

## PMComanchePekNPEm Resource

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**Cc:** carl.corbin@luminant.com  
**Subject:** Responses to Last 16 Questions in the ER RAI  
**Attachments:** TXNB-09029 Final ER RAI responses.pdf

Luminant has submitted to the NRC the attached responses to the last 16 questions contained in the June 26, 2009 ER RAI. The Document Control Desk received a hard copy of all enclosures, both proprietary and non-proprietary. Stephen Monarque and Michael Williams each received a disk of proprietary enclosures and a disk of non-proprietary enclosures. If there are any questions regarding the submittal, please contact me or contact Don Woodlan (254-897-6887, [Donald.Woodlan@luminant.com](mailto:Donald.Woodlan@luminant.com)).

Thanks,

John Conly  
COLA Project Manager NuBuild  
Luminant Power  
(254) 897-5256

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**Subject:** Responses to Last 16 Questions in the ER RAI  
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Ref. # 10 CFR 52

August 10, 2009

U. S. Nuclear Regulatory Commission  
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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  
FINAL PARTIAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION  
REGARDING THE ENVIRONMENTAL REVIEW OF THE COMBINED LICENSE  
APPLICATION OF COMANCHE PEAK UNITS 3 AND 4

**REFERENCE:** Letter, M. Willingham to D. Woodlan, "Request for Additional Information Regarding the Environmental Review of the Combined License Application for Comanche Peak Nuclear Power Plant, Units 3 and 4," dated June 26, 2009 (ML091460707)

Dear Sir:

Luminant Generation Company LLC (Luminant) hereby submits the last of three letters responding to specific questions posed in the referenced letter for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. The specific responses in the Attachment to this letter are:

ALT-01	HYD-11	HYD-17	SOC-10
HP-01	HYD-12	HYD-18	SOC-16
HR-04	HYD-13	HYD-19	SOC-23
HYD-07	HYD-15	SOC-05	TE-03

When support documents such as calculations or reports are provided, only the revision used to support the application is submitted. Any subsequent revisions to those documents will be retained and will be available for review or audit on site.

There are no commitments in this letter.

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

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

Executed on August 10, 2009

Sincerely,

Luminant Generation Company LLC



Rafael Flores

Attachment Response to Request for Additional Information Regarding the Environmental Review of the Combined License Application for Comanche Peak Nuclear Power Plant, Units 3 and 4 (electronic)

- Enclosures
1. Generic Research Design for Archaeological Surveys of Oncor Electric Delivery Electric Transmission Line Projects in Texas, February 2008 (HR-04)
  2. CWS-13-05-230-002, Rev. B, Conceptual Design of Makeup Water Screening System for Lake Granbury Intake Structure, June 12, 2008 (HYD-11)
  3. CWS-13-05-230-001, Rev. G, Conceptual Structural Design of Circulating Water, Makeup Water and Blowdown Water Systems, April 7, 2009 (HYD-12)
  4. DRN-12-05-500-001, Rev. A, Conceptual Design of Grading and Drainage of COLA Building Structures (HYD-13)
  5. Upper Basin, [www.brazos.org](http://www.brazos.org), FY2008 (SOC-10)
  6. Acton Municipal Utility District, [www.amud.com](http://www.amud.com), July 8, 2009 (SOC-10)
  7. Transportation and Traffic Engineering Study. Comanche Peak Steam Electric Station, October 1987 (SOC-16)
  8. Vegetation Management Guidelines, June 2007 (TE-03)
  9. Transmission Engineering Standards, Construction, 720-003 Construction Specification for Transmission Line Right-of-Way Clearing, August 7, 2007 (TE-03)
  10. Oncor Electric Delivery Company, Overhead Electric Environmental Guidelines for Small-Scale Construction/Maintenance Projects, Revision 3, February 2008 (TE-03)
  11. Oncor Electric Delivery Co., Overhead Electric Environmental Guidelines for Vegetation Maintenance on Right-of Way and Company Facilities, Revision 3, February 2008 (TE-03)
  12. 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 (TE-03)

Cc - Stephen Monarque, w/ attachment  
Michael Willingham, w/attachment

Electronic Distribution w/ Attachments 1 and 2

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**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 REGARDING THE ENVIRONMENTAL REVIEW**

**DATE OF RAI ISSUE: 6/26/2009**

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**QUESTION NO.: ALT-01 (9.2.3.1.1.2-1)**

Provide an estimate for the land use requirements for the six-unit 3,180 MW(e) coal-fired plant alternative described in the ER based on the land use requirements of actual large coal plants.

