June 2, 2010

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

Part 2

FSAR Revision1

Update Tracking Report

Revision 2

Revision History

Revision	Date	Update Description
-	11/20/2009	COLA Revision 1 Transmittal See Luminant Letter no. TXNB-09074 Date 11/20/2009
-	10/15/2009	Updated Chapters: Ch. 2, 3, 11 See Luminant Letter no. TXNB-09054 Date 10/15/2009 Incorporated responses to following RAIs: No. 30, 31, 33, 35, 36
-	10/19/2009	Updated Chapters: Ch. 2, 3, 5, 11, 13 See Luminant Letter no. TXNB-09055 Date 10/19/2009 Incorporated responses to following RAIs: No. 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50,
-	10/21/2009	Updated Chapters: Ch. 2, 9 See Luminant Letter no. TXNB-09057 Date 10/21/2009 Incorporated responses to following RAIs: No. 51, 52, 53
-	10/26/2009	Updated Chapters: Ch. 3, 5 See Luminant Letter no. TXNB-09058 Date 10/26/2009 Incorporated responses to following RAIs: No. 54, 55, 56, 57, 58, 59
-	10/28/2009	Updated Chapters: Ch. 2 See Luminant Letter no. TXNB-09059 Date 10/28/2009 Incorporated responses to following RAIs: No. 19

-	10/30/2009	Updated Chapters: Ch. 2, 3, 5, 9 See Luminant Letter no. TXNB-09060 Date 10/30/2009 Incorporated responses to following RAIs: No. 61, 62, 63, 64, 65
-	11/5/2009	Updated Chapters: Ch. 3, 13 See Luminant Letter no. TXNB-09061 Date 11/5/2009 Incorporated responses to following RAIs: No. 66, 67, 68, 69, 71
-	11/5/2009	Updated Chapters: Ch. 5, 12, 14 See Luminant Letter no. TXNB-09062 Date 11/5/2009 Incorporated responses to following RAIs: No. 85, 86, 87, 89
-	11/11/2009	Updated Chapters: Ch. 2, 3, 14 See Luminant Letter no. TXNB-09063 Date 11/11/2009 Incorporated responses to following RAIs: No. 72, 73, 74, 75
-	11/11/2009	Updated Chapters: Ch. 1, 2, 3, 9, 12, 14 See Luminant Letter no. TXNB-09064 Date 11/11/2009 Incorporated responses to following RAIs: No. 90, 91, 93, 94, 95, 96, 97, 98, 99, 100, 120
-	11/12/2009	Updated Chapters: Ch. 6, 13 See Luminant Letter no. TXNB-09066 Date 11/12/2009 Incorporated responses to following RAIs: No. 76, 77, 78

-	11/13/2009	Updated Chapters: Ch. 3, 17 See Luminant Letter no. TXNB-09065 Date 11/13/2009 Incorporated responses to following RAIs: No. 79, 80, 84
-	11/13/2009	Updated Chapters: Ch. 2, 3 See Luminant Letter no. TXNB-09067 Date 11/13/2009 Incorporated responses to following RAIs: No. 101, 102, 103, 104, 105, 106, 107, 110, 111, 112, 113, 114, 115,
-	11/16/2009	Updated Chapters: Ch. 1, 11, 12 See Luminant Letter no. TXNB-09068 Date 11/16/2009 Incorporated responses to following RAIs: No. 116, 117, 118, 119
-	11/18/2009	Updated Chapters: Ch. 2 See Luminant Letter no. TXNB-09072 Date 11/18/2009 Incorporated responses to following RAIs: No. 32
-	11/20/2009	Updated Chapters: Ch. 9 See Luminant Letter no. TXNB-09071 Date 11/20/2009 Incorporated responses to following RAIs: No. 109,124
-	11/24/2009	Updated Chapters: Ch. 2, 3 See Luminant Letter no. TXNB-09073 Date 11/24/2009 Incorporated responses to following RAIs:

		No. 60
-	12/9/2009	Updated Chapters: Ch. 17 See Luminant Letter no. TXNB-09077 Date 12/9/2009 Incorporated responses to following RAIs: No. 92
-	12/10/2009	Updated Chapters: Ch. 3 See Luminant Letter no. TXNB-09078 Date 12/10/2009 Incorporated responses to following RAIs: No. 108
-	12/14/2009	Updated Chapters: Ch. 2, 3 See Luminant Letter no. TXNB-09085 Date 12/14/2009 Incorporated responses to following RAIs: No. 122
-	12/16/2009	Updated Chapters: Ch. 3, 9 See Luminant Letter no. TXNB-09081 Date 12/16/2009 Incorporated responses to following RAIs: No. 121, 123
0	1/8/2010	Updated Chapters: Ch 2, 3, 8, 9, 10, 11
-	2/18/2010	Updated Chapters: Ch. 9 See Luminant Letter no. TXNB-10008 Date 2/18/2010 Incorporated responses to following RAIs: No. 126

-	2/19/2010	Updated Chapters: Ch. 5, 9 See Luminant Letter no. TXNB-10007 Date 2/19/2010 Incorporated responses to following RAIs: No. 127, 128, 10 Supplemental
-	2/22/2010	Updated Chapters: Ch. 1, 2, 12,13,14 See Luminant Letter no. TXNB-10010 Date 2/22/2010 Incorporated responses to following RAIs: No. 125, 129, 130, 131
-	2/22/2010	Updated Chapters: Ch. 2, 9 See Luminant Letter no. TXNB-10011 Date 2/22/2010 Incorporated responses to following RAIs: No. 11 Supplemental, 109 Supplemental
-	2/24/2010	Updated Chapters: Ch. 12 See Luminant Letter no. TXNB-10012 Date 2/24/2010 Incorporated responses to following RAIs: No. 133
-	2/24/2010	Updated Chapters: Ch. 9 See Luminant Letter no. TXNB-10013 Date 2/24/2010 Incorporated responses to following RAIs: No. ER GEN-09

