

December 4, 2009

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

FROM: Michael H. Willingham, Project Manager/**RA**/  
Environmental Projects Branch 1  
Division of Site and Environmental Reviews  
Office of New Reactors

SUBJECT: SUMMARY OF THE ENVIRONMENTAL SITE AUDIT RELATED TO THE  
REVIEW OF THE LUMINANT'S COMBINED LICENSE APPLICATION  
FOR COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4

On December 12, 2008, the U.S. Nuclear Regulatory Commission (NRC) issued a notice of intent to prepare an environmental impact statement (EIS) and to conduct scoping for the Comanche Peak Nuclear Power Plant (CPNPP), Units 3 and 4 combined license application (COL) submitted by Luminant Generation Company, LLC. In support of the NRC staff's environmental review of the CPNPP, Units 3 and 4 COL application and development of the EIS, an environmental site audit was held February 24 - 26, 2009 at the CPNPP site in Granbury, Texas.

The purpose of the audit was to review references and documents related to the environmental report submitted as a part of the COL application; review data and conclusions made in the environmental report to ensure that environmental requirements in Title 10 of the *Code of Federal Regulations* Part 51 (10 CFR Part 51) are met and interface with representatives from Federal, State, and local government agencies to obtain related information.

The NRC audit team consisted of 9 subject matter experts from the NRC, 11 from Oak Ridge National Laboratory (ORNL), 3 from Information System Laboratories (ISL), and 2 from Pacific Northwest National Laboratory (PNNL). Each day the meeting included opening remarks, a follow-up of the previous day's events, discipline specific discussions, and a summary of the day's discussions. Additionally, Luminant provided special presentations during the week including: general site characterization, site safety, existing and proposed transmission line maintenance and siting process, water use and availability, and the status of permitting. Luminant also provided a general tour of the CPNPP site and the proposed site for Units 3 and 4, as well as, discipline specific tours. These discipline specific tours included the shoreline along Lake Granbury, Squaw Creek Reservoir, and Squaw Creek; proposed intake and discharge locations; meteorological monitoring station; proposed footprints of Units 3 and 4, and associated structures; proposed transportation routes; and areas to be disturbed by construction related activities.

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Enclosure 1 of this report includes the scope of the audit, a list of participants, a summary of audit activities, a detailed agenda, and observations made during the audit.

Docket Nos. 52-034 and 52-035

Enclosures: As stated

cc w/enclosures: See next page

G. Hatchett

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cc w/enclosures: See next page

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**ADAMS ACCESSION NUMBER: ML092510499**

**\*See previous concurrences**

|        |                  |                  |              |                  |
|--------|------------------|------------------|--------------|------------------|
| OFFICE | PM:NRO:DSER:RAP1 | LA:NRO:DSER:RAP1 | OGCNLOW/chgs | BC:NRO:DSER:RAP1 |
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| DATE   | 09/ 14 /09       | 12/03/2009       | 10/ 30 /09   | 12/ 04/2009      |

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**Comanche Peak Nuclear Power Plant  
Units 3 and 4  
Combined License Application  
Environmental Site Audit  
February 24 – 26, 2009  
Site Audit Summary Report**

**1. Summary of Events**

On December 12, 2008, the U.S. Nuclear Regulatory Commission (NRC) issued a notice of intent to prepare an environmental impact statement (EIS) and to conduct scoping for the Comanche Peak Nuclear Power Plant (CPNPP), Units 3 and 4 Combined License (COL) application submitted by Luminant Generation Company, LLC (Luminant). On February 24 – 26, 2009, the NRC staff conducted an environmental site audit in support of the NRC staff's environmental review of the CPNPP, Units 3 and 4 COL application. The site audit was held at the CPNPP site and vicinity in Glen Rose, Texas in Somervell and Hood Counties. The purpose of the site audit was to: review references and documents related to the environmental report submitted as a part of the COL application; review data and conclusions made in the environmental report; ensure that environmental requirements in Title 10 of the *Code of Federal Regulations*, Part 51 (10 CFR Part 51) are met; and interface with representatives from Federal, State, and local government agencies to obtain related information. The NRC's guidance for implementing provisions of 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," related to nuclear power plants is described in NUREG-1555, "Environmental Standard Review Plan," Revision 1, dated July 2007.

The NRC staff provided a table of Information Needs to Luminant on February 9, 2009 to facilitate the audit. The Information Needs table is publically available through the web-based version of the NRC's Agencywide Documents Access and Management System (ADAMS) under the accession number ML090440071. ADAMS is accessible at <http://www.nrc.gov/reading-rm/adams.html>. (This Audit Summary Report reflects the NRC Staff's review as of April 23, 2009).

**1.1. Site Audit Attendees**

The NRC's audit team consisted of subject matter experts (SMEs) from the NRC, Oakridge National Laboratory (ORNL), Information Systems Laboratory (ISL), and Pacific Northwest National Laboratory (PNNL). A detailed list of attendees for the site audit is provided in the table below.

Nuclear Regulatory Commission (NRC) Audit Team

| Name                | Affiliation                                  | Review Area  |
|---------------------|--|--|
| Barnhurst, Daniel   | Nuclear Regulatory Commission (NRC)          | Hydrology  |
| Cushing, Jack       | NRC  | Senior Advisor                                     |
| Emch, Richard       | NRC  | HP/Public Health/Fuel cycle/Waste                  |
| Fringer, John       | NRC  | Project Manager                                    |
| Mussatti, Daniel    | NRC  | Need for Power//Socioeconomics/Environmental Waste |
| Quinlan, Kevin      | NRC  | Meteorology/Air Quality                            |
| Tiruneh, Nebiyu     | NRC  | Hydrology  |
| Willingham, Michael | NRC  | Ecology - PM                                       |
| Zalcman, Barry      | NRC  | Cultural Resources                                 |
| Dillard, Steve      | Information Systems Laboratory (ISL)         | Ecology  |
| Dover, Robert       | ISL  | Alternatives                                       |
| Goodwin, Matt       | ISL  | Cultural Resources                                 |
| Bjornstad, David    | Oakridge National Laboratory (ORNL)          | Need for Power                                     |
| Eckerman, Keith     | ORNL   | HP/Public Health                                   |
| McCold, Lance       | ORNL   | Deputy Team Lead                                   |
| Quarles, Harry      | ORNL   | Ecology  |
| Saulsbury, Bo       | ORNL   | Socioeconomics/Environmental Justice               |
| Shumpert, Barry     | ORNL   | Ecology  |
| Smith, Brennan      | ORNL   | Hydrology  |
| Williams, Kent      | ORNL   | Fuel cycle/waste                                   |
| Zimmerman, Greg     | ORNL   | Team Lead  |
| *Watson, David      | ORNL   | Hydrology  |
| *Ludwig, Scott      | ORNL   | Hydrology  |
| Bryce, Bob          | Pacific Northwest National Laboratory (PNNL) | Alternatives                                       |
| Cort, Katie         | PNNL   | Land use   |

\*Scott Ludwig and David Watson were not onsite, but they were available by phone for the audit.

