September xx, 2009

Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application

Part 3,

Environmental Report

Update Tracking Report

Revision 5

Revision History

Revision	Date	Update Description
0	3/31/2009	No technical changes in Rev.0 Editorial Changes in Chapters: Ch.1, 2, 3, 4, 5, 6, 7, 8, 9 and 10
1	4/14/2009	Updated Chapters: Ch. 1, 2, 3, 4, 5, 8, 9
2	4/24/2009	Updated Chapters: Ch. 1, 2, 4, 5, 10
-	4/28/2009	Updated Chapters: Ch. 7 See Luminant Letter TXNB-09013 dated 4/28/2009
3	5/08/2009	Updated Chapters: Ch 2, 3, 4, 5, 6
4	06/30/2009	Updated Chapters: Ch 2, 3, 4, 5, 6, 9, 10
-	7/27/2009	Updated Chapters: Ch. 2, 4 See Luminant Letter TXNB-09027 dated 7/27/2009
5	09/xx/2009	Updated Chapters: Ch 1, 2, 3, 6

Chapter 1

Chapter 1 Tracking Report Revision List

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00615	Acronyms and Abbreviations	1-xv	Editorial correction	Change “MPT Main Power Transformer” to “MT Main Transformer”.	0
CTS-00462	Table 1.3-2	1.3-5	Match to NUREG 1555	Change section titles of 4.7, 4.8, 5.11 and 5.13.	0
LU-02	Figure 1.1-5	_	Represent line from CPNPP to DeCordova as a new line.	Change color of line from CPNPP to DeCordova from red to green.	1
CTS-00693	Table 1.2-1	1.2-3 1.2-4 1.2-5 1.2-6 1.2-8 1.2-9	Table needs to accurately reflect the permit conditions and permits required.	Table 1.2-1 updated to reflect only those permits that apply.	1
CTS-00694	Table 1.2-1	1.2-3 1.2-4 1.2-5 1.2-6 1.2-8 1.2-9	Editorial	Adjust column setting and row to improve the readability	1
MET-25	Table 1.2-1	1.2-9	ER Site Audit NRC information need	Add TCEQ 30 TAC 116 State Construction Air Permit	1
ALT-11	1.0	1.0-1	Increase information as discussed with the NRC.	Revised subsection to include a concise statement of the purpose and the need for the proposed project.	2
CTS-00693	Table 1.2-1	1.2-9	Editorial	Removed the information for financial institutions	2
CTS-00716	1.1.2	1.1-2	Erratum	Change the coordinates of the center of the reactors and the center point of the CPNPP units 3 and 4.	5

1.1.2 SITE LOCATION

As described in Section 2.1, the CPNPP site is a 7950-acre (ac) site located in rural portions of Hood and Somervell counties of north central Texas. Figures 1.1-1, 1.1-2, and 1.1-3 provide a visual indication of the current region, vicinity, and site. The CPNPP Units 3 and 4 are located along the southern banks of Squaw Creek Reservoir (SCR). The site is 5.2 miles (mi) north of Glen Rose and 9.6 mi south of Granbury. Granbury is the largest city within a 10-mi radius of the site. The nearest population centers to the site are Glen Rose and Granbury. The four largest population centers (as defined by 10 Code of Federal Regulations [CFR] 100.3) in the region are Fort Worth, Haltom City, Burleson, and Cleburne.

Section 2.1 lists the coordinates of the center of the new reactors as:

LATITUDE AND LONGITUDE NAD83 (degrees/minutes/seconds)

	Latitude	Longitude
UNIT 3:	32° 18’ 08.9” N	97° 47’ 30.1” W
UNIT 4:	32° 18’ 07.5” N	97° 47’ 41.8” W

UNIVERSAL TRANSVERSE MERCATOR ZONE 14 NAD83 (Meters)

	Northing	Easting	
UNIT 3:	~~613759~~3574606	~~3574606~~613759	CTS-00716
UNIT 4:	~~613453~~3574559	~~3574559~~613453	CTS-00716

The center point of the CPNPP Units 3 and 4 site is located at ~~613606~~3574584N and ~~3574584~~613606E. CTS-00716

The CPNPP site boundary (Figure 1.1-3) encompasses the operating nuclear CPNPP Units 1 and 2, the proposed location for CPNPP Units 3 and 4, the support structures and facilities, and the entire SCR. As noted in Section 2.1, the aquatic environs are dominated by SCR, which has an approximate pool elevation of 775 feet (ft) above mean sea level (msl). The plant grade (Subsection 2.3.1.2.6) elevation for the new units is 822 ft above msl.

The proposed units, constructed within the CPNPP site boundary (Figure 1.1-3), utilize areas of previous construction activity (such as laydown yards and parking) along with previously undisturbed areas of land.

CPNPP Units 1 and 2 began commercial operations in 1990 and 1993, respectively. Construction activities for CPNPP Units 1 and 2 resulted in extensive alteration of the site involving vegetation clearing; establishment of on-site roads; establishment of a railroad spur to the site; extensive excavation and grading with heavy equipment; construction of SCR and the Safe Shutdown Impoundment (SSI); and building of on-site warehouses, shops, and support facilities. The CPNPP Units 3 and 4 construction proposed activities are similar in nature but effort is being

Chapter 2

Chapter 2 Tracking Report Revision List

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00615	Acronyms and Abbreviations	2-xlii	Editorial correction	Change “MPT Main Power Transformer” to “MT Main Transformer”.	0
CTS-00611	2.1	2.1-1	Erratum	Change “624,067” to “653,320”; “61,115” to “62,306”; “39,875” to “39,987”; “37,976” to “41,564”; “29,184” to “29,689” to match 2006 US Census instead of 2005 US Census.	0
CTS-00611	2.1.1	2.1-2	Updated reference required to provide 2006 data not 2005 data	Change (US Census 2005) to (US Census 2006) notated as US Census Bureau. “American FactFinder – Texas By Place GCT Population Estimates.” US Census Bureau, Washington, DC. Available URL: Http://factfinder:census.gov/servlet/home/en/official - estimates.html, Accessed July 24, 2008.	0
CTS-00459	2.3.1.1.5	2.3-4	Erratum	Change “384 ac” to “400 ac”.	0
CTS-00455	2.3.3.3.5	2.3-61	Editorial correction	Delete “No” and add “Other than CPNPP Units 1 and 2,”	0
CTS-00648	2.3.1.1.6	2.3-4	Erratum	Change “0.25 ac” to “0.78 ac”.	0
MET-04	List of Tables	2-xvii and 2-xviii	Erratum	Add “Dallas” in front of “Fort Worth” and “Airport” after Fort Worth	1
MET-14	List of Tables	2-xix 2-xx	Increase information as discussed with the NRC.	Add tables: 2.7-129, 2.7-130, 2.7-131, 2.7-132, 2.7-133, 2.7-134, 2.7-135	1
LU-05	2.2.1.1	2.2-1	Erratum	Revise paragraph to clarify mineral rights.	1
LU-01	2.2.2	2.2-5	Increase information as discussed with the NRC.	Insert sentence and add “CDP” to Pecan Plantation to clarify Pecan Plantation is a housing development and not an	1

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
				incorporated town.	
LU-11	2.2.2	2.2-5	Increase information as discussed with the NRC.	Insert sentence to clarify zoning along Lake Granbury.	1
LU-09	2.2.3	2.2-6	Increase information as discussed with the NRC.	Revised text to include information on Proctor Lake and adjust numbers accordingly.	1
LU-08	Figure 2.2-3		Increase information as discussed with the NRC.	Show location of state parks.	1
SOC-11	2.5.2.7.2.1	2.5-18	Increase information as discussed with the NRC.	Updated with current information and revised text to discuss public safety and medical services for Hood and Somervell counties.	1
SOC-11	2.5.2.7.2.1	2.5-19	Erratum	Update reference (The Nursing Home Project 2006) to (The Nursing Home Project 2006a).	1
SOC-11	2.5.2.7.2.2	2.5-19	Erratum	Update reference citation from TDPS 2004 to TDPS 2006	1
SOC-11	2.5.2.7.2.3	2.5-19	Increase information as discussed with the NRC.	Add new subsections to discuss Bosque, Erath, Johnson, and Tarrant counties public safety and medical services.	1
SOC-11	2.5.2.7.2.3	2.5-19	Increase information as discussed with the NRC.	Updated with current information and revised text to discuss public safety and medical services for Hood and Somervell counties. Update reference citation from TDPS 2004 to TDPS 2006	1
CR-04	2.5.3.6	2.5-25	Increase information as discussed with the NRC.	New subsection to include background for 2.5.3.	1
CR-04	2.5.6	2.5-29	Increase information as discussed with the NRC.	Add 13 new reference notations that are cited in the new Subsection 2.5.3.6.	1

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
SOC-13	2.5.4.4	2.5-28	Increase information as discussed with the NRC.	Revised Subsection to include information on subsistence populations.	1
SOC-11	2.5.6	2.5-32	Increase information as discussed with the NRC.	Update reference notation from (The Nursing Home Project 2006) to (The Nursing Home Project 2006a)	1
SOC-11	2.5.6	2.5-34	Increase information as discussed with the NRC.	Update reference notation from (TDPS 2004) information to (TDPS 2006) information.	1
SOC-11	2.5.6	2.5-36	Increase information as discussed with the NRC.	Revised to include 11 new reference notations.	1
MET-03	2.7.1.2.4	2.7-11	Erratum	Add “16” to number of day each year and “by county” to wind events to reconcile thunderstorm information.	1
MET-04	2.7.1.2.8	2.7-17	Erratum	Add “the” in front of “Dallas Fort Worth and Airport” after “Fort Worth” to correct the reference to Forth Worth Airport.	1
MET-13	2.7.2.1.2	2.7-19 and 2.7-23	Erratum	Replaced 2001 – 2006 with 2001 – 2004 and 2006 to describe which data years were used.	1
MET-04	2.7.2.1.4	2.7-23	Erratum	Add “Dallas” in front of Fort Worth Airport to correct the reference to Forth Worth Airport.	1
MET-11	2.7.2.1.7	2.7-25	Erratum	Change Table 2.7-34 to Table 2.3-23 to correct reference to the table.	1
MET-13	2.7.3.1	2.7-28	Erratum	Replaced 2001 – 2006 with 2001 – 2004 and 2006 to describe which data years were used.	1

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
MET-12	2.7.3.1	2.7-28	Erratum	Remove “control room” and replace with “low population zone” to correct reference to control room.	1
MET-13	2.7.3.2 And 2.7.4.2	2.7-30 and 2.7-31	Erratum	Replaced 2001 – 2006 with 2001 – 2004 and 2006 to describe which data years were used.	1
MET-14	2.7.4.3	2.7-33	Increase information as discussed with the NRC.	Insert new Subsection to include evaporate pond results.	1
MET-03	Table 2.7-11	2.7-68	Erratum	Change numbers in average per year (#/yr)	1
MET-13	Table 2.7-11	2.7-68	Erratum	Replaced 2006 with 7/31/2006 to describe which data years were used.	1
MET-13	Table 2.7-85	2.7-68	Erratum	Replaced 2001 – 2006 with 2001 – 2004 and 2006 to describe which data years were used.	1
MET-04	Table 2.7-86	2.7-150	Erratum	Add “Dallas” in front of “Fort Worth Airport” to correct the reference to Forth Worth Airport.	1
MET-04	Table 2.7-96	2.7-162	Erratum	Add “Dallas” in front of Fort Worth and “Airport” after “Fort Worth” to correct the reference to Forth Worth Airport.	1
MET-04	Table 2.7-99	2.7-165	Erratum	Add “Dallas” in front of “Fort Worth Airport” to correct the reference to Forth Worth Airport.	1
MET-14	Table 2.7-129 through Table 2.7-135		Increase information as discussed with the NRC.	Add Tables 2.7-129, 2.7-130, 2.7-131, 2.7-132, 2.7-133, 2.7-134, and 2.7-135.	1