In Section 9.2.3.1.1.2, Land Use [Coal], the ER states that 5,406 acres would be needed for the alternative six coal-fired units based on the NUREG-1437 estimate of 1700 acres per 1000 MW(e). However, the NRC acknowledges that this reference provides an unrealistically high estimate resulting in projected land needs that exceed the available land at the Comanche Peak site. In order to determine the ability for the proposed coal-fired alternative to be located at the Comanche Peak site, a more realistic estimate is needed. The land use requirements will impact the need for additional land or the need to locate a portion of the generating capacity at another location. Use a minimum of three regional plants or other plants in Luminant's fleet to provide an average land use requirement in acres per MW(e). Provide the names, locations, and sizes of each plant used in the estimate.

**ANSWER:**

Plot plans for three of Luminant's lignite coal plants were reviewed to gather site acreage usage data. This data, along with the other facility attributes requested, are provided in the table below. These acreage figures do not include any mining, lakes, or waste disposal facilities, nor do they include any "excess" land that may be owned by Luminant in the vicinity around the facilities.

Plant Site Name	Total Site MW(e)	Total Site Acreage	Location
Martin Lake	2400	95	Rusk County, Tx
Sandow 5	590	30	Milam County, Tx
Oak Grove	1800	100	Robertson County, Tx
Totals	4790	225	
Average acres per MW(e)		0.047	
Average acres per 1000 MW(e)		47	



Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: HP-01 (3.5.1.3-1)**

Provide information on the design (including location) and planned operation of the evaporation pond to limit tritium concentration in Squaw Creek reservoir.

**ANSWER:**

The primary purpose of the evaporation pond is to provide a means to receive, store, and process treated radioactive effluent from the CPNPP Unit 3 and 4 liquid radioactive waste management system when the tritium concentration in the SCR is approaching a predetermined limit. The evaporation pond is not designed as a normal discharge. When the tritium concentration in SCR is approaching predetermined limit the radioactive effluent is discharged to the evaporation pond.

During normal operation, the tritium concentration of the liquid effluents from all four units in the SCR can be close to, but it is controlled not to exceed the administrative limit. When the tritium concentration in the SCR is analyzed to be getting close to the limit, liquid effluent from Units 3 and 4 is to be diverted to the evaporation pond.

Using the maximum tritium concentration in the effluent (assuming maximum Tritium Distribution Factor, full-power operation, and an operating margin of 20 percent tritium concentration in the SCR), effluent up to about 50 percent of the Unit 3 and 4 total would need to divert into the pond for temporary storage until the tritium concentration in the SCR comes below the target concentration. This change of tritium concentration in the SCR may be a result from seasonal rainfalls, additional makeup water from Lake Granbury, or higher spill over rate from the SCR into the Brazos River. The evaporation pond is designed to meet following design standards. (Others may be applicable as the design is finalized.)

Texas Commission of Environmental Quality (TCEQ)

TCEQ 330, Municipal Solid Waste

TCEQ 217.203, Design Criteria for Natural Treatment Facilities

American Society for Testing and Materials (ASTM)

ASTM D3020, Specification for Polyethylene and Ethylene Copolymer Plastic Sheeting for Pond, Canal and Reservoir Lining

ASTM D5514-06, Standard Test Method of Large Scale Hydrostatic Puncture Testing of Geosynthetics

ASTM D7002-03, Standard Practice for Leak Location on Exposed Geomembranes Using the Water Puddle System

The pond is an open-type, to allow water to naturally evaporate, and is constructed with two layers of High Density Polyethylene (HDPE) material suitable for this function. A drainable mesh mat with a minimum thickness of 30 mils is provided in between the two layers of HDPE to allow movement of leakage from the top layer of HDPE.

The pond is constructed with a total depth of 6 feet, with 4 feet of liquid and 2 feet of freeboard. A layer of clay, with permeability less than 1E-7 centimeter per second, supports the pond. A berm is constructed to prevent surface water from entering the pond during rainy seasons.

The pond is equipped with a centrifugal pump to return the water to the SCR via the discharge box. Evaporation pond water is only returned to SCR if the SCR tritium concentration is sufficiently low to accommodate the evaporation pond effluent. The return piping is connected to the circulating water return line. The effluent is sampled before discharge and is monitored for radionuclide concentration by a radiation monitor, which can turn off the pump, actuate an isolation valve and initiate an alarm signal to the Main Control Room and the Radwaste Control Room for operator actions.