Luminant Staff, Support Staff, and Contractors

| <b>Name</b>        | <b>Affiliation</b>                       | <b>Review Area</b>     |
|--------------------|--|------------------------|
| Bird, Bobby        | Luminant                                 | Support                |
| Brabec, John       | Luminant                                 | Transmission           |
| Brackeen, Ron      | Luminant                                 | Meteorology            |
| Bradley, Scott     | Luminant                                 | HP/Public Health       |
| Carver, Ron        | Luminant                                 | Support                |
| Caves, Andy        | Luminant                                 | Fuel cycle/waste       |
| Conly, John        | Luminant                                 | Need for Power         |
| Dalby, Gordon      | Luminant                                 | HP/Public Health       |
| Durrwachter, Henry | Luminant                                 | Need for Power         |
| Edwards, Terry     | Luminant                                 | Fuel cycle/waste       |
| Evans, Todd        | Luminant                                 | Ecology                |
| Lane, Rob          | Luminant                                 | Need for Power         |
| Reible, Bob        | Luminant                                 | Alternatives           |
| Spicer, Gary       | Luminant                                 | Ecology                |
| Syed, Moazam       | Luminant                                 | Meteorology            |
| Turner, Bruce      | Luminant                                 | Hydrology              |
| Volkening, Dave    | Luminant                                 | Support - QA           |
| Weeks, Matt        | Luminant                                 | Meteorology            |
| Woodlan, Don       | Luminant                                 | Support - Licensing    |
| Hamamoto, Hiroshi  | Mitsubishi Heavy Industries (MHI)        | Support - Met          |
| Kawanago, Shinji   | MHI                                      | Support - DCD, COLA    |
| Nishino, Hiromasa  | MHI                                      | Support - Dose         |
| Bernhoft, Sherry   | Mitsubishi Nuclear Energy Systems (MNES) | Support                |
| Boakye, Kennedy    | MNES                                     | Support -Hydrology     |
| Bywater, Russell   | MNES                                     | HP/Public Health       |
| Chitose, Keiko     | MNES                                     | Support                |
| Greene, Jairus     | MNES                                     | Support - Alternatives |
| Hayashi, Kazuya    | MNES                                     | Support - Licensing    |
| Imamura, Takahiro  | MNES                                     | Support - Fuel cycle   |
| Ishida, Mutsumi    | MNES                                     | Support                |
| Johnson, Andrew    | MNES                                     | Transportation         |
| Kambara, Masayuki  | MNES                                     | Support                |

|                    |                  |                       |
|--------------------|------------------|-----------------------|
| Kaneda, Masahiko   | MNES             |                       |
| Kataoka, Shinich   | MNES             | Support - Hydrology   |
| Kawai, Katsunori   | MNES             | Support               |
| Ogasawara, Hikaru  | MNES             | Support - Met         |
| Onozuka, Masanori  | MNES             | Support               |
| Otani, Shinji      | MNES             | Support - HP/Public   |
| Reynolds, Ron      | MNES             | Cultural Resources    |
| Tapia, Joe         | MNES             | Support - Licensing   |
| White, Frostie     | MNES             | Hydrology             |
| Wills, Craig       | MNES             | Fuel cycle/waste      |
| Yamaura, Yoshihisa | MNES             | Ecology - Support     |
| Yeager, Diane      | MNES             | Hydrology             |
| Amundson, Jean     | Luminant         | Support – Admin       |
| Albright, Jon      | Freese & Nichols | Hydrology             |
| Arcaro, Patty      | Enercon          | Support - Admin       |
| Atchison, Bill     | Enercon          | Ecology - Terrestrial |
| Balan, Suraj       | Enercon          | Hydrology             |
| Batterson, Christy | Enercon          | Socioeconomics        |
| Beck, Francine     | Enercon          | Support - Env         |
| Briscoe, James     | Enercon          | Cultural Resources    |
| Burgess, Stacy     | Enercon          | Support - Lead        |
| Byerman, Chris     | Enercon          | Ecology               |
| Carroll, Rebecca   | Enercon          | Ecology               |
| Floyd, Eddie       | Enercon          | Alternatives          |
| Gayley, Melissa    | Enercon          | Ecology - Land Use    |
| Harris, Melinda    | Enercon          | Ecology - Aquatic     |
| Hubbard, Jim       | Enercon          | Alternatives          |
| Kelley, Dennis     | Enercon          | Support - Tech        |
| Logatto, Joe       | Enercon          | Need for Power        |
| Lovvorn, Darren    | Enercon          | Hydrology             |
| Mancinelli, Joe    | Enercon          | Support - Lead        |
| McDowell, April    | Enercon          | HP/Public Health      |
| Morris, JoAnne     | Enercon          | HP/Public Health      |
| Morris, Marvin     | Enercon          | Meteorology           |

|                     |         |                     |
|---------------------|---------|---------------------|
| Schoenewe, Robert   | Enercon | Hydrology           |
| Shivas, Jack        | Enercon | Fuel cycle/waste    |
| Walker, Robert      | Enercon | Cultural Resources  |
| Weltman, Bob        | Enercon | Alternatives        |
| Wheeler, Duke       | Enercon | Supprot – Licensing |
| Baig, Anis          | URS     | Ecology - Aquatic   |
| Bernstein, Robert   | URS     | Hydrology           |
| Kopyscianski, Peter | URS     | Hydrology           |
| Lanham, Ken         | URS     | Hydrology           |
| Liberatore, Lou     | URS     | Hydrology           |
| Tsang, Irving       | URS     | Fuel cycle/waste    |
| Alvarez, Jill       | ONCOR   | Transmission        |
| Beene, Randy        | ONCOR   | Transmission        |
| Herring, Jeff       | ONCOR   | Transmission        |
| Kinard, Rodney      | ONCOR   | Transmission        |
| Lewis, Jacob        | ONCOR   | Transmission        |

#### Federal and State Representatives

| <b>Name</b>             | <b>Affiliation</b>                               | <b>Review Area</b> |
|-------------------------|--|--------------------|
| Forte, Jim              | Brazos River Authority (BRA)                     | Water Use/Quality  |
| McClendon, Mike         | BRA  | Water Use/Quality  |
| Wheelock, David         | BRA  | Water Use/Quality  |
| Brozowski, George       | EPA  | HP/Public Health   |
| Chen, Isaac             | EPA  | Hydrology          |
| Lyssy, Gregory          | EPA  | Fuel cycle/waste   |
| Mueller, Brian          | EPA  | Hydrology          |
| Abbaszadeh, Muhammadali | Texas Commission on Environmental Quality (TCEQ) | HP/Public Health   |
| Godeaux, Jason          | TCEQ   | Water Use/Quality  |
| Reilly, Susannah        | TCEQ   | Water Use/Quality  |
| Hardin, Karen           | Texas Parks and Wildlife Department (TPWD)       | Ecology            |