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
SOC-07	List of Tables	2-xi	Increase information as discussed with the NRC.	Changed the Title of Table 2.5-16 from “Hood and Somervell County 2002 and 2007 Property Taxes” to “Economic Region 2002 and 2007 Property Taxes”	2
SOC-06	2.5.2.1	2.5-8	Editorial Correction	Removed “counties” Changed Table 5.8-1 to 5.8-2.	2
SOC-06 SOC-03	2.5.2.1	2.5-10	Errata	Changed number of workers from “4300” to “4953” and from “550” to “494”	2
SOC-07	2.5.2.3.1	2.5-13	Editorial Correction	Changed “Hood and Somervell” to “the cities and” and added “in the economic region”	2
SOC-07	2.5.2.3.1	2.5-13	Increase information as discussed with the NRC.	Revised discussion in subsection to discuss the state and local taxes associated with the proposed units.	2
SOC-07	2.5.6	2.5-31	Editorial correction	Revised reference from (Combs 2007) to (Combs 2007a). Added reference (Combs 2009).	2
SOC-07	2.5.6	2.5-35 2.5-31	Increase information as discussed with the NRC.	Removed reference notation for (Combs 2006). Added two new reference notations as a result of the revisions to subsection 2.5.2.3.1.	2
SOC-07	Table 2.5-16	2.5-64	Increase information as discussed with the NRC.	Revised table to increase information for local taxes.	2
LU-03	List of Tables	2-vii	Increase information as discussed with the NRC.	Added Table 2.2-5.	3
NP-15	List of Tables	2-xii	Increase information as discussed with the NRC.	Added Tables 2.5-28 and 2.5-29.	3

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LU-03	2.2.2	2.2-5	Increase information as discussed with the NRC.	Added a sentence to refer the reader to Table 2.2-5 for land use acreages in the pipeline right of way.	3
LU-03	Table 2.2-5	--	Increased information as discussed with the NRC.	Added Land Use Table 2.2-5 to provide pipeline land use information.	3
SOC-01 SOC-08	2.5.2.2.3	2.5-11	Increase information as discussed with the NRC.	Revised subsection to provide updated traffic information.	3
NP-15	2.5.2.3.1	2.5-13	Increase information as discussed with the NRC.	Revised subsection to discuss estimates of wages paid.	3
SOC-09	2.5.2.5	2.5-15	Increase information as discussed with the NRC.	Added sentence to discuss the proposed new recreational area at Wheeler Branch reservoir.	3
SOC-09	2.5.2.5	2.5-15	Increase information as discussed with the NRC.	Revised sentence to clarify that light pollution in the area has been lessened by CPNPP efforts to improve the aesthetics of the area.	3
SOC-09	2.5.2.6	2.5-15	Increase information as discussed with the NRC.	Revised reference to Table 5.8-1 to Table 5.8-2.	3
SOC-09	2.5.2.6	2.5-16	Increase information as discussed with the NRC	Changed “10” percent to “9.5” percent.	3
SOC-09	2.5.2.6	2.5-16	Increased information as discussed with the NRC.	Revised subsection to clarify housing information.	3
SOC-09	2.5.2.6	2.5-17	Increase information as discussed with the NRC.	Revised subsection to include additional information on RV Parks.	3

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
SOC-10	2.5.2.7.1	2.5-17 2.5-18	Increase information as discussed with the NRC	Revised subsection to reconcile inconsistencies between subsections 2.5 and 4.4.	3
SOC-12	2.5.2.8.2	2.5-20	Increased information as discussed with the NRC.	Revised subsection to clarify public education system in the vicinity of the proposed units.	3
SOC-12	2.5.2.8.3	2.5-20	Increased information as discussed with the NRC.	Added a new subsection "2.5.2.8.3 Counties in the Economic Region" to clarify public education system in the vicinity of the proposed units. Revised subsequent subsection number from "2.5.2.8.3" to "2.5.2.8.4" as a result.	3
NP-15	2.5.6	2.5-31	Increased information as discussed with the NRC.	Added two new reference notations as a result of the revisions to subsection 2.5.2.3.1.	3
SOC-10	2.5.6	2.5-30 2.5-31 2.5-33 2.5-36	Increased information as discussed with the NRC.	Added eight new reference notations as a result of the revisions in Subsection 2.5.2.7.1.	3
SOC-12	2.5.6	2.5-32	Increased information as discussed with the NRC.	Added seven new reference notations (Granbury ISD 2007) as a result of revisions in Subsection 2.5.2.8 and removed two reference notations as a result of the new references.	3
SOC-09	2.5.6	2.5-33 2.5-36	Increased information as discussed with the NRC.	Added 11 reference notations for revisions associated with this issue.	3
SOC-01 SOC-08	2.5.6	2.5-34	Increased information as discussed with the NRC.	Added new reference notation as a result of revisions to Subsection 2.5.2.2.3.	3
SOC-09	Table 2.5-18	2.5-66	Increased information as discussed with the NRC.	Revised number of housing units from "801" to "903."	3

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
SOC-10	Table 2.5-20	2.5-68 2.5-69 2.5-70	Errata	Added footnotes (a) and (b) to reconcilable inconsistencies between Subsection 2.5 and 4.4.	3
NP-15	Table 2.5-28 Table 2.5-29		Increased information as discussed with the NRC.	Added two new tables to summarize information provided in subsection 2.5.2.3.1.	3
CTS-00709	2.3.1.1.6	2.3-4	Errata	Revised number of littoral wetlands from “Fifty three” to “Forty-eight” and the cumulative area from “52.5” to “53” and the associated percentage from “0.66” to “less than one.”	4
CTS-00710	2.3.1.1.6	2.3-4	Provide a figure that depicts the streams discussed in the text.	Revised referenced figure from Figure 2.4-3 to Figure 4.3-1 to depict streams associated with wetlands.	4
CTS-00710	2.3.1.1.6	2.3-4	Errata	Revised sentence associated with the revised reference to Figure 4.3-1, and revised discussion from two littoral wetlands to one littoral wetland.	4
CTS-00469	2.3.2.2	2.3-39	Provide updated water use estimates per TXNB-08024.	Added description of “draft” 2006 TWDB postings.	4
CTS-00469	2.3.2.2.1	2.3-41	Provide updated water use estimates per TXNB-08024.	Added description of TWDB 2006 water use estimates for Somervell and Hood Counties, Texas.	4
CTS-00465	2.3.2.2.4	2.3-42	Reconcile ER circulating water system, makeup water, and blowdown from Lake Granbury, with MHI confirmed flow rates in FSAR.	Revised the estimated water withdrawal and consumptive use numbers to be consistent with the circulating water system description.	4

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00455	2.3.3.3.5	2.3-61	Editorial Correction	Added “no” following “Other than CPNPP Units 1 and 2,” to read: “Other than CPNPP Units 1 and 2, no ..”	4
CTS-00469	2.3.4	2.3-66	Provide updated water use estimates per TXNB-08024.	Added reference (TWDB 2009) to support the 2006 draft estimated water use values.	4
CTS-00465	Table 2.3-39	2.3-164	Reconcile ER circulating water system, makeup water, and blowdown from Lake Granbury, with MHI confirmed flow rates in FSAR.	Revised the estimated water discharge flow rate to Lake Granbury.	4
CTS-00711	Figure 2.4-2	--	Revise figure to depict streams.	Added streams to figure.	4
CTS-00709	2.4.1	2.4-3	Errata	Revised sentences to state “Neither species was audibly or visually identified during the April survey.”	4
CTS-00709	2.4.1.1.2	2.4-7	Errata	Changed “Fifty-three” to “Fourty-eight” and removed paragraph “The northwest wetland is approximately 0.5…”	4
CTS-00648	2.4.1.1.2	2.4-7	Erratum	Changed 0.25 to 0.78	4
RAI SOC-09	2.5.2.6	2.5-16	See Luminant letter TXNB-09027 dated 7/27/2009	Additional information requested in RAI.	-

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
RAI SOC-09	List of Tables	2-xii	See Luminant letter TXNB-09027 dated 7/27/2009	Added Table 2.5-30 to support additional information.	-
RAI SOC-09	Table 2.5-30	-	See Luminant letter TXNB-09027 dated 7/27/2009	Additional information requested in RAI.	-
RAI SOC-13	2.5.4.3	2.5-28	See Luminant letter TXNB-09027 dated 7/27/2009	Revised low-income census numbers.	-
RAI SOC-13	Table 2.5-24	2.5-85	See Luminant letter TXNB-09027 dated 7/27/2009	Revised low-income census numbers.	-
RAI AE-01	2.4.2.2	2.4-24	See Luminant letter TXNB-09027 dated 7/27/2009	Additional information requested in RAI.	-
RAI AE-01	2.4.3	2.4-34 2.4-35	See Luminant letter TXNB-09027 dated 7/27/2009	Additional information requested in RAI.	-
TE-07	2.4.1.1.4.1	2.4-15	See Luminant letter TXNB-09027 dated 7/27/2009	Additional information requested in RAI.	-

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
TE-07	2.4.3	2.4-29 2.4-39	See Luminant letter TXNB-09027 dated 7/27/2009	Additional references to support additional information requested in RAI.	-
TE-10	2.4.1.1.4.1 2.4.2.7	2.4-15 2.4-28	See Luminant letter TXNB-09027 dated 7/27/2009	Additional information requested in RAI.	-
TE-10	2.4.3	2.4-29 2.4-33	See Luminant letter TXNB-09027 dated 7/27/2009	Additional references to support additional information requested in RAI.	-
HYD-05 HYDSV-24	2.3.1.5.6	2.3-35	Hydrology Site Safety Visit and resulting changes to FSAR.	Revised discussion of alternative pathways to be consistent with the FSAR revisions made as a result of the hydrology site visit.	5
HYD-22 HYDSV-30	2.3.1.5.6	2.3-35 2.3-36	Hydrology Site Safety Visit and resulting changes to FSAR.	Revised discussion of alternative pathways to be consistent with the FSAR revisions made as a result of the hydrology site visit.	5
CTS-00464	2.3.2.3.2	2.3-44	Correction	Corrected the number of existing water wells identified on the CPNPP site and provided a clarifying statement on the well functions.	5
HYD-22 HYDSV-30	Table 2.3-31	2.3-140 2.3-141 2.3-142	Hydrology Site Safety Visit and resulting changes to FSAR.	Revised Table 2.3-31 to include data associated with the revised discussion of alternative pathways.	5
CTS-00464	Table 2.3-41	2.3-166	Correction	Updated Table 2.3-41 to list well locations and functions as discussed in Subsection 2.3.2.3.2	5
CTS-00716	2.1	2.1-1	Erratum	Revise the coordinates of the center of the reactors and the center point if the CPNPP units 3 and 4.	5

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00464	Figure 2.3-25	--	Correction	Updated figure to show well locations to match updated Table 2.3-41.	5

~~Due to variable subsurface conditions in the vicinity of CPNPP Units 3 and 4, two postulated groundwater pathway scenarios were evaluated for each reactor unit. Scenarios 1 and 2 show a conservative pathway by estimating a groundwater travel time from each reactor unit to SCR through the regolith/undifferentiated fill zone. Because the regolith/undifferentiated fill zone is expected to be removed during construction of Units 3 and 4, Scenarios 3 and 4 provide the likely characteristics of the post construction groundwater environment. With the removal of the regolith/undifferentiated fill zone, the groundwater pathway to SCR would be in the shallow bedrock zone. The groundwater flow paths use a conservative straight line flow path approach using the shortest distance from groundwater monitoring wells located nearest to each reactor centerline and the highest measured hydraulic conductivity from each soil or bedrock zone. A straight line flow path would be considered conservative as the actual groundwater pathways are expected to be tortuous, resulting in longer transport times, and hydraulic conductivities (Kh) of the fractures/joints would be (or are) expected to be lower than the highest measured on site. The straight line distance from Unit 3 to the SCR is 530 ft (Scenarios 1 and 2) and the straight line distance from Unit 4 to the SCR is 607 ft (Scenarios 3 and 4).~~ HYD-05 HYDSV-24

Based on the grain size distribution of the on-site soils (Fugro 2007a), the total porosity was determined by averaging the porosity range for sand, silt, and clay. The average total porosity of the on-site regolith/undifferentiated fill (soils) is assumed to be 0.45. To estimate the effective porosity of the on-site soils, the arithmetic mean of the effective porosities for fine grained sand, silt, and clay were averaged (ANL 1993). The average effective porosity of the on-site regolith/undifferentiated fill (Scenarios 1 and 2) is assumed to be 0.20. To calculate the travel time in the regolith/undifferentiated fill material from each of the units to SCR, the highest measured hydraulic conductivity of 5.00×10^{-4} cm/s was used.