The pond is located approximately 0.4 mile southwest of CPNPP Units 3 and 4 power block as described in FSAR Subsection 2.3.5.2.2 and ER Figure 3.4-3 (Sheet 3 of 3).

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: HR-04 (5.1.3.2-1)**

Provide a copy of the document titled: *Generic Research Design for Archaeological Surveys of ONCOR Electric Delivery/Electric Transmission Line Projects in Texas*, ONCOR N.D.

**ANSWER:**

The requested document is attached with an affidavit supporting its proprietary classification.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: HYD-07 (2.3.1-7)**

Provide all available site-specific soils and hydrogeologic data relevant to the proposed 384-acre onsite storage and evaporation ponds and blowdown treatment facility.

**ANSWER:**

The evaporation and storage ponds associated with the blowdown treatment facility will be designed and constructed in accordance with the Texas Commission on Environmental Quality (TCEQ) requirements. These requirements will ensure protection of the groundwater because they include protective features that preclude leakage from the ponds. Consequently, site-specific soils and hydrogeologic data are not needed.

The Texas Commission on Environmental Quality (TCEQ) establishes the standards to maintain the quality of the water in the state consistent with public health and enjoyment, protection of wildlife, operation of industries, and economic development of the state.

Impact on R-COLA

None.

Impact on S-COLA

None

Impact on DCD

None.

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**QUESTION NO.: HYD-11 (3.4.2-1)**

Provide 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.

**ANSWER:**

The design document for the design detail and calculation (CWS-13-05-230-002, Rev B) is attached.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: HYD-12 (3.4.2-2)**

Provide for reference 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.

**ANSWER:**

The design document for the design detail (CWS-13-05-230-001, Rev G) is attached.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: HYD-13 (3.6.3.2-1)**

Provide for reference details of how storm water will be routed, collected, treated and disposed for the Unit 3 and 4 facilities.

**ANSWER:**

The document for detailed water drainage (DRN-12-05-500-001, Rev. A) is attached.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

**QUESTION NO.: HYD-15**

Provide estimates of the 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. Include quantitative multi-year time series simulation data on the elevation, inflows, releases, and water quality of reservoirs in the Brazos River system.

**ANSWER:**

Further discussions with the NRC revealed the need to provide results for the modified WAM simulations, the executable code, and a description of the modifications that were made to the TCEQ WAM. The requested information is attached.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: HYD-17 (5.2-3)**

Provide a more detailed description and justification of how the SMALL level of impact to groundwater and surface water was determined.

**ANSWER:**

Because the evaporation and storage ponds associated with the blowdown treatment facility will be designed and constructed in accordance with the Texas Commission on Environmental Quality (TCEQ) requirements, there will be no impact to groundwater and surface water. The TCEQ requirements include protective features that preclude leakage from the ponds.

The TCEQ establishes the standards to maintain the quality of the water in the state consistent with public health and enjoyment, protection of wildlife, operation of industries, and economic development of the state.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: HYD-18 (5.3-1)**

Provide a characterization, with supporting data and rationale, of the 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 including a description of how 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.

**ANSWER:**

The requested information was provided to the NRC on May 26, 2009, via Luminant letter TXNB-09021 (ML091490263). The question was discussed further with the NRC reviewer at the July 2009 Hydrology Safety Site Visit. The reviewer expressed some doubt that certain statements in the ER were adequately supported. Although Luminant believes the studies support the conclusions, Luminant will delete the statements regarding low intake velocity and the distance between the discharge and intake locations in ER Subsections 5.2.1.6 and 5.3.2.1. The ER markup pages are attached.

Impact on R-COLA

See attached marked-up ER Revision 0 Subsections 5.2.1.6 and 5.3.2.1.

Impact on S-COLA

None.

Impact on DCD

None.

Attachments:

None.

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**QUESTION NO.: HYD-19 (5.3-2)**

Provide a site-specific assessment of the 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, with particular emphasis on the conditions that would exist during periods of minimum release from DeCordova Bend Dam and minimum inflow to Lake Granbury.

**ANSWER:**

The information was provided to the NRC on May 26, 2009 via Luminant letter TXNB-09021 (ML091490263).