## 1.2. Site Audit Activities

On Tuesday, February 24, 2009, the site audit team met at the CPE/PPC Building at the CPNPP Site. A detailed agenda of the site audit activities is provided in Section 1.3 of this report. Mike Willingham, NRC's Environmental Project Manager (EPM), opened the meeting with a discussion on the NRC's objectives and expectations, introductions of the NRC's environmental audit team, introductions of Federal and State agencies' representatives, and site audit agenda and resources. Don Woodlan, Luminant's Licensing Support representative, introduced members of Luminant's staff and contractors and supporting representatives from Mitsubishi Heavy Industries (MHI) and Mitsubishi Nuclear Energy Systems (MNES). Luminant staff provided a presentation on site safety and an overview of the CPNPP site, environmental report, and supporting documents. After the morning introductions and presentations, Luminant staff led the NRC audit team and representatives from state and federal agencies on a general site familiarization tour of the existing CPNPP site and proposed location for Units 3 and 4 and support structures. Representatives from the NRC audit team supporting the review of Alternatives, Ecology, Land Use, and Cultural Resources participated in a presentation and discussion on transmission line planning and permitting process in the state of Texas lead by ONCOR. The audit team continued with discipline specific break-out sessions and tours the remainder of the day.

The NRC audit team supporting the socioeconomic and environmental justice reviews met with local officials and community representatives at a "Community Outreach" meeting at the Somervell County Courthouse Annex in Glen Rose, Texas from 3:00pm to 4:00pm. A list of attendees is provided in the table below. The meeting focused on the following: major adverse socioeconomic impacts that resulted from the construction of CPNPP Units 1 & 2; concerns regarding prospective construction of Units 3 & 4 in the areas of traffic, housing, water and sewage treatment, schools, and public finance; concerns regarding possible impacts to minority and low-income populations from the proposed construction and operation of Units 3 & 4; subsistence activities, other practices and customs, or existing health conditions that could make local minority and low-income populations vulnerable to adverse impacts from plant construction and operations. The local officials reported that the impacts from the construction of Units 1 & 2 had been limited to additional traffic on local roads. They did not express any concerns related to the proposed construction of Units 3 & 4. The Outreach Meeting participants did not report any concerns about impacts related to the proposed nuclear power plant on minority or low-income populations or to subsistence activities or vulnerable populations.

The day's activities concluded at 5:00 pm with a debriefing with the Luminant staff. The NRC audit team provided a summary of each breakout session and assessment of their need for further discussion. No audit team members expressed that they had completed their activities.

## Community Outreach Attendees

| Name                 | Organization/Affiliation  |
|----------------------|---|
| Dan Mussatti         | NRC   |
| Bo Saulsbury         | ORNL  |
| David Bjornstad      | ORNL  |
| Judge Walter Maynard | Somervell County Judge  |
| Mike Ford            | County Commissioner, Somervell County                           |
| Susanne Reynolds     | Somervell County Emergency Management                           |
| Pastor Luis Crespo   | Maranatha Lighthouse Church, Somervell County                   |
| Judge Andy Rash      | Hood County Judge   |
| Mike Sympson         | County Commissioner   |
| Toni Bellew          | Director Hood County United Way                                 |
| Norma Wright         | Hood County Food Pantry and other local charity organizations   |
| Betty Gosdin         | Chair of City Planning and Zoning Commission, City of Glen Rose |
| David Southern       | Mayor, City of Granbury   |
| Harold Sandel        | City Manager, City of Granbury                                  |
| Ron Berryman         | Assistant City Manager, City of Granbury                        |
| Lee Daniels          | Chair of City Planning and Zoning Commission, City of Granbury  |

Wednesday morning February 25, 2009, Luminant and the Brazos River Authority (BRA) provided a presentation about water usage and availability to NRC audit team members as well as State and Federal agency representatives reviewing Ecology, Land Use, Hydrology, Water Use, and Water Quality. The presentation and discussion focused on BRA's role in managing water flows on the Brazos River, water rights and water availability, the water plan amendment for the proposed nuclear power plant, and flow modeling in Lake Granbury. The cultural resource subject matter expert for ISL (Matt Goodwin) visited local archives and libraries with Robert Walker and James Briscoe (Enercon). The visit included the Somervell County Historical Society in Glen Rose and the Hood County Library in Granbury. Except for the cultural resources SME, team members not engaged in the above presentation continued their technical discussions in breakout sessions with Luminant and its contractors from the previous day. The day's activities concluded at 5:00pm with a debriefing with Luminant staff. The NRC audit team provided a summary of each breakout session and assessment of their need for further discussion. Technical area discussions were completed in the following areas, and the respective SMEs traveled home on Wednesday evening: Aquatic Ecology (Steve Dillard), Terrestrial Ecology (Harry Quarles), Cultural Resources (Matt Goodwin) and Need for Power/Benefit-Cost (Dave Bjornstad).

On Thursday, February 26, 2009, NRC audit team members continued with their technical discussions. Audit team members in all subject areas had completed their

respective technical discussions with Luminant and its contractors by noon. From 1:00 to 3:00 pm, the NRC staff and contractors provided a brief summary of their activities for the week to John Fringer (NRC Project Manager). Mike Willingham conducted an open-session closeout summary meeting with Luminant. The SME for each technical discipline presented a summary of the discussions in their respective breakout sessions, including any additional issues that arose during the tours. Potential actions to resolve any open issues were identified and discussed. Section 2 of the report provides the scope of discussions in each breakout session along with observations made by the NRC audit team.

At 4:00pm, the NRC audit team met in a closed, internal session following the close-out meeting. Future activities, including the development of potential RAIs, were discussed. The Site Audit was adjourned at 5:00pm.