The bedrock is comprised of limestone from the Glen Rose Formation. The shallow bedrock porosity values from geotechnical borings B-1007 and B-1029 were used to estimate the porosity in the vicinity of the Unit 3 Auxiliary Building A/B and groundwater monitoring well MW-1215b. The porosity values from geotechnical borings B-2000, B-2008, and B-2029 were used to estimate the porosity values in the vicinity of the Unit 4 A/B and groundwater monitoring well MW-1217b. HYD-05 HYDSV-24

The results of the geotechnical analysis performed at the CPNPP Units 3 and 4 site indicated that an average porosity of the shallow bedrock (limestone and shale) is 25.6 percent and the average total porosity of limestone is 11.9 percent. The Argonne National Laboratory publication, Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil, dated April 1993 (ANL 1993) references an arithmetic mean of the effective porosity for limestone of 14 percent. Consequently, the most conservative approach when determining velocity and travel time is to use the measured 11.9 percent porosity value which provides a higher calculated velocity through the shallow bedrock.

~~Using the shallow bedrock porosity values from geotechnical borings B-2000, B-2008, and B-2029 to estimate the porosity values in the vicinity of groundwater monitoring well MW-1217b (Unit 3) and the porosity values from geotechnical borings B-1007 and B-1029 to estimate the porosity in the vicinity of groundwater monitoring well MW-1215b (Unit 4), an average total porosity of the shallow bedrock in the vicinity of CPNPP Units 3 and 4 of 0.24 is assumed (Fugro 2007a). The effective porosity of limestone (Scenarios 3 and 4) is assumed to be 0.14 (ANL~~

~~1993). To calculate the travel time in the shallow bedrock from each of the units to SCR the highest measured hydraulic conductivity of 1.37 X 10^{-5} cm/s was used.~~

HYD-05
HYDSV-24

Groundwater pathways are considered from the Units 3 and 4 Auxiliary Buildings, where the Boric Acid Tank (BAT) is located, to SCR, which is the nearest potential receptor. Postulated groundwater pathway scenarios include, Unit 3 A/B to SCR through the regolith and the undifferentiated fill; Unit 3 A/B to SCR through the Glen Rose Limestone; Unit 4 A/B to SCR through the undifferentiated fill and regolith; and Unit 4 A/B to SCR through the Glen Rose Limestone. Due to the planned removal of all overburden material down to the plant grade elevation of 822-ft, and the sub-grade elevation of the BAT of 793 ft, the pathway scenarios through the undifferentiated fill and regolith are considered not plausible and are not discussed further. For the post construction groundwater pathways the two remaining pathway scenarios, Unit 3 A/B to SCR through the Glen Rose Limestone and Unit 4 A/B to SCR through the Glen Rose Limestone, are considered to represent the most conservative pathways from a two reactor site where groundwater flow is possible in different directions from each unit. Using the most conservative straight line approach, two flow paths are considered from Unit 3 A/B to SCR and two flow paths are considered from Unit 4 A/B to SCR. These flow paths consider the most plausible straight line groundwater flow direction from the release points to SCR and the highest measured Hydraulic Conductivity (Kh). A straight line flow path would be considered the most conservative as the actual groundwater pathways are expected to be tortuous, resulting in longer transport times, and Kh of the fractures/joints would be (or are) expected to be lower than the highest measured on-site.

HYD-22
HYDSV-30

To estimate groundwater travel time through the Glen Rose Formation, the average porosity of limestone of 0.119, the highest Kh measured at the site (1.37 X 10-5 cm/s), and the steepest hydraulic gradient measured from the monthly gauging events of the nearest groundwater monitoring wells to the Unit 3 and 4 Reactor Buildings (Table 2.3-30) were used for the pathway analysis (FSAR Figure 2.4.12-212).

For groundwater pathway 3a, it is assumed that an instantaneous release from the BAT would travel out of the Unit 3 A/B northeast towards SCR where it would encounter a minimum of 100 lateral feet of Glen Rose Formation followed by the fill material of the Unit 3 Ultimate Heat Sink (UHS) and then by post construction engineered fill material before reaching SCR. Since the physical properties of the engineered fill material may change as the design is finalized and the potential exists for groundwater flow through the fill material of the Unit 3 UHS, it is conservatively estimated that an instantaneous release to SCR will occur once the Unit 3 UHS is encountered. The travel time from the Unit 3 A/B through a minimum of 100 feet of Glen Rose Formation to the Unit 3 UHS is 3146 days. Therefore, a very conservative estimate of the time it would take a release to travel from the Unit 3 A/B to SCR along pathway 3a is more than 3146 days.

For groundwater pathway 3b, it is assumed that an instantaneous release from the BAT would travel out of the Unit 3 A/B through the fill material of the Unit 3 Reactor Building (R/B) due east towards SCR where it would encounter a minimum of 80 lateral feet of Glen Rose Formation followed by the fill material of the Unit 3 Essential Service Water (ESW) Pipe Tunnel and an undetermined lateral distance of Glen Rose Formation followed by post construction engineered fill and undifferentiated fill material before reaching SCR. Since the physical properties of the engineered fill material may change as the design is finalized and the physical properties of the

undifferentiated fill material are estimated, and the potential exists for groundwater flow through the fill material of the Unit 3 ESW Pipe Tunnel, it is conservatively estimated that an instantaneous release to SCR will occur once the ESW Pipe Tunnel is encountered. The travel time from the Unit 3 A/B and R/B through a minimum of 80 feet of Glen Rose Formation to the Unit 3 ESW Pipe Tunnel is 2516 days. Therefore, a very conservative estimate of the time it would take a release to travel from the Unit 3 A/B to SCR along pathway 3b is more than 2516 days. HYD-22 HYDSV-30

For groundwater pathway 4a, it is assumed that an instantaneous release from the BAT would travel out of the Unit 4 A/B north-northwest towards SCR where it would encounter a minimum of 60 lateral feet of Glen Rose Formation followed by the fill material of the Unit 4 UHS and then by post construction engineered fill material before reaching SCR. Since the physical properties of the engineered fill material may change as the design is finalized and the potential exists for groundwater flow through the fill material of the Unit 4 UHS, it is conservatively estimated that an instantaneous release to SCR will occur once the Unit 4 UHS is encountered. The travel time from the Unit 4 A/B through a minimum of 60 feet of Glen Rose Formation to the Unit 4 UHS is 1916 days. Therefore, a very conservative estimate of the time it would take a release to travel from the Unit 4 A/B to SCR along pathway 4a is more than 1916 days.

For groundwater pathway 4b, it is assumed that an instantaneous release from the BAT would travel out of the Unit 4 A/B northeast towards SCR where it would encounter a minimum of 120 lateral feet of Glen Rose Formation followed by the fill material of the Unit 4 UHS and undocumented fill and engineered fill before reaching SCR. Since the physical properties of the undocumented fill are estimated and the physical properties of the engineered fill material may change as the design is finalized, and the potential exists for groundwater flow through the fill material of the Unit 4 UHS and through the undocumented fill, it is conservatively estimated that an instantaneous release to SCR will occur once the Unit 4 UHS is encountered. The travel time from the Unit 4 A/B through a minimum of 100 feet of Glen Rose Formation to the Unit 4 UHS is 3834 days. Therefore, a very conservative estimate of the time it would take a release to travel from the Unit 4 A/B to SCR along pathway 4b is more than 3834 days.

~~Scenario 1~~

~~Scenario 1 estimates the groundwater travel time between CPNPP Unit 3 and SCR through the undifferentiated fill/regolith using groundwater levels from groundwater monitoring well MW-1217a, screened in the regolith/undifferentiated fill zone, and the surface water elevation of SCR. The steepest measured groundwater gradient within the undifferentiated fill material from Unit 3 to SCR was 0.104 ft/ft. Based on the average effective porosity of 0.20 and a hydraulic conductivity of 5.00 X 10^{-4} cm/s, the estimated groundwater travel time from Unit 3 to SCR in the regolith/undifferentiated fill zone is 720.9 days (approximately 2 years).~~

~~Scenario 2~~

~~Scenario 2 estimates the groundwater travel time between CPNPP Unit 3 and SCR using groundwater levels from groundwater monitoring well MW-1217b screened in the shallow bedrock zone, and the surface water elevation of SCR. The steepest measured groundwater gradient within the shallow bedrock zone from Unit 3 to SCR is 0.0974 ft/ft. Based on the average effective porosity of 0.14 and a hydraulic conductivity of 1.37 X 10^{-5} cm/s, the estimated~~

~~groundwater travel time from Unit 3 to the SCR in the shallow bedrock zone is 19,615.0 days (approximately 54 years).~~

HYD-22
HYDSV-30

~~Scenario 3~~

~~Scenario 3 estimates the groundwater travel time between CPNPP Unit 4 and SCR through the undifferentiated fill/regolith using groundwater levels from groundwater monitoring well MW-1215a, screened in the regolith/undifferentiated fill zone, and the surface water elevation of SCR. The steepest measured gradient for the regolith undifferentiated fill material from Unit 4 to SCR was 0.109 ft/ft. Based on an average effective porosity of 0.20 and a hydraulic conductivity of 5.00 X 10^{-4} cm/s, the estimated groundwater travel time from Unit 4 to SCR in the regolith/undifferentiated fill zone is 782.6 days (approximately 2 years).~~

~~Scenario 4~~

~~Scenario 4 estimates the groundwater travel time between CPNPP Unit 4 and SCR through the shallow bedrock using groundwater levels from groundwater monitoring well MW-1215b screened in the shallow bedrock zone, and the surface water elevation of SCR. The steepest measured gradient for the shallow bedrock zone from Unit 4 to SCR was 0.0962 ft/ft. Based on an average effective porosity of 0.14 and a hydraulic conductivity of 1.37 X 10^{-5} cm/s the estimated groundwater travel time from Unit 4 to the SCR in the shallow bedrock zone is 22,737.6 days (approximately 62 years).~~

Table 2.3-31 provides the calculated travel times based on monthly measured gradients. The locations of Units 3 and 4 and groundwater monitoring wells MW-1215a, MW-1215b, MW-1217a, and MW-1217b are shown on Figure 2.3-26. Additional information on groundwater flow characteristics are provided in CPNPP Units 3 and 4 FSAR Subsection 2.4.12.

2.3.1.5.7 Surface Soil Profiles

The site is underlain by a sedimentary rock sequence which, at the surface, has been weathered to a clayey, silty, sandy overburden soil with some rock fragments. No alluvium sediments were encountered during the 2006 and 2007 geotechnical drilling program in the vicinity of the CPNPP Units 3 and 4 build area, although they may exist in other portions of the site. Drilling and excavation experience at the site shows that the residual soil transition through weathered rock to hard, unweathered bedrock can be gradual in the natural shallow subsurface profile in some places, or can consist of soil in direct contact with hard bedrock in other places. Most of the CPNPP site is situated in areas disturbed by previous construction activities associated with the construction of the existing CPNPP Units 1 and 2 structures. Those areas are covered with undifferentiated and engineered fill, gravel roadways and parking areas, and concrete building foundation pads.

The soils occurring on the CPNPP site are described in the Hood and Somervell counties soil survey information provided by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's on-line Soil Data Mart website (USDA 2007). A total of 18 soil mapping phases representing 17 soil series occur within the CPPNP site boundary. Descriptions of each soil series are provided in Table 2.3-32, and the location of the soil mapping phases are shown on Figure 2.3-28.

2.3.2.3.1 Local Groundwater Use

Groundwater use information for Hood and Somervell counties was obtained from the TWDB historical water use database (TWDB 2008a). The 2003 data set provides the most recent complete data for groundwater withdrawal from the Trinity Aquifer.

The estimated 2003 groundwater withdrawal in Hood County is 5729 ac-ft, which is approximately 3.33 percent of the total withdrawals from the Trinity aquifer. Approximately 91 percent of this withdrawal was reported as municipal use, 5 percent livestock use, 3 percent mining use, and less than 1 percent steam electric use.

The estimated 2003 groundwater withdrawal in Somervell County is 1726 ac-ft, which is approximately 1 percent of the total withdrawals from the Trinity aquifer. Approximately 55 percent of this withdrawal was reported as municipal use, 41 percent mining use, 2 percent steam electric use, 2 percent livestock use, and less than 1 percent manufacturing use. Table 2.3-40 shows 2003 groundwater withdrawals by use category for Hood and Somervell counties.