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: SOC-05 (2.5.2.2.3-1)**

Provide the following information about local traffic conditions:

1. The exact location (indicated by mile marks on a road map) of road segments for which traffic counts are provided in Sect. 2.5.2.2.3 of the ER.
2. Peak hour traffic counts and Level of Service (LOS) for all road segments for which traffic counts are provided in Sect. 2.5.2.2.3 of the ER.
3. The Level of Service that would apply when "capacity" as described in Section 4.4.1.3 of each direction of travel on a two-lane highway).
4. Road segments and intersections near CPNPP where congestion is currently experienced during shift changes for normal operations of CPNPP Units 1 and 2, and peak hour traffic counts and LOS for those segments and intersections.
5. Road segments and intersections near CPNPP where congestion is currently experienced during CPNPP 1 and 2 maintenance and refueling outages, and peak hour traffic counts and LOS for those segments and intersections.
6. Road segments and intersections near CPNPP where congestion is currently experienced due to traffic related to oil and gas exploration and extraction activities.
7. Peak hour traffic counts and LOS for key segments of US 377 in and around Granbury and for the intersections of US 67 and SR 144 in Glen Rose (if not addressed above) Peak hour traffic counts and LOS for key road segments and intersections in Cleburne and Stephenville that are on the main route to CPNPP.

**ANSWER:**

(1) Information provided to the NRC in the UTR Revision 3 on May 14, 2009, via Luminant Letter TXNB-09011.

(2) Levels of Service (LOS) are not available for road segments in Texas without a specific traffic study. Traffic studies are performed when a roadway is deemed sufficiently congested, often as the result of public complaints. Peak traffic counts for the road segments mentioned in Subsection 2.5.2.2.3 are not available from the Texas Department of Transportation (TxDOT). Peak traffic counts are only available for road segments with permanent ATR stations. ATR is defined as Automatic Traffic Recorders and are permanent locations that record traffic 24-hrs a day all year.

(3) According to the Highway Capacity Manual, the capacity of a highway is “the maximum hourly rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.” The LOS of a two-lane highway at capacity would depend upon the average time spent following and the average speed. For a two-lane highway, the highest volume attainable under LOS E defines the capacity of the highway, generally 3,200 passenger cars per hour total in both directions.

(4) Local officials reported no traffic congestions on FM 51 and FM 56. Congestion is not currently experienced during CPNPP Units 1 and 2 shift changes. The maximum number of workers involved in peak hour morning and evening shift changes during operations is related to the number of workers. Assuming a single worker per vehicle, the maximum number of vehicles involved in peak morning shift changes for CPNPP Units 1 and 2 is approximately 900 vehicles on an average day, with the peak afternoon/evening number at approximately 200 vehicles. All other hours are approximately 100 vehicles. These vehicle numbers include all people going in and out of the plant, including cars, trucks, and deliveries.

As discussed in Subsection 2.5.2.2.3, FM 56 has an annual average daily traffic (AADT) count of 3500 south of the plant entrance and 8500 to the north. These numbers include CPNPP plant personnel. Thus, if all the peak morning workers came from the south, it would only amount to approximately 26 percent of the daily traffic. If all the peak morning workers came from the north, it would amount to approximately 11 percent of the total daily traffic. Because the traffic is split between the northern and southern approaches, the impact to each direction is less than the percents listed above.

LOS and peak traffic counts are not available as discussed in Part 2 of this response.

(5) Congestion is not currently experienced during CPNPP Units 1 and 2 outages. During a standard outage there are 1600 vehicles during the peak morning shift change, 400 vehicles for peak afternoon/evening, and 150 vehicles at all other hours. Thus, if all the peak morning workers including outage workers came from the south, it would amount to approximately 46 percent of the daily traffic. If all the peak morning workers came from the north, it would amount to approximately 19 percent of the total daily traffic. During a large outage, there are 3000 vehicles during the peak morning shift change, 1200 vehicles for peak afternoon/evening, and 800 vehicles at all other hours. Thus, during a large out if all the peak morning workers including outage workers came from the south, it would amount to approximately 86 percent of the daily traffic. If all the peak morning workers came from the north, it would amount to approximately 38 percent of the total daily traffic.

(6) Information provided to the NRC in the UTR Revision 3 on May 14, 2009, via Luminant Letter TXNB-09011.

(7) There are no permanent ATR stations in Erath, Hood, Johnson, or Somervell County. Thus, LOS and peak traffic counts are not available for the key road segments around Cleburne, Glen Rose, Granbury, and Stephenville.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.