### 1.3. Site Audit Agenda

#### ***Tuesday, February 24, 2009***

|                |  |
|----------------|--|
| 07:45          | Arrive at Comanche Peak Power Plant site and sign in   |
| 08:00          | Site Audit entrance briefing, introductions and overview, safety briefing                              |
| 08:30          | Site characterization and project overview briefing  |
| 09:00          | General site tour  |
| 13:00 to 17:00 | Breakout discussions   |
| 13:00 to 15:00 | Specialized Tours and Discussions  |
| 15:00 to 17:00 | Community Outreach Meeting in Glen Rose (Socioeconomics and Environmental Justice)                     |
| 5:00           | Daily summary meeting with team and Applicant staff to discuss document requests and information needs |
| 6:00           | Adjourn  |

#### ***Wednesday, February 25, 2009***

|                |  |
|----------------|--|
| 07:45          | Arrive at Comanche Peak Power Plant site and sign in   |
| 08:00          | Entrance meeting and overview  |
| 09:00          | Special presentation to selected participants on water use and availability by Luminant and Brazos River Authority |
| 09:00 to 12:00 | Breakout Discussions   |
| 13:00 to 17:00 | Breakout Discussions   |

- 13:00 Conference call with Luminant and ORNL Transportation subject matter expert (SME)
- 17:00 Daily summary meeting with team and Applicant staff to discuss document requests and information needs
- 18:00 Adjourn

**Thursday, February 26, 2009**

- 07:45 Arrive at Comanche Peak Power Plant site and sign in
- 08:00 Entrance meeting and overview
- 09:00 to 12:00 Breakout discussions
- 10:00 Conference call with Luminant and NRC-ORNL groundwater team members regarding hydrology and geohydrology
- 13:00 to 15:00 NRC-ORNL-ISL/AECOM-PNNL team develops consolidated list of “findings” from discipline-specific technical breakout discussions
- 15:00 Team closeout meeting (everyone); Review the Information Needs Table by topical area; Review material still needed and identify potential RAIs
- 16:00 Internal team meeting (NRC-ORNL-ISL/AECOM-PNNL) to identify and discuss follow-up actions
- 17:00 Adjourn

**2. Scope and Observations**

The NRC audit team provided Luminant a list of information needs on February, 9<sup>th</sup> 2009, (ML090440071). The list of information needs was used as guidance to facilitate the scope of the site audit.

**2.1. General**

*2.1.1. Scope*

The NRC audit team reviewed supporting documents and data referred to in Luminant’s Environmental Report regarding the proposed project description, site location and major features, environmental report development, and the applicant and owners.

*2.1.2. Observations*

Section 1.0 of NUREG-1555, “Environmental Standard Review Plan” (ESRP), states that the NRC should describe the proposed project and the status of reviews, approvals, and consultations. The staff observed that the ER does not provide a clear description of the applicant’s participation in the U.S. Environmental Protection Agency (EPA) or Texas Commission on Environmental Quality’s (TCEQ) performance tracking program and environmental management systems (EMS). The staff observed that the ER does not provide a description of impacts associated with preconstruction and “construction” as identified in 10 CFR Part 51.4. Also, the ER does not provide a description of the construction and operation of the proposed three-month storage pond. The NRC audit

team informed the applicant that the staff may formulate requests for additional information to clarify: CPNPP's participation in the EPA or TCEQ performance tracking program and environmental management systems (EMS); environmental impacts associated with "construction" activities and preconstruction; and impacts associated with the construction and operation of proposed evaporation ponds and three-month storage ponds.

## 2.2. Land Use

### 2.2.1. *Scope*

The NRC audit team reviewed the following information at the site audit regarding land use characterization and impacts in the applicant's ER and supporting references: surface-water and groundwater uses; terrestrial ecology; community characteristics; historic and archeological sites and natural landmarks; proposed plant and related offsite structures; construction impact assessments for land use, historic and archeological sites, and socioeconomics; construction impacts of water use; operational impacts assessments for land use, historic and archeological sites, socioeconomics, and radiological impacts of normal operation.

The NRC audit team was provided a useful website regarding land uses permitted within transmission lines right-of-ways, and an example of environmental assessments performed by ONCOR, the transmission line provider for the CPNPP site. The website, <http://interchange.puc.state.tx.us/>, is publicly available.

### 2.2.2. *Observations*

The community of Pecan Plantation was omitted from Figure 1.1-2 in the ER, which graphically describes the vicinity of the CPNPP site. Luminant staff clarified that the community was not incorporated as so indicated in ER Section 2.2.1.2.

Figure 1.1-5 of the ER indicated that the DeCordova Transmission Line was an existing structure. Luminant staff clarified that the DeCordova transmission line was not an existing structure and would require construction of new towers on new or expanded transmission line right-of-ways as stated in Section 2.2.2 of the ER.

The staff identified the following areas during the audit that may require additional action:

- A map and table detailing land use in the existing and proposed pipelines routes was not available in the ER or reference documents.
- The ER indicates that Luminant does not own all the mineral rights on the CPNPP site. However, the ER indicated that there are restrictions in place to prevent certain forms of subsurface exploration.
- The ER does not include a map detailing the location of major public and trust land areas.
- Figure 2.2-2 in the ER indicates that Lake Proctor is part of the U.S. Army Corps of Engineers federal land holding within 50 miles of the CPNPP site. The ER did not include text in Section 2.2.3 describing Lake Proctor as a federal land holding.

- Figure 4.1-1 in the ER shows that a portion of the proposed concrete batch plant is outside of the CPNPP site. However, there is not any discussion in Section 4.1.2 of the ER regarding an off-site concrete batch plant.
- The NRC audit team identified land use digital files and data layers that may be used for a reference in the EIS, but have not been submitted on the docket.
- The NRC audit team may request documents containing Corona-radio interference-noise for reference in the EIS. Specifically, the NRC audit team may request Transmission Engineering Standards and Transmission Line Design & Reference Manual 3.0-Insulation, May 14, 2007, pp. 47-48. The NRC audit team may request additional data and information regarding land use along alternative site transmission line corridors and a description of the blowdown treatment facility and its processes.

### **Hydrology, Water Use and Water Quality**

#### *2.2.3. Scope*

The NRC audit team reviewed documents and data supporting the ER's site-specific and regional characteristics of the surface-water bodies and groundwater aquifers that could affect the plant-water supply and effluent disposal or that could be affected by plant construction or operation of the proposed project, including transmission corridors and offsite facilities. The information reviewed addressed impacts to water bodies, aquifers, aquatic ecosystems, and social, economic structures of the area, and other hydrologic related impacts.

#### *2.2.4. Observations*

Luminant made the following documents and data available to the NRC audit team for review during the site audit:

- TCEQ Report of Surface Water for the Year Ending December 31, 2006;
- Basin Summary Report Raw data in Clean Rivers Program;
- Boating Capacity Study Lake Granbury, Texas Final Report Submitted to Brazos River Authority April 2006;
- Freese and Nichols report on TDS and Chloride;
- Comanche Peak Units 3 & 4 Conceptual Design of Grading and Drainage of COLA Building Structures, City of Glen Rose, Somervell County, Texas, Rev A. Project Number 28831, URS Washington Division;
- Memorandum To: Bruce Turner, From: Jon S. Albright, Subject: Scenario 3c of Joint BRA-TXU Modeling, Date September 28, 2008;
- CORMIX input files;
- Bathymetry and Volume Storage of a Portion of Lake Granbury, Hood County Texas. Prepared by Stephen K Boss, July 11, 2007;
- TXUT-001-ER5.2-Calc-007;

- Potential Effects of Comanche Peak Cooling Tower Operation on Total Dissolved Solids in Lake Granbury; By George H. Ward, submitted to: Luminant Power; January 31, 2008;
- Calculation Package CWS-13-05-230-002; Project Number 28831;
- Conceptual Design of Makeup Water Screening System to Lake Granbury Intake Structure, By Allan Wern May 5, 2008;
- Waste minimization plan for Units 1 and 2;
- Optimization study for secondary side cooling water system Circulating Water System, CWS-15-05-100-001; and
- Oncor Electric Delivery Co. LLC, Electric & Transmission Line Projects Disturbing 5 or More Acres, Storm Water Pollution Prevention Plan, Example Only EHST Project Number 00-0000 March 2009.