2.3.2.3.2 Plant Groundwater Use

~~Eleven~~Twelve existing water wells were identified on the CPNPP site. ~~The wells include seven potable water wells that support CPNPP Units 1 and 2 operations and four observation wells.~~The wells include seven active potable water wells that support CPNPP Units 1 and 2 operations, one inactive potable water well associated with Squaw Creek Park, and four observation wells. Information regarding these wells is provided in Table 2.3-41, and the well locations are shown on Figure 2.3-25. On-site groundwater withdrawal information for 2006 was obtained from an annual report provided by Luminant (TCEQ 2006). The report indicates on-site withdrawals of 27.90 ac-ft (9,092,700 gal) from five active wells in 2006 which is a use rate of 24,911.5 gpd or approximately 17.3 gpm. Monthly use data for 2006 are provided in Table 2.3-42. Luminant is not anticipating using groundwater as an operational or safety-related source of water for CPNPP Units 3 and 4, and has implemented a conservation plan for future groundwater withdrawals at the CPNPP site. During construction of CPNPP Units 3 and 4, and during operation of CPNPP Units 1 through 4, potable water is planned to be supplied by the Somervell County Water District's water supply system. Water for temporary fire protection, concrete batching, and other construction uses is expected to be supplied by the Somervell County Water District. Groundwater conservation at CPNPP has voluntarily been an environmental commitment with the TCEQ, Clean Texas Program, since 2003 and with the EPA Performance Track Program since 2005. CPNPP has reduced groundwater use from approximately 50 gpm in mid-1990s to approximately 16 gpm during 2007. CTS-00464

2.3.2.4 Future Water Use

Future consumptive water use information was obtained from the 2006 Brazos Region G Water Plan, which forecasts water demands by category for the years 2010 – 2060 (Brazos G 2006). The water demand estimates compiled for each type of water use do not specify future ground or surface water demand. Estimated demand surpluses or shortages are based on projected surface and groundwater supplies. Additionally, projections for non-consumptive water uses, such as navigation, hydroelectric generation, environmental flows, and recreation are not presented. As shown in Table 2.3-43, total water use for the region is projected to increase from

TABLE 2.3-31 (Sheet 1 of 3)
GROUNDWATER VELOCITY AND TRAVEL TIMES

HYD-22
HYDSV-30

~~***Scenario 1 (Unit 3/MW 1217a to SCR)***~~												
~~**Date**~~	~~**12/27**~~	~~**1/23**~~	~~**2/20**~~	~~**3/19**~~	~~**4/10**~~	~~**5/16**~~	~~**6/13**~~	~~**7/16**~~	~~**8/13**~~	~~**9/13**~~	~~**10/16**~~	~~**11/15**~~
~~**MW-1217a (ft msl)**~~	~~829.52~~	~~829.45~~	~~829.45~~	~~829.45~~	~~829.45~~	~~829.45~~	~~829.44~~	~~830.31~~	~~829.70~~	~~829.57~~	~~829.54~~	~~829.54~~
~~**SCR (ft msl)**~~	~~775.23~~	~~775.42~~	~~775.19~~	~~775.00~~ [(a)]	~~775.36~~	~~775.39~~	~~775.31~~	~~775.33~~	~~775.40~~	~~775.46~~	~~775.48~~	~~775.38~~
~~**Hydraulic Gradient**~~	~~0.1020~~	~~0.1020~~	~~0.1020~~	~~0.1030~~	~~0.1020~~	~~0.1020~~	~~0.1020~~	~~0.1040~~	~~0.1020~~	~~0.1020~~	~~0.1020~~	~~0.1020~~
~~**Velocity (V) (ft/day)**~~	~~0.7260~~	~~0.7230~~	~~0.7260~~	~~0.7280~~	~~0.7230~~	~~0.7230~~	~~0.7240~~	~~0.7350~~	~~0.7260~~	~~0.7240~~	~~0.7230~~	~~0.7240~~
~~**Travel Time (T) (days)**~~	~~730.0~~	~~733.5~~	~~730.4~~	~~727.9~~	~~732.7~~	~~733.1~~	~~732.2~~	~~720.9~~	~~729.9~~	~~732.5~~	~~733.1~~	~~731.8~~
~~***Scenario 2 (Unit 3/MW 1217b to SCR)***~~												
~~**Date**~~	~~**12/27**~~	~~**1/23**~~	~~**2/20**~~	~~**3/19**~~	~~**4/10**~~	~~**5/16**~~	~~**6/13**~~	~~**7/16**~~	~~**8/13**~~	~~**9/13**~~	~~**10/16**~~	~~**11/15**~~
~~**MW-1217b (ft msl)**~~	~~810.94~~	~~820.76~~	~~824.72~~	~~825.06~~	~~823.82~~	~~820.08~~	~~820.38~~	~~821.13~~	~~822.28~~	~~823.83~~	~~825.64~~	~~827.00~~
~~**SCR (ft msl)**~~	~~775.23~~	~~775.42~~	~~775.19~~	~~775.00~~ [(a)]	~~775.36~~	~~775.39~~	~~775.31~~	~~775.33~~	~~775.40~~	~~775.46~~	~~775.48~~	~~775.38~~
~~**Hydraulic Gradient**~~	~~0.0674~~	~~0.0855~~	~~0.0935~~	~~0.0945~~	~~0.0914~~	~~0.0843~~	~~0.0850~~	~~0.0864~~	~~0.0885~~	~~0.0913~~	~~0.0946~~	~~0.0974~~
~~**Velocity (V) (ft/day)**~~	~~0.0187~~	~~0.0237~~	~~0.0259~~	~~0.0262~~	~~0.0254~~	~~0.0234~~	~~0.0236~~	~~0.0240~~	~~0.0245~~	~~0.0253~~	~~0.0263~~	~~0.0270~~
~~**Travel Time (T) (days)**~~	~~28,354.1~~	~~22,331.8~~	~~20,442.7~~	~~20,226.2~~	~~20,894.1~~	~~22,656.7~~	~~22,465.6~~	~~22,107.6~~	~~21,598.2~~	~~20,932.9~~	~~20,185.9~~	~~19,615.0~~
~~***Scenario 3 (Unit 4/MW 1215a to SCR)***~~												
~~**Date**~~	~~**12/27**~~	~~**1/23**~~	~~**2/20**~~	~~**3/19**~~	~~**4/10**~~	~~**5/16**~~	~~**6/13**~~	~~**7/16**~~	~~**8/13**~~	~~**9/13**~~	~~**10/16**~~	~~**11/15**~~
~~**MW-1215a (ft msl)**~~	~~833.79~~	~~835.25~~	~~8325.93~~	~~836.21~~	~~837.27~~	~~837.26~~	~~839.70~~	~~841.18~~	~~841.41~~	~~841.89~~	~~841.81~~	~~841.42~~
~~**SCR (ft msl)**~~	~~775.23~~	~~775.42~~	~~775.19~~	~~775.00~~ [(a)]	~~775.36~~	~~775.39~~	~~775.31~~	~~775.33~~	~~775.40~~	~~775.46~~	~~775.48~~	~~775.38~~
~~**Hydraulic Gradient**~~	~~0.0965~~	~~0.0986~~	~~0.1000~~	~~0.1010~~	~~0.1020~~	~~0.1020~~	~~0.1060~~	~~0.1080~~	~~0.1090~~	~~0.1090~~	~~0.1090~~	~~0.1090~~
~~**Velocity (V) (ft/day)**~~	~~0.6840~~	~~0.6990~~	~~0.7090~~	~~0.7150~~	~~0.7230~~	~~0.7220~~	~~0.7520~~	~~0.7690~~	~~0.7710~~	~~0.7760~~	~~0.7740~~	~~0.7710~~
~~**Travel Time (T) (days)**~~	~~887.7~~	~~868.9~~	~~855.9~~	~~849.3~~	~~839.7~~	~~840.2~~	~~807.4~~	~~789.5~~	~~787.5~~	~~782.6~~	~~783.7~~	~~787.2~~

TABLE 2.3-31 (Sheet 2 of 3)
GROUNDWATER VELOCITY AND TRAVEL TIMES

HYD-22
HYDSV-30

~~Scenario 4 (Unit 4/MW-1215b to SCR)~~												
~~Date~~	~~12/27~~	~~1/23~~	~~2/20~~	~~3/19~~	~~4/10~~	~~5/16~~	~~6/13~~	~~7/16~~	~~8/13~~	~~9/13~~	~~10/16~~	~~11/15~~
~~MW-1215b (ft msl)~~	~~831.35~~	~~831.27~~	~~831.64~~	~~831.60~~	~~832.10~~	~~831.80~~	~~832.91~~	~~833.74~~	~~833.55~~	~~833.54~~	~~833.84~~	~~833.12~~
~~SCR (ft msl)~~	~~775.23~~	~~775.42~~	~~775.19~~	~~775.00~~ [(a)]	~~775.36~~	~~775.39~~	~~775.31~~	~~775.33~~	~~775.40~~	~~775.46~~	~~775.48~~	~~775.38~~
~~Hydraulic Gradient~~	~~0.0925~~	~~0.0920~~	~~0.0930~~	~~0.0932~~	~~0.0935~~	~~0.0929~~	~~0.0949~~	~~0.0962~~	~~0.0958~~	~~0.0957~~	~~0.0961~~	~~0.0961~~
~~Velocity (V) (ft/day)~~	~~0.0256~~	~~0.0255~~	~~0.0258~~	~~0.0259~~	~~0.0259~~	~~0.0258~~	~~0.0263~~	~~0.0267~~	~~0.0266~~	~~0.0265~~	~~0.0267~~	~~0.0264~~
~~Travel Time (T) (days)~~	~~23,665.4~~	~~23,779.8~~	~~23,527.1~~	~~23,464.7~~	~~23,406.8~~	~~23,543.8~~	~~23,057.3~~	~~22,737.6~~	~~22,839.3~~	~~22,866.8~~	~~22,757.1~~	~~23,001.4~~

~~**Assumptions:**~~

~~**Scenario 1**~~

~~Hydraulic gradient is between Unit 3/MW-1217a and SCR~~

~~Pathway Distance (L) = 530 ft.~~

~~Hydraulic Conductivity (K) = 5.00×10^{-4} cm/s~~

~~porosity () = 0.20~~

~~**Scenario 2**~~

~~Hydraulic gradient is between Unit 3/MW-1217b and SCR~~

~~Pathway Distance (L) = 530 ft.~~

~~Hydraulic Conductivity (K) = 1.37×10^{-5} cm/s~~

~~porosity () = 0.14~~

~~**Scenario 3**~~

~~Hydraulic gradient is between Unit 4/MW-1215a and SCR~~

~~Pathway Distance (L) = 607 ft.~~

~~Hydraulic Conductivity (K) = 5.00×10^{-4} cm/s~~

~~porosity () = 0.20~~

TABLE 2.3-31 (Sheet 3 of 3)
GROUNDWATER VELOCITY AND TRAVEL TIMES

HYD-22
HYDSV-30

~~**Scenario 4**~~

~~Hydraulic gradient is between Unit 4/MW-1215b and SCR~~

~~Pathway Distance (L) = 607 ft.~~

~~Hydraulic Conductivity (K) = 1.37 x 10^{-5} cm/s~~

~~porosity () = 0.14~~

~~(a) 775.00 ft was used as surface water elevation for SCR on 3/19 as USGS elevation data was unavailable~~

~~Conversions: 1day = 86,400 seconds; 1 foot = 30.48 centimeters~~

HYD-22
HYDSV-30

Table 2.3-31 (Sheet 1 of 3)
Groundwater Velocity and Travel Times

Scenario 1, Pathway 3a (Unit 3/MW-1217a to SCR)

Date	12/27	1/23	2/20	3/19	4/10	5/16	6/13	7/16	8/13	9/13	10/16	11/15
MW-1217a (ft amsl)	810.94	820.76	824.72	825.06	823.82	820.08	820.38	821.13	822.28	823.83	825.64	827.00
SCR (ft amsl)	775.23	775.42	775.19	775.00 [(a)]	775.36	775.39	775.31	775.33	775.40	775.46	775.48	775.38
Hydraulic Gradient	0.0674	0.0855	0.0935	0.0945	0.0914	0.0843	0.0850	0.0864	0.0885	0.0913	0.0946	0.0974
Velocity (V) (ft/day)	0.0220	0.0279	0.0305	0.0308	0.0298	0.0275	0.0277	0.0282	0.0289	0.0298	0.0308	0.0318
Travel Time (T) (days)	4,550	3,587	3,280	3,246	3,356	3,638	3,608	3,550	3,466	3,359	3,242	3,149

Scenario 1, Pathway 3b (Unit 3/MW-1217b to SCR)