**QUESTION NO.: SOC-10 (2.5.2.7.1-1)**

Provide the following information about local water and waste water treatment systems:

1. Whether the Lake Granbury Surface Water and Treatment System is currently in operation. If not, an explanation is needed of any financial or technical issues that may inhibit future operations
2. The water treatment capacity and average daily consumption for the Cities of Granbury and Tolar (currently reported differently in Table 2.5-20 and in the text of Section 2.5.2.7.1 of the ER)
3. Current peak daily consumption (to supplement the average daily consumption) for all water treatment facilities listed in Table 2.5-20 of the ER
4. Names of municipalities served by each water treatment system shown in Table 2.5-20 of the ER
5. For all wastewater processing facilities, the same information shown for water systems in Table 2.5-20 of the ER, plus current peak demand, name of municipality served, and an identification of which wastewater facilities serve combined systems (those that handle both sanitary sewage and storm water runoff)

**ANSWER:**

1, 2, and parts of 5. The information in the response to these questions were addressed by Luminant's response to NRC Information Needs SOC-10 in the Updated Tracking Report (UTR) Revision 3 provided to the Staff on May 12, 2009, via Luminant Letter TXNB-09011 and includes the status of the Lake Granbury Surface Water and Treatment System (SWATS), the water treatment capacity and average daily consumption for the cities of Granbury and Tolar, and the maximum capacity and current usage of the wastewater treatment facilities. Question 5 is being separated into two parts, 5a and 5b. Part 5a was addressed by the Update Tracking Report, Revision 3. Part 5b is answered to below.

3. Current peak consumption for the water treatment systems shown in Table 2.5-20 is provided in the table below.

Name	PWS #	Peak Daily Consumption (gpd)
<b>Hood County</b>		
Acton MUD	1110007	5.503
Acton Water Co. Royal Oaks	1110055	0.070
Arrowhead Shores (Merged/Annexed with Oak Trail Shores)		
Bentwater on Lake Granbury	1110116	0.221
Blue Water Shores	1110079	0.114
Boynton Water Co.	1110042	0.010
Brazos River Acres	1110028	0.178

Name	PWS #	Peak Daily Consumption (gpd)
Brazos River Authority Lake Granbury SWATS	1110100	5.150
Canyon Creek Addition	1110070	0.145
City of Granbury	1110001	3.151
City of Lipan	1110011	Unknown
City of Tolar	1110012	0.166
Comanche Cove & Heritage Heights	1110060	0.282
Comanche Harbor & Port Ocall	1110022	0.197
Comanche Peak North	1110050	0.089
Country Meadows Subdivision	1110089	Unknown
Eastwood Village	1110052	0.093
Fall Creek Utility Company	1110114	Unknown
Granbury Acres Water System	1110109	0.060
Hideaway Bay Estates	1110002	0.038
Hunterwoods Subdivision Water System	1110083	Unknown
Laguna Tres Subdivision	1110019	0.158
Laguna Vista Subdivision	1110095	0.105
Lake County Acres	1110059	Unknown
Lakeside Hills (Merged/Annexed with Hunterwood Subdivision Water System)		
Long Creek Water Co.	1110017	0.093
Mallard Pointe Subdivision	1110112	Unknown
Mesa Grande WSC	1110018	0.051
Midhaven Estates	1110094	0.148
Montego Bay Estates	1110044	0.068
Mooreland Water Co.	1110006	0.062
Mountain View Subdivision	1110035	0.185
Nolan Creek Estates	1110080	Unknown

Name	PWS #	Peak Daily Consumption (gpd)
North Fork Creek	1110074	0.154
North Fork Creek II	1110088	Unknown
Oak Trail Shores	1110004	0.573
Peninsula Addition	1110115	0.050
Rain WSC	1110037	0.031
Rancho Brazos Subdivision	1110036	0.060
Ridge Utilities Inc.	1110084	0.051
River Country Acres	1110045	0.058
River Run Subdivision	1110076	0.025
Rock Harbor Estates	1110024	0.050
Rolling Hills Water Service Inc.	1110032	Unknown
Scenic Ridge Addition	1110098	0.024
Shady Grove Subdivision	1110085	0.031
Sky Harbour WSC	1110016	0.091
South Harbor Subdivision	1110056	0.092
Summerlin Addition (Merged/Annexed with City of Granbury)		
Sunchase Meadows	1110087	0.202
Sunset Acres Mobile Home Park	1110077	0.026
Sunset Canyon Water Moore Estates	1110102	0.010
Western Hills Harbor	1110005	0.158
Whipporwill Bay Subdivision	1110027	0.110
<b>Somervell County</b>		
Cheyenne Hills Water Supply	2130035	0.025
City of Glen Rose	2130001	1.126
Country Meadows	2130008	Unknown
Greenfields on Squaw Creek	2130036	0.005
Happy Hill Farm	2130009	Unknown