The NRC audit team informed the applicant that they may request the above documents for reference in the EIS.

The NRC audit team informed the applicant that may formulate a request additional information and data regarding the following hydrology related issues:

- Site specific detailed profiles of geology and aquifer units beneath the CPNPP site;
- Hydraulic conductivity values for slug tests, packer tests, pumping tests, and other hydraulic testing conducted;
- Hydraulic conductivity value determined from the 72-hour pumping test;
- Post-construction grading plans, the planned removal of regolith/undifferentiated fill, planned placement of engineered fill and the impact this will have on infiltration and surface runoff characteristics, and groundwater gradients and flow paths;
- Maps showing the start and stop location for each of the four groundwater flow path and travel time scenarios;
- Porosity, effective porosity, secondary porosity, preferred pathways considered in the groundwater travel time calculations, and range of effective porosities and preferred pathways measured or estimated in the regolith/undifferentiated fill and underlying bedrock;
- Hydrographs showing groundwater levels in wells installed at the site;
- Site-specific soils and hydrogeologic data relevant to the proposed 384-acre onsite storage and evaporation ponds and blowdown treatment facility;
- Construction and design information for the proposed onsite storage and evaporation ponds, blowdown treatment facility (BDTF), and how these facilities may impact groundwater and surface water and the monitoring that will be conducted to determine the impacts;
- Toxicity of salts in the proposed evaporation ponds;

- Pollutant discharges to Lake Granbury and to the Brazos River including the location, effluent flow rate, and allowable and average contaminant concentrations and temperature in each discharge;
- Design details and calculations for the intake structure flow patterns, including screen opening size(s), through screen velocities under differing reservoir conditions, and assumptions of how the reservoir ambient flow field will affect the intake structure performance and hydraulics;
- Design details for the proposed submerged multiport diffuser for blowdown effluent to Lake Granbury, including horizontal and vertical alignment and location relative to significant bathymetric features of the reservoir;
- Details of how storm water will be routed, collected, treated and disposed for the Unit 3 and 4 facilities;
- Groundwater dewatering that will be conducted during construction activities;
- Water availability, physical, and water quality impacts on Brazos River system of Brazos River system water management changes that would be induced by the implementation water rights adequate for operation of Units 3 and 4, including water quality impacts to Possum Kingdom Lake, Lake Granbury, and the Brazos River downstream of Lake Granbury.
- Baseline water quality conditions for the Brazos River downstream of Lake Granbury and the impact that Units 3 and 4 thermal and chemical discharges to Lake Granbury and Squaw Creek Reservoir would have on water quality downstream of Lake Granbury.
- The method used to determine the level of impact to groundwater and surface water was determined;
- Ambient flow field and bathymetry that would affect or be affected by the proposed Units 3 and 4 intake and outfall structures, accounting for the site-specific bathymetry of lower Lake Granbury spatial patterns of velocity and temperature are dependent on reservoir elevation, low-level outlet (sluice gate) flow, spillway flow, degree of thermal stratification, and the overall magnitude of release from DeCordova Bend Dam;
- Flow field and water quality parameter distributions and related impacts in the portion of Lake Granbury extending from approximately one mile upstream of the proposed Units 3 and 4 water intake structure to DeCordova Bend Dam that will result from full-power operation of four units, including the conditions that would exist during periods of minimum release from DeCordova Bend Dam and minimum inflow to Lake Granbury;
- Construction, preoperational, and operational radiological monitoring proposed for groundwater;
- Source term used to assess accidental releases to surface water and groundwater and the transport pathways that are likely to occur after the site has been altered during construction activities; and



- Routing the mixed effluent from the treated (BDTF) and untreated (BDTF bypass) blowdown water at ambient or below-ambient chloride and TDS concentrations and temperature to the cooling tower basins for reuse.

## 2.3. Aquatic Ecology

### 2.3.1. *Scope*

The NRC audit team reviewed documents and data supporting the ER's conclusions regarding the spatial and temporal distribution, abundance, and other structural and functional attributes of biotic assemblages on which the proposed action could have an impact. The review also included references to "important" or irreplaceable aquatic natural resources and the location of sanctuaries and preserves that might be impacted by the proposed actions.

### 2.3.2. *Observations*

Luminant made the following documents available to the NRC audit team for review at the site audit:

- Fish and Wildlife Letter dated December 4, 2009;
- Regional Water Plan;
- Vegetation management guidelines;
- Storm Water Pollution Prevention Plan for Units 1 and 2;
- ONCOR Electric Delivery Co., Overhead Electric Environmental Guidelines for Small-Scale Construction/Maintenance Projects, Rev. 3, Feb. 2008, Cover page & Guideline 1-10;
- ONCOR Electric Delivery Co., Overhead Electric Environmental Guidelines for Vegetative Maintenance on Right-of-Way and Company Facilities, Rev. 3, Feb. 2008, Cover page & Guideline 1-9;
- ONCOR Electric Delivery Co. LLC, Electric & Transmission Line Projects Disturbing 5 or More Acres, Storm Water Pollution Prevention Plan, Example Only EHST Project Number 00-0000 March 2009;
- Bio West Reports regarding aquatic ecology monitoring in Lake Granbury and Squaw Creek Reservoir;
- Fishery Survey Reports for Squaw Creek Reservoir and Lake Granbury;
- Reports on 316(b) demonstration for CPNPP Units 1 and 2; and
- Comanche Peak Water Quality data calculation EXCEL spreadsheet with cover sheet.

The NRC audit team informed the applicant that they formulate request the above documents for reference in the EIS.

Luminant provided several different scenarios regarding possible dredging activities associated with the construction of the discharge structures in Lake Granbury. The NRC audit team informed the applicant that they formulate request additional information to

clarify the impacts of dredging and construction of the discharge facility on Lake Granbury.

## 2.4. Terrestrial Ecology

### 2.4.1. *Scope*

The NRC audit team reviewed documents and data supporting the ER's identification and description of species composition, spatial and temporal distribution, abundance, and other structural and functional attributes of biotic assemblages that could be impacted by the proposed action. The review also included supporting information that identified any "important" terrestrial natural resources and the location of wildlife sanctuaries and natural areas that might be impacted by the proposed action.