Date	12/27	1/23	2/20	3/19	4/10	5/16	6/13	7/16	8/13	9/13	10/16	11/15
MW-1217b (ft amsl)	810.94	820.76	824.72	825.06	823.82	820.08	820.38	821.13	822.28	823.83	825.64	827.00
SCR (ft amsl)	775.23	775.42	775.19	775.00 [(a)]	775.36	775.39	775.31	775.33	775.40	775.46	775.48	775.38
Hydraulic Gradient	0.0674	0.0855	0.0935	0.0945	0.0914	0.0843	0.0850	0.0864	0.0885	0.0913	0.0946	0.0974
Velocity (V) (ft/day)	0.0220	0.0279	0.0305	0.0308	0.0298	0.0275	0.0277	0.0282	0.0289	0.0298	0.0308	0.0318
Travel Time (T) (days)	3,640	2,870	2,624	2,596	2,684	2,911	2,887	2,840	2,772	2,687	2,594	2,519

Scenario 2, Pathway 4a (Unit 4/MW-1215a to SCR)

Date	12/27	1/23	2/20	3/19	4/10	5/16	6/13	7/16	8/13	9/13	10/16	11/15
MW-1215a (ft amsl)	831.35	831.27	831.64	831.60	832.10	831.80	832.91	833.74	833.55	833.54	833.84	833.12
SCR (ft amsl)	775.23	775.42	775.19	775.00 [(a)]	775.36	775.39	775.31	775.33	775.40	775.46	775.48	775.38
Hydraulic Gradient	0.0925	0.0920	0.0930	0.0932	0.0935	0.0929	0.0949	0.0962	0.0958	0.0957	0.0961	0.0961
Velocity (V) (ft/day)	0.0302	0.0300	0.0303	0.0304	0.0305	0.0303	0.0309	0.0314	0.0312	0.0312	0.0313	0.0313
Travel Time (T) (days)	1,989	2,000	1,979	1,974	1,968	1,981	1,939	1,913	1,921	1,923	1,915	1,915

HYD-22
HYDSV-30

Table 2.3-31 (Sheet 2 of 3)
Groundwater Velocity and Travel Times

Scenario 2, Pathway 4b (Unit 4/MW-1215b to SCR)

Date	12/27	1/23	2/20	3/19	4/10	5/16	6/13	7/16	8/13	9/13	10/16	11/15
MW-1215b (ft msl)	831.35	831.27	831.64	831.60	832.10	831.80	832.91	833.74	833.55	833.54	833.84	833.12
SCR (ft msl)	775.23	775.42	775.19	775.00 (a)	775.36	775.39	775.31	775.33	775.40	775.46	775.48	775.38
Hydraulic Gradient	0.0925	0.0920	0.0930	0.0932	0.0935	0.0929	0.0949	0.0962	0.0958	0.0957	0.0961	0.0961
Velocity (V) (ft/day)	0.0302	0.0300	0.0303	0.0304	0.0305	0.0303	0.0309	0.0314	0.0312	0.0312	0.0313	0.0313
Travel Time (T) (days)	3.979	4.000	3.957	3.949	3.936	3.962	3.878	3.826	3.842	3.846	3.830	3.830

Assumptions:

Scenario 1, Pathway 3a

The hydraulic gradient between MW-1217b and SCR is the nearest known hydraulic gradient to the Unit 3 A/B. The highest hydraulic gradient between MW-1217B and SCR was used for this pathway.

Pathway Distance (L) = 100 lateral feet of Glen Rose Formation

Hydraulic Conductivity (Kn) = 1.37 x 10-5 cm/s = 0.0388 ft/day

Porosity (n) = 0.119

Scenario 1, Pathway 3b

The hydraulic gradient between MW-1217b and SCR is the nearest known hydraulic gradient to the Unit 3 A/B. The highest hydraulic gradient between MW-1217B and SCR was used for this pathway.

Pathway Distance (L) = 80 lateral feet of Glen Rose Formation

Hydraulic Conductivity (Kn) = 1.37 x 10-5 cm/s = 0.0388 ft/day

Porosity (n) = 0.119

Scenario 2, Pathway 4a

The hydraulic gradient between MW-1215b and SCR is the nearest known hydraulic gradient to the Unit 4 A/B. The highest hydraulic gradient between MW-1215B and SCR was used for this pathway

Pathway Distance (L) = 60 lateral feet of Glen Rose Formation

Hydraulic Conductivity (Kn) = 1.37 x 10-5 cm/s = 0.0388 ft/day

Porosity (n) = 0.119

Table 2.3-31 (Sheet 3 of 3)
Groundwater Velocity and Travel Times

HYD-22
HYDSV-30

Scenario 2, Pathway 4b

The hydraulic gradient between MW-1215b and SCR is the nearest known hydraulic gradient to the Unit 4 A/B. The highest hydraulic gradient between MW-1215B and SCR was used for this pathway

Pathway Distance (L) = 120 lateral feet of Glen Rose Formation

Hydraulic Conductivity (Kη) = 1.37 x 10-5 cm/s = 0.0388 ft/day

Porosity (η) = 0.119

(a) - 775.00 ft was used as surface water elevation for SCR on 3/19 as USGS elevation data was unavailable

Conversions: 1day = 86,400 seconds; 1 foot = 30.48 centimeters

TABLE 2.3-41
GPNPP WATER WELL INFORMATION

CTS-00464

Well Number	Owner	Primary Use	Well Depth (ft)	Aquifer	Latitude	Longitude	County	Well Type
3242903	Texas Utilities	Not Used	479	Twin Mountains (Trinity)	321651	974623	Somervell	Observation
3242902	Texas Utilities	Not Used	318	Twin Mountains (Trinity)	321709	974513	Somervell	Observation
3242901	G. A. Jackson/ Texas Utilities	Public Supply	350	Twin Mountains (Trinity)	321714	974522	Somervell	Withdrawal of Water
3242601	Texas Utilities	Public Supply	466	Twin Mountains (Trinity)	321745	974723	Somervell	Withdrawal of Water
3242602	Texas Utilities	Public Supply	490	Twin Mountains (Trinity)	321751	974649	Somervell	Withdrawal of Water
3242502	JC Ice/Texas Utilities	Not Used	352	Twin Mountains (Trinity)	321807	974853	Hood	Observation
3242503	Texas Utilities	Public Supply	517	Twin Mountains (Trinity)	321802	974826	Somervell	Withdrawal of Water
32425	Texas Utilities	Public Supply	485	Twin Mountains (Trinity)	321713	974706	Somervell	Withdrawal of Water
3242504	Texas Utilities	Public Supply	400	Twin Mountains (Trinity)	321802	974822	Somervell	Withdrawal of Water
3242603	Texas Utilities	Public Supply	471	Twin Mountains (Trinity)	321858	974656	Somervell	Withdrawal of Water
3242604	Texas Utilities	Not Used	470	Twin Mountains (Trinity)	321910	974655	Hood	Observation

Source: (TWDB 2007c)

TABLE 2.3-41
CPNPP Water Well Information

CTS-00464

CPNPP Well ID	State Well Number	Location	Primary Use	Well Depth (ft)	Latitude	Longitude	Well Type
1	3242903	Ball Bark Road	Not Used	479	321651	974623	Observation
2	3242902	Training Center	Not Used	318	321707	974515	Observation
3	3242901	Training Center	Public Supply	350	321707	974516	Withdrawal of Water
4	3242601	Batch Plant	Public Supply	466	321748	974733	Withdrawal of Water
5	3242602	Met Tower	Public Supply	490	321750	974650	Withdrawal of Water
6	N/A	Plant Entrance	Not Used	>280(1)	321749	974859	Observation
7	3242503	NOSF - North	Public Supply	517	321760	974828	Withdrawal of Water
8	3242504	NOSF - South	Public Supply	400	321757	974826	Withdrawal of Water
9	3242603	Squaw Creek Park	Public Supply	471	321905	974659	Withdrawal of Water
10	3242604	Squaw Creeak Park	Not Used	470	321905	974660	Observation
11	N/A	Squaw Creek Park Office	Public Supply	Unknown(2)	321946	974648	Withdrawal of Water
12	N/A	Rifle Training Facility	Public Supply	485	321905	974659	Withdrawal of Water

Notes:

Onsite water wells are owned by Luminant and completed in the Twin Mountains (Trinity) Aquifer
(1) Total depth of well is unknown due to obstruction. Static water level has been measured at approximately 280 ft below top of casing.
(2) Inactive public supply well, total depth of well is unknown.
NOSF Nuclear Operations Support Facility
NA Not Assigned

2.1 STATION LOCATION

Luminant Generation Company LLC (Luminant) proposes to construct and operate two Mitsubishi Heavy Industries (MHI) US-APWR reactors (Units 3 and 4) at Luminant's CPNPP 7950-ac site located in rural Somervell and Hood counties, in north central Texas. Luminant is the applicant, owner, and operator of the new units. Current assets at this site include two Westinghouse 4-loop pressurized water reactor (PWR) units (CPNPP Units 1 and 2) and supporting infrastructures. The site plot plan is shown in Figure 2.1-1; regional and vicinity maps are shown as Figures 1.1-1, 1.1-2 and an aerial view as Figure 1.1-3.

The coordinates of the centers of the new reactors (Units 3 and 4) are:

LATITUDE AND LONGITUDE NAD83 (degrees/minutes/seconds)

	Latitude	Longitude
UNIT 3:	32° 18' 08.9" N	97° 47' 30.1" W
UNIT 4:	32° 18' 07.5" N	97° 47' 41.8" W

UNIVERSAL TRANSVERSE MERCATOR ZONE 14 NAD83 (Meters)

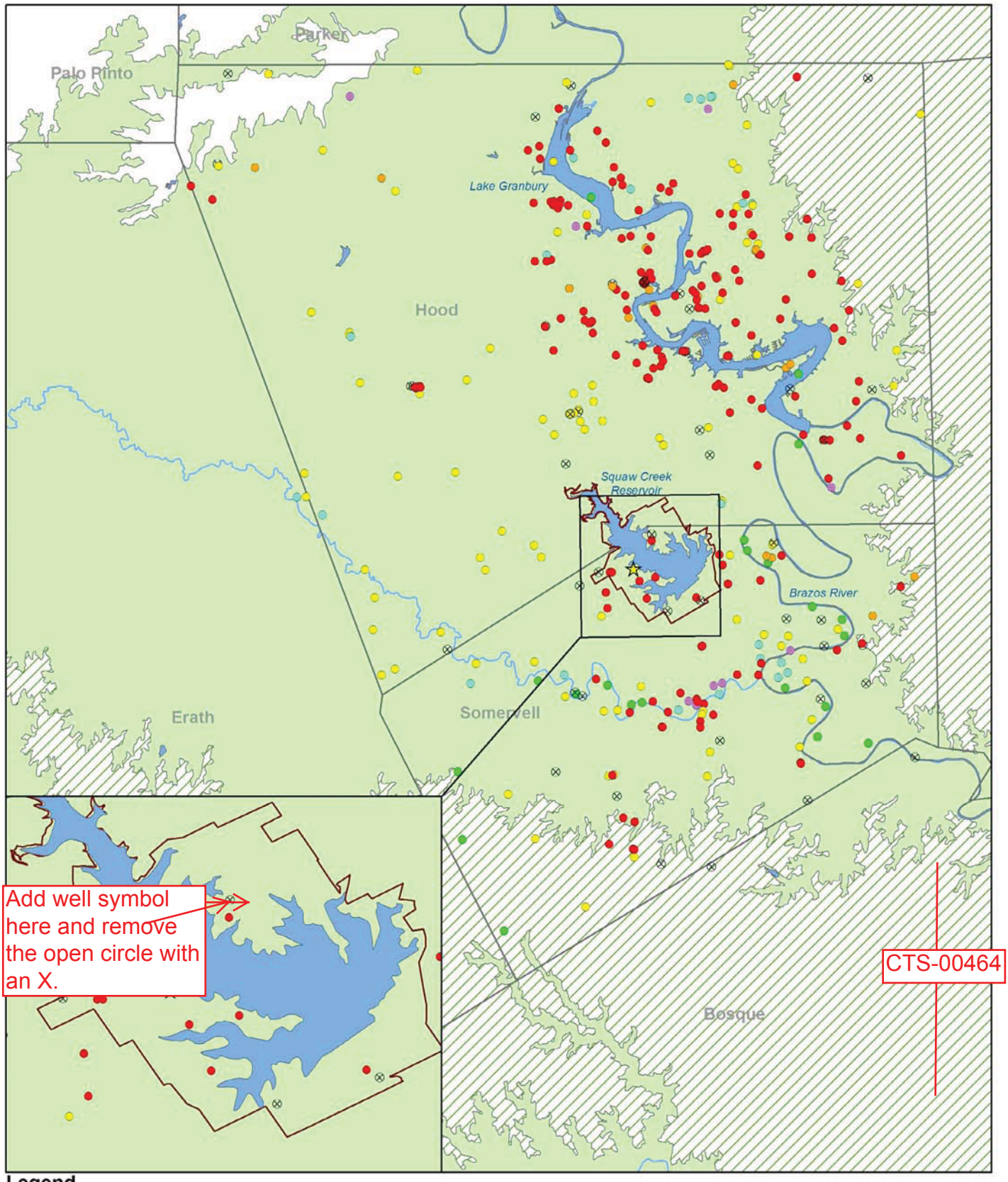
	Northing	Easting	
UNIT3:	~~613759~~3574606	~~3574606~~613759	CTS-00716
UNIT4:	~~613453~~3574559	~~3574559~~613453	CTS-00716