<b>Name</b>	<b>PWS #</b>	<b>Peak Daily Consumption (gpd)</b>
Oak River Ranch	2130031	Unknown
Squaw Creek Subdivision Water System	2130021	0.032
Sunset Park Subdivision	2130022	0.024

4. The public water systems are organized by Certificates of Convenience and Necessity (CCNs) that are issued by the TCEQ. The CCNs authorize a utility to provide water and/or sewage service to a specific area. The CCNs associated with the public water systems shown in Table 2.5-20 are provided in the table below, along with locations. The distance and direction from the CPNPP centerpoint was determined based on shapefiles provided by the TCEQ and the TWDB.

<b>CCN #</b>	<b>CCN Name</b>	<b>Public Water System Name</b>	<b>PWS #</b>	<b>Distance from CPNPP</b>	<b>Location</b>
10904	City of Granbury	City of Granbury Summerlin Addition (Merged/Annexed with City of Granbury)	1110001	8 mi N	City of Granbury
11077	Sky Harbour WSC	Sky Harbour WSC	1110016	13.2 mi NNE	North of Granbury on the north side of LG
11157	Aqua Texas Inc.	Bentwater on Lake Granbury Brazos River Acres Country Meadows Subdivision Eastwood Village Hunterwoods Subdivision Water System Lake County Acres Mallard Pointe Subdivision Midhaven Estates Mountain View Subdivision Nolan Creek Estates	1110116 1110028 1110089 1110052 1110083 1110059 1110112 1110094 1110035 1110080	2.8 mi E	Between CPNPP and SH 144

CCN #	CCN Name	Public Water System Name	PWS #	Distance from CPNPP	Location
		North Fork Creek	1110074		
		North Fork Creek II	1110088		
		Peninsula Addition	1110115		
		River Country Acres	1110045		
		Rock Harbor Estates	1110024		
		Sunchase Meadows	1110087		
		Sunset Acres Mobile Home Park	1110077		
		Whipporwill Bay Subdivision	1110027		
		Lakeside Hills (Merged/Annexed with Hunterwood Subdivision Water System)			
11306	Rain Water Supply Corporation	Rain WSC	1110037	11.6 mi N	North of Granbury and south of LG
11468	CPN Water Works Company	Comanche Peak North	1110050	10.1 mi NNE	East of Granbury and LG
		Scenic Ridge Addition	1110098		
		Shady Grove Subdivision	1110085		
11603	Mooreland Water Co.	Mooreland Water Co.	1110006	8.3 mi N	South of western portion of Granbury
11609	Laguna Tres LTD	Laguna Tres Subdivision	1110019	12.4 mi N	North of Granbury on the north side of LG
		South Harbor Subdivision	1110056		
11983	Laguna Vista LTD	Laguna Vista Subdivision	1110095	13.2 mi	North of Granbury on the north side of LG
12037	Crest Water Company	Oak River Ranch	2130031	7.5 mi SE	Southeast of Rainbow
12055	Sunset Park Addition	Sunset Park Subdivision	2130022	4.6 mi S	West of Glen Rose
12088	Mesa Grande	Mesa Grande WSC	1110018	11.6 mi N	North of Granbury

CCN #	CCN Name	Public Water System Name	PWS #	Distance from CPNPP	Location
	WSC				on the south side of LG
12283	City of Lipan	City of Lipan	1110011	20 mi NW	City of Lipan
12724	Rolling Hills Water Service Inc.	Rolling Hills Water Service Inc.	1110032	16.1 mi NNE	North of Oak Trails Shores CDP and LG
12809	Texas H2O Inc.	Boynton Water Co.	1110042	6.9 mi NE	South of Granbury and LG
		Canyon Creek Addition	1110070		
		Long Creek Water Co.	1110017		
		Ridge Utilities Inc.	1110084		
		Sunset Canyon Water Moore Estates	1110102		
12884	Fall Creek Utility Company	Fall Creek Utility Company	1110114	8.7 mi NE	North of Pecan Plantation and east of LG
12895	Cheyenne Hills Water Supply	Cheyenne Hills Water Supply	2130035	8.5 mi SE	East of Rainbow
12902	Aqua Texas Inc.	Greenfields on Squaw Creek	2130036	2.8 mi SE	Southeast of CPNPP and north of Glen Rose
		Squaw Creek Subdivision Water System	2130021		
12971	Acton MUD	Acton MUD	1110007	7.5 mi NE	In Pecan Plantation and east of Granbury
12983	Monarch Utilities I LP	Acton Water Co. Royal Oaks	1110055	6.7 mi N	In and around Granbury
		Comanche Cove & Heritage Heights	1110060		
		Comanche Harbor & Port Ocall	1110022		
		Granbury Acres Water System	1110109		
		Hideaway Bay Estates	1110002		
		Montego Bay Estates	1110044		

