March 3, 2010

Mr. Donald Woodlan
Manager, Nuclear Regulatory Affairs
Luminant Power
P.O. Box 1002
Glen Rose, TX 76043

SUBJECT: NRC STAFF CLARIFICATION FOR THE ENVIRONMENTAL IMPACT OF THE BLOW-DOWN TREATMENT FACILITY PROPOSED IN THE COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4 COMBINED LICENSE APPLICATION

Dear Mr. Woodlan:

This letter transmits the U.S. Nuclear Regulatory Commission (NRC) response to a request for clarification made by the Luminant Generation Company, LLC (Luminant) during a public meeting held at NRC headquarters in Rockville, Maryland on January 27, 2010. During the public meeting the NRC staff requested that Luminant provide information to supplement responses to the proposed blow-down treatment facility (BDTF) received from Luminant in a letter dated December 18, 2009.

On June 26, 2009, the NRC staff requested additional information (RAI) regarding the proposed BDTF in item GEN-03. Luminant provided numerous responses to the RAI. However, to date, Luminant and the NRC have been unable to bring closure to GEN-03, even though the NRC staff has engaged Luminant in several interactions to try to resolve these issues.

The clarifications of the NRC staff's concerns regarding the BDTF are provided in Enclosure 1. The NRC requests that Luminant provide a response by March 8, 2010.

If you have any questions, please do not hesitate to contact the following Environmental Project Managers for the CPNPP COL: Michael Willingham at (301) 415-3924 or by e-mail to michael.willingham@nrc.gov or Donald Palmrose at (301) 415-3803 or by e-mail to donald.palmrose@nrc.gov.

Sincerely,

/RA/ R Whited for/

Gregory P. Hatchett, Chief
Environmental Projects Branch 1
Division of Site and Environmental Reviews
Office of New Reactors

Docket Nos. 52-034 and 52-035

Enclosure: As stated

cc: See next page

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DATE	02/18/2010	02/18/2010	02/25/2010	02/26/2010	03/02/2010

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Enclosure 1

Comanche Peak Nuclear Power Plant, Units 3 and 4
Combined License Application
GEN-03 Clarification for the Proposed Blow-down Treatment Facility

The original request for additional information (RAI) for GEN-03 is:

> Provide a detailed description of the construction and proposed operation of the evaporation ponds and the "three-month storage" pond and their associated physical and chemical characteristics.
>
> Supporting Information: The Environmental Report briefly describes the construction and operation of new ponds that would to be used in conjunction with the water to be returned from the new cooling towers to Lake Granbury. Additional information is needed on the purpose of these ponds and how they would be operated including the chemical characteristics of the water to be discharged, the quantities of wastes (i.e., dried salts) to be generated, and the proposed disposition of these wastes.

Luminant and the staff have had difficulty in reaching consensus on the level of detail for the staff to develop an independent analysis of the environmental impacts from the BDTF on land use, water quality, waste disposal, and transportation. Therefore, to assist Luminant in refocusing on providing the technical information needed to assess environmental impacts of the BDTF complex, the staff requests the following information:

Land Use Impacts

The staff must independently evaluate the impacts of the building and operation of Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4 over the license period of the proposed project with regard to changes to the existing use of the land where Luminant desires to place the BDTF complex and to the land use nearby and outside of Luminant's property. For example, the BDTF complex will have a system of evaporation ponds, spray nozzles, and salt drift fences. Currently, the staff does not know if there will be a buffer strip of land between these components of the BDTF complex and the site boundary. This buffer information is necessary for the staff to independently evaluate the potential impacts (including existing land use, terrestrial ecology, and visual) to property owners (residential or businesses) directly next to the Luminant site boundary around the BDTF complex. Therefore, provide the following

- A figure showing the layout of the BDTF including the footprint of both BDTF buildings housing the pre-filter/ultra-filter, the reverse osmosis systems, the evaporation and storage ponds, salt drift fences, any buffer strip of land, and the fence line for the site boundary.
- The area of land to be disturbed by building and operating the BDTF complex (i.e., filter and reverse osmosis systems and evaporation and storage ponds).

Water Quality and Non-radioactive Waste Impacts

The main purpose of the BDTF complex is to ensure blowdown circulation water discharged back into Lake Granbury meets State of Texas water quality standards. Luminant has stated that the BDTF complex (e.g., the evaporation pond sizing for treatment capacity and expected operational discharges to Lake Granbury) is adequate to meet the expected State of Texas

discharge limits. Luminant should provide the State of Texas water quality standards, as well as references, and details as to how the BDTF complex will meet those standards so that the staff can assess the impacts of the waste stream generated by the BDTF. Additionally, include in your answer: (1) Luminant's proposed method of waste minimization via volume reduction by water removal in the evaporation ponds, and (2) the water quality of the discharge flow from the BDTF after mixing with the bypass flow.

Finally, the staff must also evaluate the impacts of reasonably foreseeable conditions over the time period of the combined license. The Freese and Nichols study entitled "Lake Granbury Dissolved Minerals Study" dated October 10, 2008, states the anticipated 2060 conditions could be as high as 4000 mg/L TDS. The findings of this study and an explanation of why the 4000mg/l TDS was not used as part of the BDTF analysis should be addressed in your response. In order for the staff to assess the impacts of operating the BDTF throughout the initial combined license period, the staff must also consider projections of the potential Lake Granbury water conditions through the end of the initial licensing period. Accordingly, provide a response to the following:

- The volume and surface area of the evaporation (including the internal cells) and storage ponds accounting for volume losses due to sloped walls, cell dividers, access ramps and other components.
- The basis for the evaporation of waste water discharged, including mister system efficiency and the expected evaporation rates for the evaporation and storage ponds.
- The anticipated flow rates and concentrations of solids/salts throughout the circulating water system shown in Figure 3.6-1 (ML093620032) including combined flow rate from the cooling towers and the ultimate heat sink prior to the piping junction for directing flow bypassing the BDTF, the flow path into the BDTF, the discharge from the BDTF to the evaporation/storage ponds and the discharge back to Lake Granbury as analyzed for Lake Granbury's current TDS and chloride concentrations (i.e., 2500 or 3525 mg/L).

Transportation of Waste Impacts:

Based on the estimated mass loading of the evaporation ponds provided in Luminant's December 18, 2009 response to RAIs, the disposal of potentially almost half a million tons of solids/salt residue per year from the evaporation ponds could have significant transportation impacts. To date, Luminant has not analyzed the transportation impacts associated with the disposal of this waste stream. Traditionally, transportation impacts include not just the impact on the affected transportation infrastructure (volume of traffic, conditions of existing roads and railways, etc.) but also incident-free and accident impacts to members of the public. Therefore, for the staff to be able to conduct an independent assessment of disposal-related transportation impacts, the following should be provided for the transportation of solids/salts wastes from the evaporation ponds:

- Frequency of disposal campaigns,
- Volume and mass of solids/salts (including circ water treatment chemicals) to be removed during a disposal campaign,

- The method of transporting the solids/salts to the disposal sites,
- Number of loads required for the transportation method (trucks or railcars & number of railcars per train), and
- Expected one-way travel distances to the likely disposal sites for the transportation method.