The center point of the CPNPP Units 3 and 4 site is located at ~~613606~~3574584N and ~~3574584~~613606E. CTS-00716

There are six population centers (as defined by 10 CFR 100.3) within 50 mi of the reactors: Fort Worth, population ~~624,067~~653,320; North Richland Hills, population ~~61,115~~62,306; Haltom City, population ~~39,875~~39,987; Mansfield, population ~~37,976~~41,564; Burleson, population ~~29,613~~31,660; ~~and~~ Cleburne, population ~~29,184~~29,689~~.~~; Watauga, population 23,685; Weatherford, population 24,630; and Benbrook with a puplation of 22,307. (US Census 2006) CTS-00611

The site is approximately 40 mi southwest of Fort Worth, Texas; 46 mi southwest of Haltom City; 32 mi west of Burleson; and 24 mi west of Cleburne. The nearest population center to the CPNPP site is Cleburne. The closest communities to the CPNPP center point are the cities of Glen Rose and Granbury. The site is 5.2 mi north of Glen Rose and 9.6 mi south of Granbury. Granbury is the largest city within a 10-mi radius of the CPNPP (USGS 2007 and US Census 200~~5~~6). CTS-00611

The property boundary of the CPNPP site encompasses approximately 7950 ac. The site is accessible by a rail spur, which connects to the Fort Worth and Western Railroad Company main line at Tolar, Texas, by a plant access road which connects to Farm to Market Road 56 (FM 56),



Hood and Somervell County Water Wells
FIGURE 2.3-25 Rev 0

COMANCHE PEAK NUCLEAR POWER PLANT
UNITS 3 AND 4

Chapter 3

Chapter 3 Tracking Report Revision List

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00615	Acronyms and Abbreviations	3-xix	Editorial correction	Change “MPT Main Power Transformer” to “MT Main Transformer”.	0
CTS-00452	3.3.1.1	3.3-2	Editorial correction	Change “average” to “estimated”.	0
CTS-00452	3.3.1.2	3.3-2	Editorial correction	Change “average” to “estimated”.	0
CTS-00452	3.3.1.3	3.3-3	Editorial correction	Change “average” to “estimated”.	0
CTS-00452	3.3.1.3	3.4-5	Editorial correction	Remove “monthly average”.	0
CTS-00660	3.4.2.1	3.4-6	Editorial correction	Add a sentence about passive screens of the intake system.	0
CTS-00495	Table 3.4-1	3.4-8	Editorial correction	Superscript the number to represent scientific notation as opposed to a whole number	0
CTS-00612	3.5.1.1.2	3.5-5	To reflect DCD terminology	Add “containment Vessel” before reactor so that it reads: containment vessel reactor coolant drain tank, and change the acronym (RCDT) to (CVDT)	0
CTS-00612	3.5.1.1.2	3.5-6	Erratum	Change the acronym (RCDT) to (CVDT)	0
CTS-00613	3.5.1.5	3.5-8	Editorial correction	Remove “gaseous or airborne” and add “liquid” after radioactive	0
CTS-00468	3.5.4	3.5-16	Erratum	Change “179 gpm” to “7 gpm”.	0

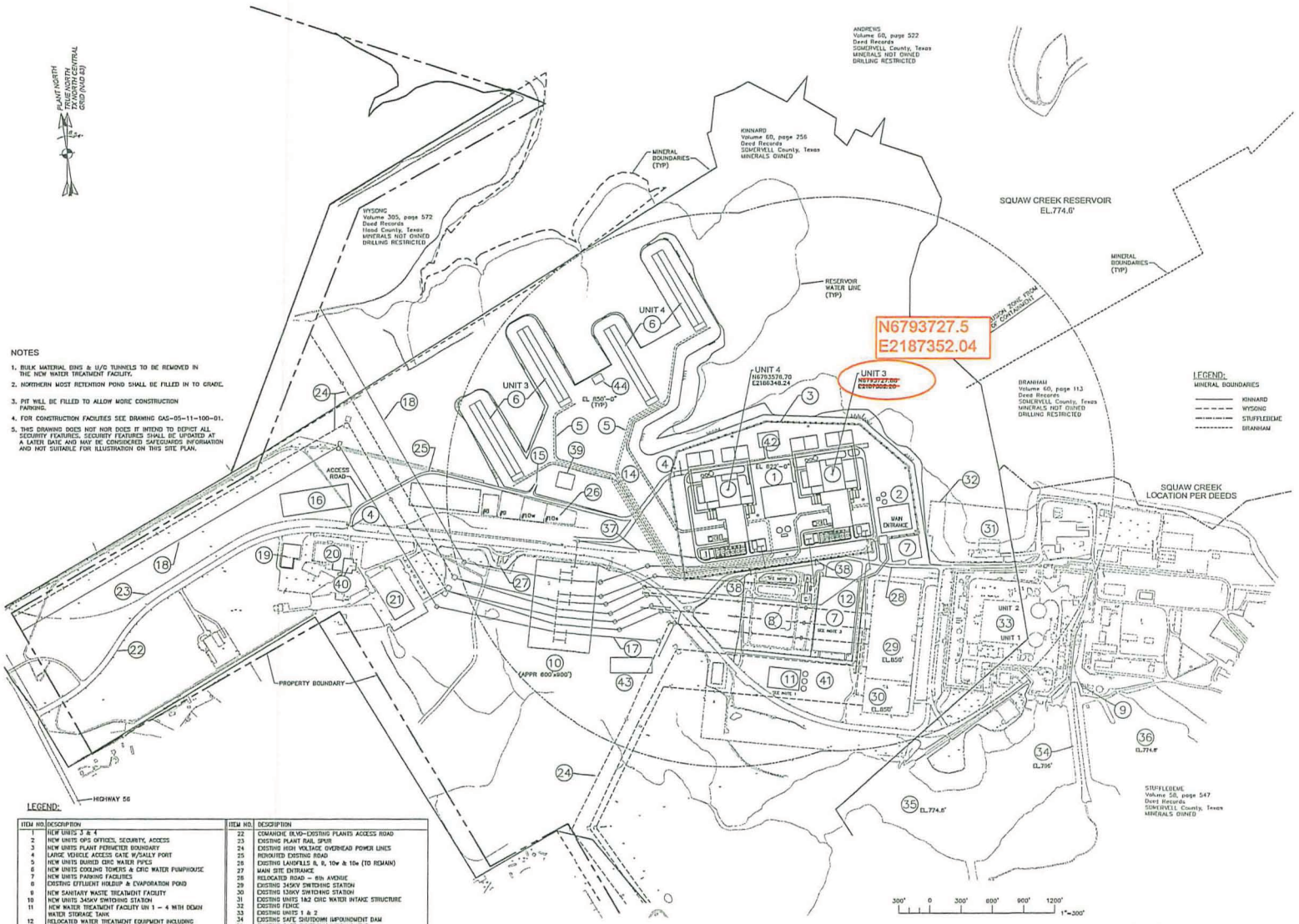
Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00614	3.5.4	3.5-16	Erratum	Change “119.79 gallons per hour (gal/hr)” to “approximately 2 gpm”.	0
CTS-00615	3.7.1	3.7-1	Editorial correction	Change “CPNPP Units 3 and 4 Switching Station (CPNPP Units 3 and 4 Switching Station)” to “Plant Switching Station”.	0
CTS-00649	3.7.1	3.7-1	Editorial correction	Change “plant switching station” to “Plant Switching Station”.	0
CTS-00615	3.7.2	3.7-2	Editorial correction	Change “CPNPP Units 3 and 4 Switching Station” to “Plant Switching Station”.	0
CTS-00615	3.7.2	3.7-2	Editorial correction	Change “Main Power Transformer (MPT)” to “Main Transformer (MT)”.	0
CTS-00616	3.7.2	3.7-3	Editorial correction	Change “MPT” to “MT”	0
CTS-00615	3.7.2	3.7-3	Editorial correction	Change “CPNPP Units 3 and 4 Switching Station” to “Plant Switching Station”.	0
CTS-00617	3.9.4	3.9-11	Erratum	Change “four” to “five”.	0
CTS-00617	3.9.4	3.9-11	Erratum	Change “94” to “74”.	0
CTS-00617	3.9.4	3.9-11	Erratum	Change “50” to “37”.	0
CTS-00618	3.9.4.1.1	3.9-12	Erratum	1st paragraph Change “five” to “four”. Change “three” to “one”. Change “three” to “one”. Change “304” to “309”.	0
CTS-00618	3.9.4.1.2	3.9-12	Erratum	Change area dimensions from “167” to “180”, and from “321” to “355”	0

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00618	3.9.4.1.2	3.9-12	Erratum	Change “three” to “four”.	0
CTS-00691	Table 3.8-4	3.8-14	Update the proprietary status of information	Remove “Withheld from Public Disclosure Under 10 CFR 2.390 (a) (4)” from the title. Remove “Note: Luminant considers the location of alternative site proprietary.”	1
TR-06	3.8.1.5	3.8-2	Increase information as discussed with the NRC.	Revised subsection to increase information for the decay heat.	3
LU-10	Figure 3.1-2	--	Increase information as discussed with the NRC.	Revised figure to show batch plant contained within the property boundaries.	3
TR-04	3.8.1.10	3.8-4	Increase information as discussed with the NRC.	Added new subsection 3.8.1.11 to discuss the decay heat. Changed subsequent subsection number “3.8.1.11”	3
TR-01	3.8.1.11	3.8-4	Increase information as discussed with the NRC.	Revised subsection to address inconsistency between assemblies per truck and per package for Subsection 3.8.1.11 and Table 3.8-1.	3
TR-07	3.8.2	3.8-8	Increase information as discussed with the NRC.	Added sentence to describe how many hours per km were used as stop time.	3
TR-01	Table 3.8-1	3.8-10	Errata	Revised table to agree with US-APWR and revised normalization factor numbers.	3
TR-03 TR-06	Table 3.8-2	3.8-11 3.8-12	Increase information as discussed with the NRC.	Added additional information to the table regarding shipments per day and applicability to Table S-4.	3
CTS-00701	Table 3.8-2	3.8-11	Editorial	Added commas to five digit numbers for readability.	3
TR-03	Table 3.8-3	3.8-12 3.8-13	Increase information as discussed with the NRC.	Revised to clarify number of shipments per day and applicability to Table S-4.	3

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00702	Table 3.8-3	3.8-13	Editorial	Added footnote designations	3
CTS-00700	Table 3.8-5	3.8-15 3.8-16	Editorial corrections	Provided formatting changes for readability. Replaced Alternative Site A, B and C with Luminant A – Coastal, Luminant B – Pineland, and Luminant C – Trading House, respectively.	3
TR-02	Table 3.8-5	3.8-15	Errata	Removed row item Min/Max radii of annular area around truck stop and revised information with regards to the stop time. Removed information from sheet 3 of 3.	3
TR-07	Table 3.8-7	3.8-19	Errata	Revised normalized average annual shipments from “1.5” to “3.4” and revised cumulative annual does, person-rem per reference reactor year.	3
CTS-00700	Table 3.8-7	3.8-19	Editorial corrections	Provided formatting changes for readability. Replaced Alternative Site A, B and C with Luminant A – Coastal, Luminant B – Pineland, and Luminant C – Trading House, respectively.	3
TR-02	Table 3.8-9	3.8-21	Errata	Revised Minimum and maximum row item information to cite the NUREG and to correct the parameter values.	3
LU-12	3.9.3.7	3.9-9	Increase information as discussed with the NRC.	Revised subsection to include information on the location of on site soil retention areas based on evaluation of certain selection criteria.	3
CTS-00465	Table 3.3-1	3.3-5	Reconcile ER circulating water system, makeup water, and blowdown from Lake Granbury, with MHI	Revised “Normal Flow per Unit” and Maximum Flow per Unit” numbers for the following items: Evaporation Rate”, Blowdown Rate, CWS Makeup Rate and Raw	4