CCN #	CCN Name	Public Water System Name	PWS #	Distance from CPNPP	Location
		Oak Trail Shores	1110004		
		Rancho Brazos Subdivision	1110036		
		Western Hills Harbor	1110005		
		Arrowhead Shores (Merged/Annexed with Oak Trail Shores)			
O0858	Hood County Utilities Inc.	Blue Water Shores	1110079	8.2 mi NE	North of Pecan Plantation and east of LG
O0858	Hood County Utilities Inc.	River Run Subdivision	1110076	9.7 mi NE	North of Pecan Plantation and east of LG
P0026	Brazos River Authority	Brazos River Authority Lake Granbury SWATS	1110100	11 mi NE	East of LG and north of Pecan Plantation
P0651	City of Glen Rose	City of Glen Rose	2130001	3.7 mi SE	City of Glen Rose
P0835	City of Tolar	City of Tolar	1110012	8.9 mi NW	City of Tolar
N/A	N/A	Country Meadows	2130008	13.6 mi NE	Northeast of Granbury
N/A	N/A	Happy Hill Farm	2130009	4.5 mi E	Between SH 144 and the Brazos River

Of the water systems described above, seven water systems serve municipalities. Acton MUD serves the City of Granbury and Pecan Plantation CDP in addition to the following residential areas (see attachment):

- Bluffs
- DeCordova Bend Estates
- DeCordova Hills
- D. R. Bales Addition
- Enchanted Village - LPWWS
- Forest Oaks
- Fountain Village

- Grand Harbor
- Grande Cove
- Gran Tera
- Holiday Estates
- Indian Harbor
- Kemah Ct. Addition
- Lakes of Timber Cove - LPWWS
- Main Place
- Nassau Bay
- Port Ridglea
- Ranches of DeCordova
- Rollins Addition
- Secluded Oaks
- Stewart Oaks
- Stoney Creek - LPWWS
- The Trees
- Thistle Ridge
- Timber Cove - LPWWS
- Treaty Oaks - Sewer provided by Aqua Texas
- Walnut Creek
- Wildwood Estates
- Willow Ridge

The Brazos River Authority Lake Granbury Surface Water and Treatment System serves the city of Granbury, Acton MUD, the city of Keene, Johnson County Fresh Water Supply District No. 1, and Johnson County Special Utility District (see attachment). The city of Granbury water system, the city of Tolar water system, the city of Lipan water system, and the city of Glen Rose water system serve their respective municipalities. Monarch Utilities I LP serves the city of Granbury. The remaining water systems in the table serve RV parks, subdivisions, and other residential areas outside city limits.

5b. The maximum capacity and average usage for the wastewater treatment plants is provided in Subsection 2.5.2.7.1. The number of connections is not relevant to wastewater treatment. The wastewater treatment plants listed serve their respective municipalities. The Glen Rose wastewater treatment plant serves the city of Glen Rose and handles both sanitary sewage and storm water runoff. It has a peak usage of 400,000 gpd. The City of Lipan wastewater treatment plant has a capacity of 100,000 gpd with a



peak usage of 20,000 gpd. It does not handle storm water runoff. The Tolar wastewater treatment plant has a peak usage of 85,000 gpd, and is a sanitary sewage system that does not handle storm water runoff. The Granbury wastewater treatment plant also does not handle storm water runoff and has a peak usage of 1.1-1.2 million gpd.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: SOC-16 (4.4.1.3-1)**

Provide the following information about construction period impacts to transportation:

1. The construction-period impacts to local traffic identified in the 1987 traffic study referenced in Section 4.4.1.3 of the ER (and a copy of that document, if possible)
2. A detailed description of any improvements made in terms of traffic signals, widened lanes, and additional signage after the 1987 traffic study
3. Projected Level of Service for the road segments and intersections mentioned under Section 2.5.2.2.3 (above) during shift change times during the peak construction period for CPNPP Units 3 and 4, taking into account the presence of Unit 1 and 2 operations workers and the periodic presence of Unit 1 and 2 outage workers.