### 2.4.2. *Observations*

Luminant made the following documents available to the NRC audit team for review during the site audit:

- (FWS 2006) Response letter from the U.S. Department of the Interior Fish and Wildlife Service to ENERCON recommending that potential impact to three species be considered during project planning. December 4, 2006;
- (PBS&J 2007) Golden-Cheeked Warbler Bird Survey Report (for) TXU Power, Comanche Peak Power Plant, Somervell County, Texas. Prepared for TXU Power, 1601 Bryan Street, Dallas, Texas 75201 by PBS&J, 18383 Preston Road, Suite 110, Dallas, Texas 75252;
- (PBS&J 2008) Golden-Cheeked Warbler Bird Survey Report (for) Luminant Power, Comanche Peak Power Plant, Somervell County, Texas. Prepared for TXU Power, 1601 Bryan Street, Dallas, Texas 75201 by PBS&J, 18383 Preston Road, Suite 110, Dallas, Texas 75252; and
- (TUGC 1974) Comanche Peaks Steam Electric Station (CPSES) Environmental Report Volume 1. Texas Utilities Generating Company (TUGC).
- Vegetation Management Guidelines, June 2004 (internal, Oncor elect. delivery); Transmission Line Engineering Standards – Construction, 720-003 Construction Specification for Transmission Line Right-of-Way Clearing, 8/7/07, pp. 1-9;
- Oncor Electric Delivery Co., Overhead Electric Environmental Guidelines for Small-Scale Construction/Maintenance Projects, Rev. 3, Feb. 2008, Cover page & Guideline 1-10;
- Oncor Electric Delivery Co., Overhead Electric Environmental Guidelines for Vegetative Maintenance on Right-of-Way and Company Facilities, Rev. 3, Feb. 2008, Cover page & Guideline 1-9;
- "Plume Characteristics of Proposed New Cooling Towers at Comanche Peak", by Enercon for Luminant, TXUT-001-ER-5.3-005.
- (TUGC 1975) Comanche Peaks Steam Electric Station (CPSES) Environmental Monitoring Program: Construction Phase Annual Report. Volume 1-1975. Texas Utilities Generating Company (TUGC).

- Oncor Electric Delivery Co. LLC, Electric & Transmission Line Projects Disturbing 5 or More Acres, Storm Water Pollution Prevention Plan, Example Only EHST Project Number 00-0000 March 2009; and
- “Wetland & Other Potentially Jurisdictional Waterbody Identification & Delineation Study”, by Enercon for Luminant, TXUT-001-PR-015.

The NRC audit team informed the applicant that they may request the above documents for reference in the EIS.

## 2.5. Socioeconomics and Environmental Justice

### *2.5.1. Scope*

The NRC audit team reviewed documents and data supporting the applicant’s conclusions in the ER regarding:

- Current population distributions;
- Population distributions predicted at the time of plant startup, and for 10-year increments reaching 40 years from the latest decennial census
- Permanent and transient populations;
- Magnitude and nature of the expected impacts of construction, maintenance, or operation of the proposed project and those site-specific community characteristics that can be expected to be affected these impacts;
- Methods that are used to identify and locate minority and low-income populations;
- The location and significance of any populations that are particularly sensitive; and
- Any additional information pertaining to minority and low income populations that could be impacted by construction, maintenance, or operation of the proposed project.

### *2.5.2. Observations*

The NRC audit team informed the applicant that they may request additional information regarding:

- The number and timing of workers needed for construction, operations, and outages;
- The population and distance from CPNPP of small towns and unincorporated communities in the site vicinity;
- Local employment and projected plant-related expenditures;
- The method by which the assessed value of Units 3 and 4 will be determined;
- The estimated amount of ad valorem taxes to be paid annually on Units 3 and 4.
- The estimated amount of additional sales and use tax to be paid to each relevant jurisdiction in Somervell and Hood Counties;
- Local traffic conditions and level of service on road segments that may be impacted by the construction and operation of the proposed new units;

- Hotel occupancy rate and number of rooms available for each hotel that accepts long-term occupants in Somervell and Hood County, Texas;
- Long term availability and average vacancy rate of recreational vehicle parks in Hood County and Somervell County, as well as the communities of Stephenville, Cleburne, Joshua, and Alvarado, Texas;
- Location and characteristics of possible new recreational vehicle parks mentioned in Section 4.1.1.2 of the ER;
- Location and characteristics of housing developments mentioned in Section 4.1.1.2 of the ER;
- Operation status of the Lake Granbury Surface Water and Treatment System;
- The water treatment capacity and average daily consumption for the Cities of Granbury and Tolar;
- Current peak daily consumption for water treatment facilities listed in Table 2.5-20 of the ER;
- Municipalities served by each water treatment system shown in Table 2.5-20 of the ER;
- Wastewater processing facilities;
- Average and peak loads for local hospitals in Section 2.5.2.7.2 of the ER;
- Ratio of police officers and firefighters to citizens presented in Section 4.4.2.3 of the ER and Texas State standards;
- Existing plans for expansion of police and fire services in the CPNPP vicinity;
- Current staffing and expected staffing needs of Glen Rose and Granbury Independent School Districts;
- Local minority and low-income populations;
- Operation impacts on recreational activities associated with water withdrawals from Lake Granbury;
- Preconstruction activities that may have an impact on socioeconomics or environmental justice;
- The subsistence activities of minority and low-income populations;
- The aesthetic impacts of new transmission towers;
- Descriptive information and projected socioeconomic impacts for the alternative sites; and
- Descriptive information and projected environmental justice impacts for the alternative sites.

## 2.6. Cultural Resources

### 2.6.1. *Scope*

The NRC audit team reviewed documents and data provided by Luminant during the site audit that supported the ER's identification and description of historic, archaeological, and traditional cultural resources; the location and significance of any properties that are listed in or eligible for inclusion in the National Register of Historic Places (National Register) as a historic place; and additional information pertaining to the identification and description of historic properties that could be impacted by construction or operation of the proposed project.

### 2.6.2. *Observations*

The NRC audit team discussions with Luminant staff identified the need for reconnaissance level information regarding alternative sites. The NRC audit team informed the applicant that they may request the additional information to clarify historic and cultural resources that may occur at the alternative sites.

Luminant provided documents regarding cultural chronology for the area surrounding the proposed plant, and historical maps, records, and aerial photographs used to develop a historic context. The NRC audit team identified that they may request additional information regarding background information and context of Section 2.5.3, Historic Properties, in Luminant's ER.

Luminant provided access to a concurrence letter from the Texas Historical Commission during the site audit as a supporting document to address cultural sensitivity of the project area. The NRC staff identified that they may request that the letter to clarify cultural sensitivities and prehistoric and historic occupation in the CPNPP site vicinity be provided on the docket.