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
			confirmed flow rates used in FSAR.	Water Rate, and Potable Water to be consistent with the updated water balance. Update raw water flow from 550 gpm to 1100 gpm cited in footnote “b” to be consistent with the circulating water system description. Add footnote “c).”	
CTS-00465	Figure 3.3-1	--	Reconcile ER circulating water system, makeup water, and blowdown from Lake Granbury, with MHI confirmed flow rates used in FSAR.	Revised “Flow at Max Power Operation” numbers for items 1, 2 and 3 to be consistent with the circulating water system description.	4
CTS-00465	3.4.1.4	3.4-5	Reconcile ER circulating water system, makeup water, and blowdown from Lake Granbury, with MHI confirmed flow rates used in FSAR.	Revised water volumes cited in the Makeup Water system discussion to be consistent with the circulating water system description.	4
CTS-00465	3.4.2.3	3.4-7	Reconcile ER circulating water system, makeup water, and blowdown from Lake Granbury, with MHI confirmed flow rates used in FSAR.	Revised water flow rates entering the cooling tower to be consistent with the circulating water system description. Revised temperature from 15.5 to 15.2.	4
CTS-00465	3.4.2.3	3.4-7	Erratum	Revised temperature from 15.5 to 15.2.	4
CTS-00712	3.4.2.3	3.4-7	Reconcile cooling tower heat dissipation capacity and fan power consumption values with the Ultimate Heat Sink System.	Revised the rated heat-dissipation capacity of each cooling tower from 3.27×10^8 Btu/hr to 1.96×10^8 Btu/hr; and revised the power consumption for each fan from 187 hP to 200 hP.	4
CTS-00465	Table 3.4-2	3.4-9	Reconcile ER circulating water system, makeup water, and blowdown from Lake	Revised water flow rates for “Power Operation” Quantities withdrawn, consumed, and discharged, except for quantity discharged (ESWS)	4

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
			Granbury, with MHI confirmed flow rates used in FSAR.	to be consistent with the circulating water system description.	
CTS-00465	3.6.1.1	3.6-2	Reconcile ER circulating water system, makeup water, and blowdown from Lake Granbury, with MHI confirmed flow rates used in FSAR.	Revised the water rates from 13,038 gallons per minute to 13, 050 gallons per minute, to be consistent with the circulating water system description.	4
CTS-00842	Figure 3.1-1	--	Erratum	Revise the coordinates of the center of the reactor of CPNPP unit 3.	5
CTS-00842	Figure 3.1-2	--	Erratum	Revise the coordinates of the center of the reactor of CPNPP unit 3.	5
CTS-00842	Figure 3.4-3	--	Erratum	Revise the coordinates of the center of the reactor of CPNPP unit 3.	5



NOTES

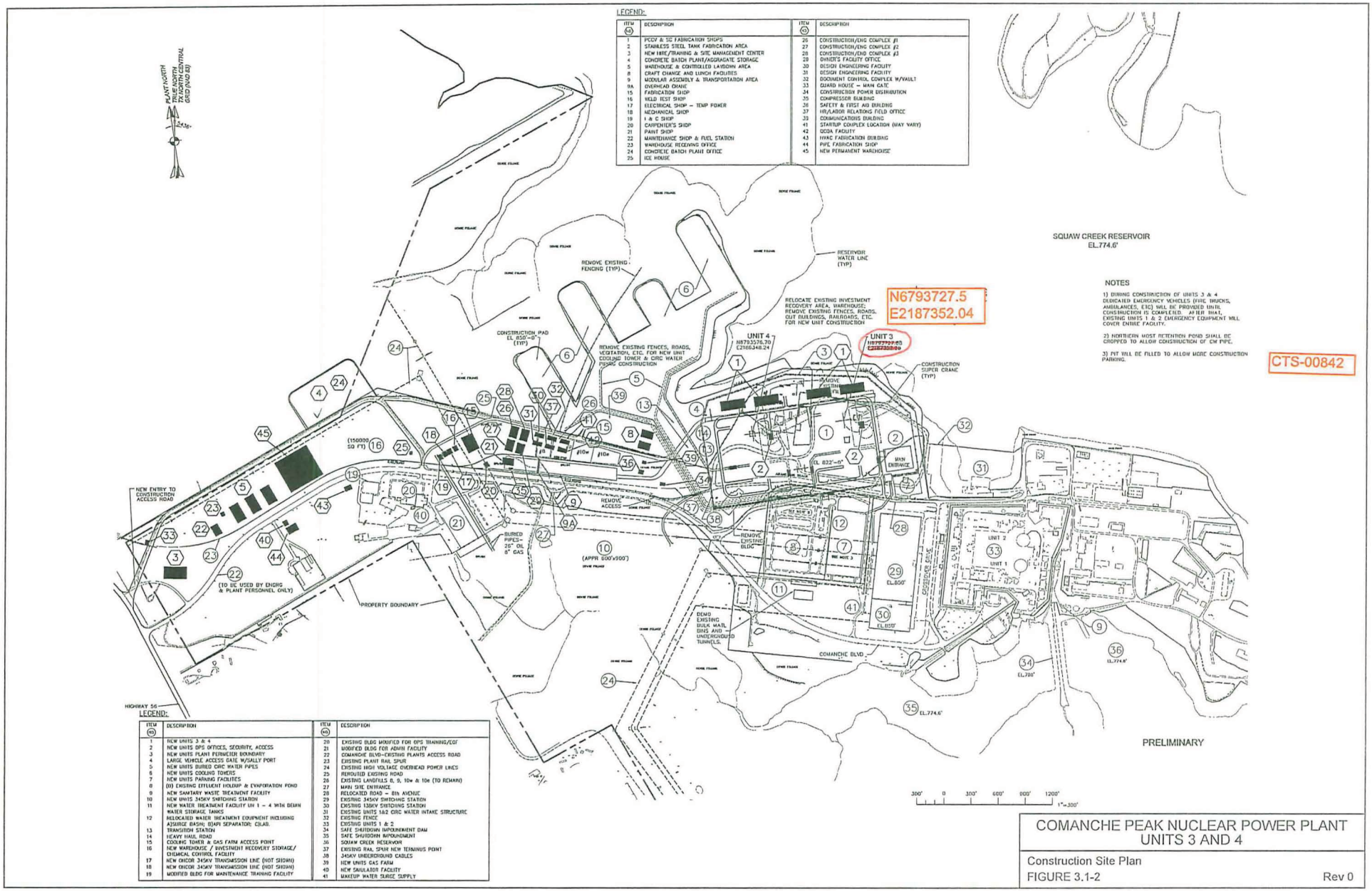
1. BULK MATERIAL BINS & U/G TUNNELS TO BE REMOVED IN THE NEW WATER TREATMENT FACILITY.
2. NORTHERN MOST RETENTION POND SHALL BE FILLED IN TO GRADE.
3. PIT WILL BE FILLED TO ALLOW MORE CONSTRUCTION PARKING.
4. FOR CONSTRUCTION FACILITIES SEE DRAWING CAS-05-11-100-01.
5. THIS DRAWING DOES NOT NOR DOES IT INTEND TO DEPICT ALL SECURITY FEATURES. SECURITY FEATURES SHALL BE UPDATED AT A LATER DATE AND MAY BE CONSIDERED SAFEGUARDS INFORMATION AND NOT SUITABLE FOR ILLUSTRATION ON THIS SITE PLAN.

LEGEND:

ITEM NO.	DESCRIPTION
1	NEW UNITS 3 & 4
2	NEW UNITS OPS OFFICES, SECURITY, ACCESS
3	NEW UNITS PLANT PERIMETER BOUNDARY
4	LARGE VEHICLE ACCESS GATE W/SALLY PORT
5	NEW UNITS BURIED CIRC WATER PIPES
6	NEW UNITS COOLING TOWERS & CIRC WATER PUMPHOUSE
7	NEW UNITS PARKING FACILITIES
8	EXISTING EFFLUENT HOLDUP & EVAPORATION POND
9	NEW SANITARY WASTE TREATMENT FACILITY
10	NEW UNITS 345KV SWITCHING STATION
11	NEW WATER TREATMENT FACILITY UN 1 – 4 WITH DEMIN WATER STORAGE TANK
12	RELOCATED WATER TREATMENT EQUIPMENT INCLUDING ASSURGE BASIN; OIL/API SEPARATOR; C.I.A.B.
13	NOT USED
14	HEAVY HAUL ROAD
15	COOLING TOWER & GAS FARM ACCESS POINT
16	NEW WAREHOUSE / INVENTORY RECOVERY STORAGE/ CHEMICAL CONTROL FACILITY
17	NEW ONCOR 345KV TRANSMISSION LINE
18	NEW ONCOR 345KV TRANSMISSION LINE
19	MODIFIED BLDG FOR MAINTENANCE TRAINING FACILITY
20	MODIFIED BLDG FOR OPS TRAINING/EOF/SIMULATOR 1&2 FACILITY
21	MODIFIED BLDG FOR ADMIN FACILITY
22	COMANCHE BLVD–EXISTING PLANTS ACCESS ROAD
23	EXISTING PLANT RAIL SPUR
24	EXISTING HIGH VOLTAGE OVERHEAD POWER LINES
25	REROUTED EXISTING ROAD
26	EXISTING LANDFILLS 8, 9, 10w & 10e (TO REMAIN)
27	MAIN SITE ENTRANCE
28	RELOCATED ROAD – 6th AVENUE
29	EXISTING 345KV SWITCHING STATION
30	EXISTING 138KV SWITCHING STATION
31	EXISTING UNITS 1&2 CIRC WATER INTAKE STRUCTURE
32	EXISTING FENCE
33	EXISTING UNITS 1 & 2
34	EXISTING SAFE SHUTDOWN IMPOUNDMENT DAM
35	EXISTING SAFE SHUTDOWN IMPOUNDMENT
36	SQUAW CREEK RESERVOIR
37	EXISTING RAIL SPUR NEW TERMINUS POINT
38	VBS (SECURITY)
39	NEW UNITS GAS FARM
40	NEW 3&4 SIMULATOR FACILITY
41	MAKEUP WATER SURGE SUPPLY
42	INTERIM RADWASTE STORAGE/STAGING BUILDING
43	RADWASTE EVAPORATION POND
44	COOLING TOWER CHEMICAL ADDITION FACILITY (H_2SO_4, $NaOCl$, BIOCIDE).