**ANSWER:**

1. The 1987 traffic by DeShazo, Starek, and Tang is provided as an attachment as part of the response for this request.
2. Improvements to roads such as traffic signals, widened lanes, or additional signage were made to FM 56 at the site access road in response to suggestions made in the 1987 traffic study. A detailed description of the widened lanes on FM 56 is discussed in the RAI response to SOC-04.
3. The maximum number of workers involved in peak hour morning and evening shift changes due to the operations of CPNPP Units 1 and 2 are as follows. Assuming a single worker per vehicle, the maximum number of vehicles involved in peak morning shift changes for CPNPP Units 1 and 2 is approximately 900 vehicles on an average day, with the peak afternoon/evening number at approximately 200 vehicles. All other hours are approximately 100 vehicles. These vehicle numbers include all people going in and out of the plant, including cars, trucks, and deliveries. During outages the number of vehicles increases. During a standard outage there are 1600 vehicles during the peak morning shift change, 400 vehicles for peak afternoon/evening, and 150 vehicles at all other hours. During a large outage, there are 3000 vehicles during the peak morning shift change, 1200 vehicles for peak afternoon/evening, and 800 vehicles at all other hours.

During the construction of CPNPP Units 3 and 4, additional workers are onsite as described in Subsection 4.4.1.3. An additional 2601 vehicle are expected, with 60 daily truck deliveries. As described in Subsection

4.4.1.3, it is anticipated that there will be one shift during construction. The total number of vehicles, combining the operational staff for Units 1 and 2, onsite workforce for Units 3 and 4, and outage workers, is approximately 5100 vehicles. The peak morning total, including outage workers, is approximately 4400 vehicles. FM 51 and FM 56 have a LOS A as mentioned in Subsection 2.5.2.2.3. Further discussion regarding LOS is discussed in RAI SOC-05.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: SOC-23 (5.8.1.1-1)**

Provide the following information about the operations period workforce:

1. A revised ER text explaining why CPNPP Units 3 and 4 require only 550 operations workers while CPNPP Units 1 and 2 are using 1,000 workers.
2. The maximum number of workers involved in peak hour morning and evening shift changes during the operations period.
3. The daily number of operations-related deliveries expected for CPNPP Units 3 and 4.

**ANSWER:**

The difference in workers is chiefly attributable to the difference in reactor type. While CPNPP Units 1 and 2 use Westinghouse technology from the early 1970's, the US-APWR uses subsequent advancements in digital technology which significantly increase the use of digital instrumentation and control equipment. Additionally, the US-APWR uses lesson-learned from world-wide plant operating history resulting in improvements in equipment availability and reliability. Collectively, these enhancements have reduced maintenance, surveillance, and operations activities and have reduced the need for many support staff. Some of the support staff from CPNPP Units 1 and 2 will also support the operation of CPNPP Units 3 and 4. The number of licensed operators will remain the same for CPNPP Units 3 and 4 as it is for CPNPP Units 1 and 2.

The maximum number of workers involved in peak morning shift changes for CPNPP Units 1 and 2 is approximately 900 people on an average day, with an afternoon/evening peak number of approximately 200 workers. During outages, the number of workers increases. During a standard outage there are 1600 workers during the peak morning shift change and 400 workers for afternoon/evening peak times.

The daily number of operations-related deliveries for Units 1 and 2 is approximately 15. During outages this would increase to approximately 45 per day. The daily number of operations-related deliveries for Units 3 and 4 is anticipated to be similar to Units 1 and 2.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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**QUESTION NO.: TE-03 (2.2.2-3)**

Provide copies of the following documents that were made available at the site visit: (1) Vegetation Management Guidelines, June 2004 (internal, Oncor elect. delivery); (2) Transmission Line Engineering Standards – Construction, 720-003 Construction Specification for Transmission Line Right-of-Way Clearing, 8/7/07, pp. 1-9; (3) Oncor Electric Delivery Co., Overhead Electric Environmental Guidelines for Small-Scale Construction/Maintenance Projects, Rev. 3, Feb. 2008, Cover page & Guideline 1-10; (4) 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; (5) 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.

**ANSWER:**

All five of the requested documents are attached, including a more current revision (June, 2007) of document (1). Documents (1), (3), (4), and (5) are proprietary and are supported by affidavits. Document (2) is being sent without any restrictions.

**Impact on R-COLA**

None.

**Impact on S-COLA**

None.

**Impact on DCD**

None.