During the site audit, Luminant provided Texas regulations and guidelines relating to inadvertent discovery of historical and cultural resources. The NRC audit team discovered that Texas law does not have specific language in this area and Federal regulations must be referenced.

The NRC audit team informed the applicant that they may request the following data and documents for reference in the EIS:

- Generic Research Design for Archaeological Surveys of Oncor Electric Delivery Electric Transmission Line Projects in Texas, Doc. # 070050, Feb. 2008, prepared for ONCOR by PBS&J, Dallas, TX;
- Archaeological Survey Report on the Luminant Waterline Extension Project, CPNPP, Hood & Somervell Counties, TX. 2006. Briscoe/Walker;
- Concurrence Letter from SHPO/THC on construction of Units 3 & 4;
- Enercon Cultural Resources Literature Review. Briscoe/Walker; and
- Management Letter Report on the Stone Wall at Comanche Peak. Enercon-Briscoe, 2007.

## 2.7. Meteorology and Air Quality

### *2.7.1. Scope*

The NRC audit team reviewed documents and data provided by Luminant during the site audit that supported the ER's identification and description of the regional climatological characteristics; meteorological characteristics of the site and vicinity; regional atmospheric transport and diffusion characteristics; local atmospheric transport and diffusion characteristics; and impacts on the atmospheric environment.

### *2.7.2. Observations*

Luminant made the following documents available to the NRC audit team for review during the site audit:

- Procedures used to identify and communicate dust control needs for review;
- Environmental Non-Radiological Air Permit Reporting Procedure No. ENV-402 for review; and
- Air permit and renewal application for review.

The NRC audit team identified inconsistencies in text and data represented in Section 2.7.1.2.4 and Table 2.7-11 of the ER. The audit team may request additional information regarding thunderstorm occurrences in the CPNPP site and vicinity.

The NRC audit team identified inconsistencies in text and data represented in Sections 2.7.2.1.4, 2.7.2.1.5, and 2.7.2.1.8, and Tables 2.7-86, 2-7.96, and 2.7-99 of the ER. The audit team may request additional information regarding airports names and locations.

Luminant provided information regarding transportation emissions during construction and operation of the proposed new units at the CPNPP site. The NRC audit team may request additional information regarding vehicle emissions during construction and operation of the proposed new units.

The NRC audit team informed the applicant that they may request additional information regarding processes to be used to develop and communicate air permit compliance monitoring requirements during construction.

During the site audit Luminant provided SACTI, PAVAN, and XOQDOQ input/output files and calculation packages for the NRC audit team to review. The NRC audit team informed the applicant that they may request the data files and calculation packages for further review.

The NRC audit team discovered a discrepancy between information noted in Table 2.7-34 of the Unit 1 and 2 Final Safety Analysis Report (FSAR) and Section 2.7.2.1.7 of the Unit 3 and 4 ER. The NRC audit team informed the applicant that they may request additional information regarding Section 2.7.2.1.7 of the ER.

During the site audit Luminant provided information regarding the location of, and the short-term diffusion estimates for, the control room. The NRC audit team informed the applicant that they may request additional information regarding Section 2.7.3.1 of the ER.

The NRC audit team noted some discrepancies regarding long term meteorological calculations represented in Sections 2.7.1.1, 2.7.4.2, 2.7.3, and 6.4 of the ER. The NRC

audit team informed the applicant that they may request additional information regarding the data and calculations performed in these sections.

The NRC audit team noted that Luminant separated the long-term atmospheric dispersion and deposition estimates for the evaporation pond in the ER and FSAR. The audit team informed the applicant that they may request additional information regarding Section 2.7.4 of the ER and evaporation pond calculation results.

The 2005 meteorological data was not presented in the Reg. Guide 1.23 format. The NRC audit team informed the applicant that they may request additional information regarding the format used to present the data.

The NRC audit team informed the applicant that they may request moisture data collected onsite during 2008, and the corresponding data from Mineral Wells and DFW used to determine if airport data were representative.

The NRC audit team informed the applicant that they may request additional information regarding Table 1.2-1 in the ER and TCEQ Air Permit requirements.

## 2.8. Health Physics and Human Health

### 2.8.1. *Scope*

The NRC audit team reviewed documents and data regarding the expected quantity of radioactive materials released annually in liquid and gaseous effluents (source terms) resulting from normal operation; and the capability of the proposed radioactive waste management systems to control and maintain such releases of radioactive materials in effluents to “as low as reasonably achievable” (ALARA) levels in accordance with the requirement of 10 CFR 50.34a.

### 2.8.2. *Observations*

The NRC audit team identified that they may request additional information regarding the CPNPP site boundaries.

During the site audit Luminant provided calculations and information regarding population dose from ingestion and the correlation between actual food production and assumed food production. The audit team informed the applicant that they may request additional information be provided in order to perform analysis of the calculations.

Luminant provided calculations regarding top contributors to dose for all dose pathways during the site audit. The audit team informed the applicant that they may request additional information in order to perform analysis of the calculations used.

Luminant provided information and calculations utilized in the impoundment model, including measurements based on continuous operation of Units 1 and 2 during the site audit. The audit team informed the applicant that they may request additional information in order to perform analysis of the calculations used.

The NRC audit team noted some discrepancies in the historical context of tritium concentrations in the liquid waste stream and evaporation required prior to release. The audit team informed the applicant that they may request additional information regarding historical release of tritium and Table 5.4-7 in the ER.

The NRC audit team informed the applicant that they may request additional information to clarify dose calculations used to determine tritium releases from gaseous effluents, liquid effluents, and evaporation from the pond.

The NRC audit team informed the applicant that they may request the “Comanche Peak Steam Electric Station Off-Site Dose Calculation Manual Units 1 and 2”, and “Comanche Peak Steam Electric Station Annual Radiological Environmental Operating Report” for reference in the EIS.

The NRC audit team informed the applicant that they may request the SACTI Code used in determination of concentrations of chemicals used to maintain the cooling towers found in the salt drift.

## 2.9. Fuel Cycle, Radiological Waste, and Decommissioning

### *2.9.1. Scope*

NRC audit team reviewed documents and data supporting Luminant’s conclusions on the environmental effects of the uranium fuel cycle in the ER in regards to 10 CFR 51.51(a), “Uranium fuel cycle environmental data - Table S-3.”

### *2.9.2. Observations*

Luminant provided a copy of the US Advanced Pressurized Water Reactor Design Control Document for review during the audit. The NRC audit team identified that they may request additional information to clarify calculated environmental impacts used in the scaled Table S-3 presented in the ER.

## 2.10. Transportation

### *2.10.1. Scope*

The NRC audit team reviewed documents and data supporting Luminant’s conclusions on the environmental impacts of the proposed means of transporting radioactive materials. The scope of the review included those design and operational parameters specified in 10 CFR 51.52(a).