COMANCHE PEAK NUCLEAR POWER PLANT
UNITS 3 AND 4

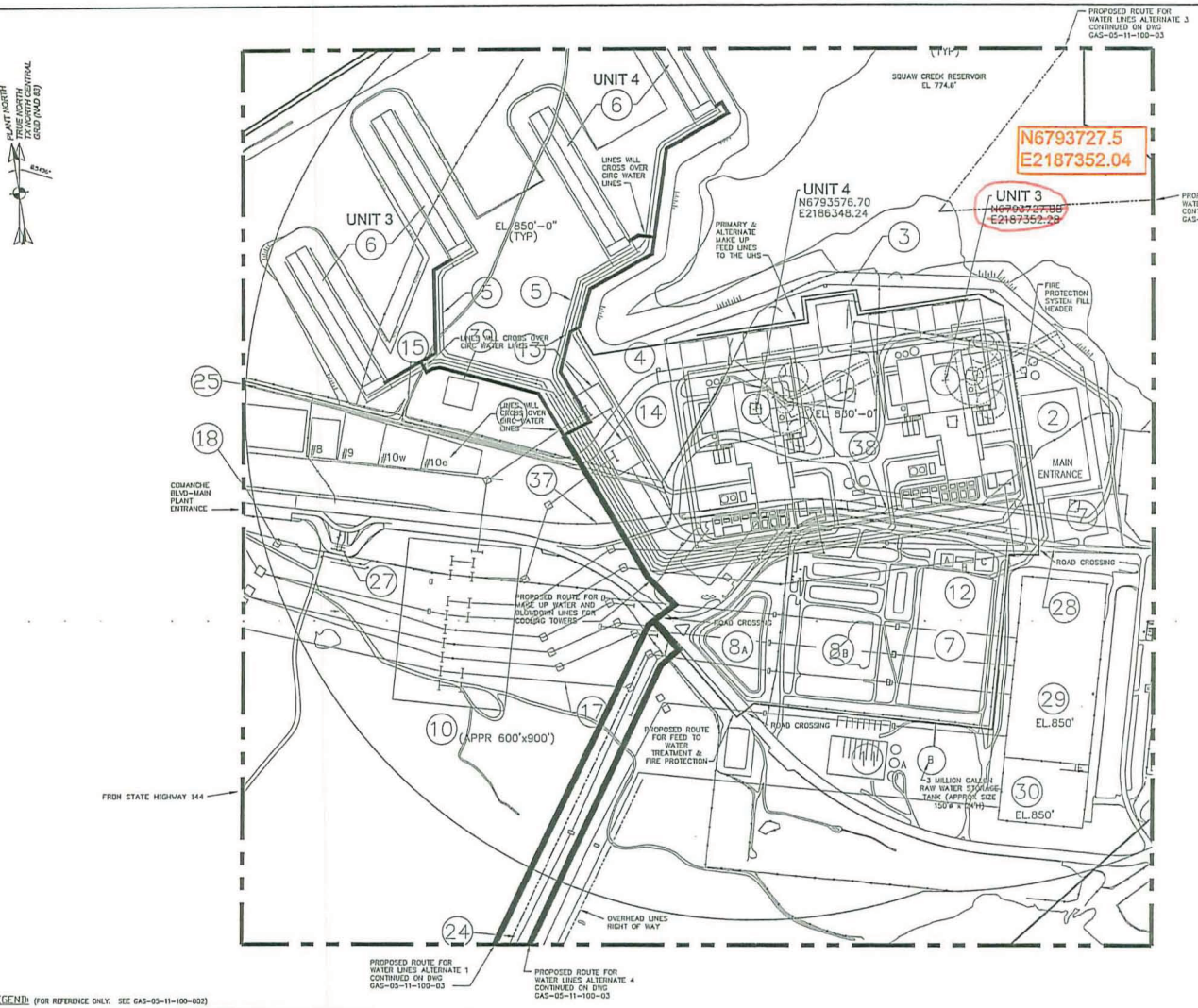
Site Plan
FIGURE 3.1-1 Rev 0



COMANCHE PEAK NUCLEAR POWER PLANT UNITS 3 AND 4

Construction Site Plan

FIGURE 3.1-2 Rev 0



CTS-00842

PIPE DISTANCES

SEE DWG GAS-05-11-100-03 FOR MAKE UP WATER AND BLOWDOWN PIPE DISTANCES.

PIPE ON THIS DRAWING-

-FIRE PROTECTION SYSTEM FILL -	2550 FT
-FEED TO UHS - PRIMARY -	2300 FT
-FEED TO UHS - ALTERNATE -	2500 FT
-FEED TO NEW WATER TREATMENT FAC. -	1700 FT

NOTES

1. INFORMATION PROVIDED BY HALFF ASSOCIATES
2. ROADS, LAKES AND WATERWAYS OUTLINES TRACED FROM SATELLITE IMAGES FOUND ON WEBSITE WWW.TNRIS.STATE.TX.US.

REFERENCE DRAWINGS

AREA PLAN WATER LINES TO AND FROM LAKE GRANBURY AND BRAZOS RIVER — GAS-05-11-100-03

ROUTES FOR WATER LINES

EACH ROUTE WILL CONTAIN AT LEAST THESE LINES:
2-42" MAKE UP WATER LINES
2-36" COOLING TOWERS BLOWDOWN LINES

ALTERNATE 1
(GOOD CHOICE FOR EASIER CONSTR, MOST SECURE)
FOLLOWS ROADS AROUND WEST & SOUTH OF SQUAW CREEK RESERVOIR

ALTERNATE 2
(MOST DIFFICULT TO CONSTR. AND SECURE)
RUNS ACROSS OR THROUGH SQUAW CREEK RESERVOIR

ALTERNATE 3
(DIFFICULT TO CONSTR. AND SECURE ACROSS SCR)
FOLLOWS ROADS AROUND NORTH & EAST OF SQUAW CREEK RESERVOIR & THEN GOES THROUGH SQUAW CREEK RES.

ALTERNATE 4
(BEST CHOICE, EASE OF CONSTR, MOST SECURE)
FOLLOWS ROADS AND POWER LINE RIGHT OF WAYS AROUND WEST & SOUTH OF SQUAW CREEK RESERVOIR

OPEN ITEMS

LEGEND: (FOR REFERENCE ONLY. SEE GAS-05-11-100-002)

ITEM NO	DESCRIPTION	ITEM NO	DESCRIPTION
1	NEW UNITS 3 & 4	19	MODIFIED BLDG FOR MAINTENANCE TRAINING FACILITY
2	NEW UNITS OPS OFFICES, SECURITY, ACCESS	20	MODIFIED BLDG FOR OPS TRAINING/EOF/SIMULATOR FACILITY
3	NEW UNITS PLANT PERIMETER BOUNDARY	21	MODIFIED BLDG FOR ADMIN FACILITY
4	LARGE VEHICLE ACCESS GATE W/SALLY PORT	22	COMANCHE BLVD-EXISTING PLANTS ACCESS ROAD
5	NEW UNITS BURIED CIRC WATER PIPES	23	EXISTING PLANT RAIL SPUR
6	NEW UNITS COOLING TOWERS	24	EXISTING HIGH VOLTAGE OVERHEAD POWER LINES
7	NEW UNITS PARKING FACILITIES	25	REROUTED EXISTING ROAD
8	(A) NEW UNITS EFFLUENT HOLDUP & EVAPORATION POND (B) EXISTING EFFLUENT HOLDUP & EVAPORATION POND	26	EXISTING LANDFILLS 8, 9, 10w & 10e (TO REMAIN)
9	NEW SANITARY WASTE TREATMENT FACILITY	27	MAIN SITE ENTRANCE
10	NEW UNITS 345KV SWITCHING STATION	28	RELOCATED ROAD - 8th AVENUE
11	NEW WATER TREATMENT FACILITY UN 1 - 4 WITH (A)DEMIN WATER STORAGE TANKS AND (B)RAW WATER STORAGE TANK	29	EXISTING 345KV SWITCHING STATION
12	RELOCATED WATER TREATMENT EQUIPMENT INCLUDING A)SURGE BASIN; B)API SEPARATOR; C)LAB.	30	EXISTING 138KV SWITCHING STATION
13	TRANSITION STATION	31	EXISTING UNITS 1&2 CIRC WATER INTAKE STRUCTURE
14	HEAVY HAUL ROAD	32	EXISTING FENCE
15	COOLING TOWER & GAS FARM ACCESS POINT	33	EXISTING UNITS 1 & 2
16	NEW WAREHOUSE / INVESTMENT RECOVERY STORAGE	34	SAFE SHUTDOWN IMPOUNDMENT DAM
17	NEW ONCOR 345KV TRANSMISSION LINE	35	SAFE SHUTDOWN IMPOUNDMENT
18	NEW ONCOR 345KV TRANSMISSION LINE	36	SQUAW CREEK RESERVOIR
		37	EXISTING RAIL SPUR NEW TERMINUS POINT
		38	345KV UNDERGROUND CABLES
		39	NEW UNITS GAS FARM

PRELIMINARY

200 0 200 400 600

COMANCHE PEAK NUCLEAR POWER PLANT UNITS 3 AND 4

Intake and Discharge Locations

FIGURE 3.4-3 (Sheet 3 of 3) Rev 0

Chapter 6

Chapter 6 Tracking Report Revision List

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00615	Acronyms and Abbreviations	6-xvi	Editorial correction	Change “MPT Main Power Transformer” to “MT Main Transformer”.	0
CTS-00630	6.3.1.1	6.3-2	Editorial correction	Change “SWS” to “ESWS”	0
CTS-00631	6.5.1	6.5-2	Editorial correction	Remove “nonradioactive”.	0
CTS-00631	6.5.1	6.5-2	Editorial correction	Change “service water” to “essential service water”	0
CTS-00499	6.7	6.7-3	Editorial correction	Add information for current results regarding humidity date, and remove discussions for future additions.	0
CTS-00499	6.7	6.7-3	Editorial correction	Clean up to match ER 6.4.1 wording for RH instrumentation.	0
MET-24	6.4.1	6.4-2	Increase information as discussed with the NRC.	Revised discussion regarding the temporary relative humidity instrumentation to include current results and conclusions.	3
MET-24	6.7	6.7-3	Revised subsection as discussed in letter TXBN-08024 to the NRC dated 9/19/2008 and to increase information as discussed with the NRC.	Revised discussion regarding the temporary relative humidity instrumentation to include current results and conclusions and to be consistent with Subsection 6.4.1; and reversed change made in UTR Rev 0 “editorial correction” for CTS-00499.	3
CTS-00650	6.6.2	6.6-4	Erratum	Revised 659 to 675.	4

Change ID No.	Section	ER Rev. 0 Page	Reason for change	Change Summary	Rev. of ER T/R
CTS-00720	6.1.3	6.1-4	Errata	Corrected Statement regarding the modification of TPDES permit currently held by Units 1 and 2.	5

Granbury. These outfall locations on Lake Granbury are expected to be in the vicinity of the current SCR discharge pipe (Outfall 005), which is approximately 600 ft upstream of DeCordova Dam (Figure 2.3-13).

6.1.3 OPERATIONAL MONITORING

The operational monitoring program is designed to detect changes in water temperature resulting from plant operation. The current CPNPP TPDES permit, Permit Number WQ0001854000, for CPNPP Units 1 and 2, establishes routine thermal monitoring of discharges to SCR. Specifically, discharges through Outfall 001, mainly discharges from the circulating and other wastewater systems that discharge through other described outfalls, must be monitored for temperature. The existing current daily average and daily maximum temperature limits for discharges made through Outfall 001 are 113°F and 116°F, respectively (TCEQ 2004). The permit requires that discharges made through Outfall 001 be continually monitored for temperature through a continuous recording device (TCEQ 2004). Under the current TDPES permit temperature limit for discharge to Lake Granbury is 93°F (Outfall 005). Monitoring requirements similar to those for CPNPP Units 1 and 2 are anticipated for CPNPP Units 3 and 4. ~~As previously mentioned, permit modification activities for the current TPDES permit are planned for 2008.~~ CTS-00720

The existing TPDES permit is sufficient for the continued operation of CPNPP Units 1 and 2 but a permit amendment is required for a new wastewater outfall for each of the CPNPP Units 3 and 4. Modification of the existing TPDES permit is anticipated to establish sampling requirements and outfall locations for CPNPP Units 3 and 4. ~~Activities to amend the site's TPDES wastewater permit are currently planned for 2008.~~The TPDES permit will be amended as required to support Units 3 and 4 construction activities. Anticipated chemicals used and residual concentrations within the waste stream discharged from CPNPP Units 3 and 4 are listed in Subsection 3.6.1. CTS-00720

The monitoring equipment to be used would be selected based on permit requirements. It is expected that the monitoring equipment used at CPNPP Units 3 and 4 would be identical or similar to equipment currently used at CPNPP Units 1 and 2.

Required data analysis procedures are developed through consultation with the TCEQ and implemented at the time of permit modification.

Thermal monitoring during the operational phase of the project would comply with approved regulatory permits and requirements. Water temperatures from CPNPP Units 3 and 4 are expected to meet applicable federal and state environmental regulatory requirements. CPNPP Units 3 and 4 would use surfacewater from Lake Granbury, a public reservoir, for system operation. The existing operational units, CPNPP Units 1 and 2, would use surfacewater supplied by the SCR, a privately owned reservoir, and are permitted accordingly. In addition, CPNPP is permitted by the Brazos River Authority (BRA) to withdraw up to 48,300 ac-ft of water from Lake Granbury as makeup to SCR (BRA 1999).

6.1.4 REFERENCES

(Boss 2007) Boss, Stephen, PhD, P.G. Bathymetry and Volume Storage of a Portion of Lake Granbury, Hood County, Texas. Department of Geosciences University of Arkansas. Fayetteville, AR. July 11, 2007.