instability for the selected planning criteria contingencies that have been considered.

This study, and its conclusions, is based on preliminary data and is subject to review using final data to be provided prior to the interconnection of the proposed generating facility expansion with the Oncor transmission system.

The pertinent details of the Oncor transient stability study are summarized below:

The study was conducted in accordance with the ERCOT Generation Interconnection or Change Request Procedure using a 2015 summer peak case projected from the 2012 ERCOT summer peak base case. The ERCOT dynamics database associated with the 2010 summer peak base case was modified for compatibility with the 2015 base case.

A series of contingencies consistent with the ERCOT planning criteria were applied to selected locations in the vicinity of CPNPP. The contingencies studied include the loss, as a result of a single event, of the largest generation capacity being supplied to the grid, removal of the largest load from the grid or loss of the most critical transmission line. The assumptions of this study are the following:

- All system elements were assumed to be in service prior to the contingency being simulated.