### *2.10.2. Observations*

The NRC audit team informed the applicant that they may request additional information regarding the characterizations made in Section 3.8.1.11 and Table 3.8-1 in the ER.

The NRC audit team informed the applicant that they may request calculation packages and input and output files to analyze the conclusions made regarding the ER’s transportation analysis.

The NRC audit team informed the applicant that they may request additional information regarding the number of shipments characterized in Section 3.8.1.11 of the ER and its applicability to Table S-4.

The NRC audit team informed the applicant that they may request heat load calculations made in ORGEN calculation package.



## 2.11. Need for Power and Benefit Cost

### 2.11.1. *Scope*

The NRC audit team reviewed documents and data that supported the ER's description, assessment, and conclusions of:

- The service area, the types of customers and major electrical load centers to be served by the proposed project, and system factors that are unique to the power system;
- Historic and projected electricity consumption and peak-load demands in the relevant service area or market; economic and demographic trends, conservation, substitution, and price and rate structure;
- Present and planned generating capability and the present and planned purchases and sales of power and energy;
- Type and function of the region's plants, the nature of purchases and sales of power and energy, and any proposed additions, retirements, redesignations, deratings, or upratings of the relevant region's plants; and
- Baseload capacity with baseload demand, a reserve margin assessment, projected cost of power, a comparison of total capacity in relation to peak-load demand, a schedule evaluation, and conclusion regarding the need for the electrical-production capability of the proposed facility.

### 2.11.2. *Observations*

Extensive discussions were conducted based on the items contained in the Information Needs Table; however, the responses to many of these items dealt with the Applicant's use of Electric Reliability Council of Texas (ERCOT) data for which the Applicant could provide no additional information during the audit. The NRC staff agreed that a meeting with ERCOT was needed to clarify technical issues in forecasting methodology and related topics.

Section 8.0 of the ESRP states that the NRC staff should describe the power system, power demand, power supply, and assessment of need for power. During the site audit, the NRC audit team noted that updated data was available from ERCOT regarding need for power. The audit team informed the applicant that they may request additional information from Luminant regarding the impacts associated with the updated data on the ER's discussion on need for power.

It was noted that the need for power section in the ER needed clarification regarding the objective of the purpose of the proposed nuclear power plants. The NRC audit team may ask for additional information and data on the principal objectives of the proposed nuclear power plant in relation to the specific power needs in the region.

Section 8.3 states that the NRC should provide a description of the supply of capacity, capacity due to be retired over the next decade, capacity retirement rate represented, efficiency or lower costs due to the proposed plants, and possible interconnection studies. The applicant's ER did not contain information noted in ERCOT's recent 2008 update and interconnection studies for 2007. The NRC audit team informed the applicant that they may request additional information regarding these issues. Also, additional clarification may be need on the description of power supply, existing capacity

by types, the various plants that could be retired over the relevant period, and the plants that are now planned to be added.

Section 8.4 states that the NRC should provide a description that includes an assessment of the timing of the additional capacity. The NRC audit team informed the applicant that they may request additional information to clarify the plants impacts on the regions need for power. Also, additional clarification may be needed in reference to Table 8.4-1 (ERCOT Demand, Supply and Reserve Margin) and Figures 8.3-7 (ERCOT Generation Capacity and Demand Projections) and 8.3-8 (Possible ERCOT Generation Capacity Needed) regarding ERCOT demand, supply, and reserve margin and its relationship with alternative baseload capacity in Section 9 of the ER.

## 2.12. Alternatives

### 2.12.1. *Scope*

The NRC audit team reviewed documents and data related to:

- Forecast energy consequences if the project is not completed;
- Power purchases from other utilities or power generators and reactivation or extended service life of plants within the power system in combinations that should provide a supply alternative to the proposed project;
- The potential for energy conservation on demand management measures that would be equivalent to the output of the proposed project;
- Consideration of national policy, by site- and region-specific factors, and by the extent to which the energy sources may be considered as commercially exploitable; and
- Alternative energy sources and systems that are identified as available to the applicant and potentially competitive with the proposed project.

The audit team followed up on issues identified during the Alternative Site Visit on February 3-6, 2009. A trip report of the alternative site visit is available on the Agencywide Documents Access and Management System (ADAMS), "Trip Report - Ecology Site Audit and Alternative Sites Visit related to the Review of Luminant's Combined License Application for Comanche Peak Nuclear Power Plant, Units 3 and 4" (ML091410721). As part of that follow up the audit team reviewed documents and data related to:

- Air quality at alternate sites;
- Environmental impacts of new transmission lines for the alternate sites;
- Historic and cultural resources at alternate sites;
- Screening criteria used in Appendix B of Luminant Power, NuBuild Project, Nuclear Power Plant Siting Report, February 9, 2009, enclosed in Luminant's letter dated February 13, 2009 (ML090490419), and
- Aerial photographs of the alternative sites demonstrating land use in the vicinity.

### 2.12.2. *Observations*

The primary issues regarding the Alternatives area included the lack of a clearly stated purpose and need for the proposed action, and clarification of the quantitative site

selection process. An additional document (BRA Report) clarifying the rationale for elimination of the Allen's Creek site from detailed analysis was provided by Luminant and was reviewed by the NRC staff on site. The NRC staff informed the applicant that they may request additional information from the BRA report regarding Allen Creek reservoir development.

The NRC audit team informed the applicant that they may request additional information regarding "Economic Benefits of a Coal-Fired Power Plant Compared to Natural Gas" by Peabody Coal, a document provided by Luminant during the site audit.

Luminant provided revised text addressing nuclear energy levelized costs and costs associated with coal and natural gas during the site audit. The NRC audit team informed the applicant that they may request additional information regarding the revised text.

Luminant provided revised text addressing the proposed projects purpose and need during the site audit. The NRC audit team informed the applicant that they may request additional information regarding the purpose and need for clarification.

Luminant provided digital aerial photographs of the alternative sites and their vicinity. The NRC audit team informed the applicant that they may request additional information regarding the digital photographs of the Pineland site to clarify land use activities in the vicinity.

Section 9.2.3 of the ESRP states that the NRC should describe the alternative energy sources and systems that were considered and the results of the staff's analysis of these alternatives, basis for the analysis, and conclusions and recommendations. The NRC audit team observed that additional information regarding wind availability factors may be needed for the staff to form a basis for conclusions regarding alternative energy systems. The NRC audit team informed the applicant that they may request additional clarification and references regarding the availability of wind energy in the region.

### **3. Exit Meeting Summary**

At the conclusion of the audit, the NRC audit team and Luminant discussed the NRC Staff's observations and unresolved issues. The NRC Staff noted that unresolved issues may require future action, including the staff's formulation of requests for additional information. Materials made available to the NRC team members during the site audit were retained by Luminant.