-	3/5/2010	Updated Chapters: Ch. 3 See Luminant Letter no. TXNB-10018 Date 3/5/2010 Incorporated responses to following RAIs: No. 97 Supplemental
-	3/9/2010	Updated Chapters: Ch. 12 See Luminant Letter no. TXNB-10020 Date 3/9/2010 Incorporated responses to following RAIs: No. 136
1	3/31/2010	Updated Chapters: Ch 2, 11
-	4/12/2010	Updated Chapters: Ch. 13 See Luminant Letter no. TXNB-10030 Date 4/12/2010 Incorporated responses to following RAIs: No. 151
-	4/20/2010	Updated Chapters: Ch. 2 See Luminant Letter no. TXNB-10032 Date 4/20/2010 Incorporated responses to following RAIs: No. 144
-	5/18/2010	Updated Chapters: Ch. 8 See Luminant Letter no. TXNB-10037 Date 5/18/2010 Incorporated responses to following RAIs: No. 152

-	5/6/2010	Updated Chapters: Ch. 2 See Luminant Letter no. TXNB-10035 Date 5/6/2010 Incorporated responses to following RAIs: No. 141
2	6/2/2010	Updated Chapters: Ch 1, 2, 3, 9, 10, 12, 13, 14, 15,16,19

Chapter 1

Chapter 1 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_12.03-12.04-1 RCOL2_12.01-4 RCOL2_12.03-12.04-7	Table 1.6-201	1.6-2	Response to RAI No.99. Luminant Letter No.TXNB-09064 Date 11/11/2009 Response to RAI No.118 and 119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add NEI 08-08 “Generic FSAR Template Guidance for Life-Cycle Minimization of Contamination”, Rev.3 to Table1.6-201.	-
RCOL2_16-16	Table 1.8-201	1.8-64 1.8-65	Response to RAI No. 91 Luminant Letter no.TXNB-09064 Date 11/11/2009	Deleted COL 16.1_3.3.1(1), COL 16.1_3.3.2(1), and COL 16.1_3.3.6(1). Corrected the description and Resolution Category for COL 16.1_3.3.5(1). Added COL 16.1_5.5.21 (1).	-
RCOL2_12.03-12.04-1	Table 1.9-202	1.9-16	Response to RAI No.99 Luminant Letter No.TXNB-09064 Date 11/11/2009	Add RG 4.21 “Minimization of Contamination and Radioactive Waste Generation: Life Cycle Planning” to Table 1.9-202.	-
RCOL2_09.02.01-4	Table 1.8-201 (Sheet 33 of 62)	1.8-42	Response to RAI No.109 Luminant Letter No.TXNB-09071 Date 11/20/2009	COL 9.2(6) added Subsection 9.4.5.1.1.6. COL 9.2(7) Deleted subsection 9.2.1.5.4.	-
RCOL2_14.02.01-1	1.9 Table 1.9-202	1.9-16	Response to RAI No.129 Luminant Letter No.TXNB-10010 Date 2/22/2010	Change identifies that conformance with Division 4 Regulatory Guide “Quality Assurance for Radiological Monitoring Programs” corresponding FSAR Chapter/Section is 12.5.	-
CTS-01106	Table 1.6-201	1.6-2	Update due to issuance of NEI 07-08A Rev0	NEI 07-08 Rev.3 was updated to NEI 07-08A Rev.0.	2
CTS-01107	Table 1.6-201	1.6-2	Update due to issuance of NEI 08-08A Rev0	NEI 08-08 Rev.3 was updated to NEI 08-08A Rev.0.	2

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
MAP-03-023	Table 1.8-201 (sheet 5 of 62)	1.8-14	Consistency with DCD Rev2 and COLA Rev1	Corrected section number of COL 3.5(1)	2
DCD_03.06.03-19	Table 1.8-201 (Sheet 7 of 62)	1.8-16	Reflect response to DCD RAI No.485	Added COL Item COL 3.6(10) in consistent with DCD RAI response	2
DCD_03.07.01-4	Table 1.8-201 (sheet 9 of 62)	1.8-18	Reflect response to DCD RAI No.494	Revised COL Item 3.7(8) to be consistent with DCD RAI response	2
DCD_03.08.05-35	Table 1.8-201 (sheet 9 of 62)	1.8-18	Reflect response to DCD RAI No. 496	Revised COL Item 3.7(7) to be consistent with DCD RAI response	2
DCD_05.02.01.01-1	Table 1.8-201 (sheet 22 of 62)	1.8-31	Reflect response to DCD RAI No. 264 (second amendment)	Revised COL item statement.	2
DCD_14.02-120	Table 1.8-201 (sheet 53 of 62)	1.8-62	Reflect response to DCD RAI No. 521	Revised COL item 14.2(11) from “First-plant only test” to “First-plant only tests”	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

CP SUP 1.6(1)

Table 1.6-201

Material Referenced

Report Number	Title	FSAR Section Number	
52-021, Docket Number	US-APWR Design Control Document, Rev. 2	All FSAR Chapters	
NEI 07-09A	Generic FSAR Template Guidance for Offsite Dose Calculation Manual Program Description, Rev.0	11.5	
NEI 07-10A	Generic FSAR Template Guidance for Process Control Program, Rev.0	11.4	
NEI 07-08A	Generic FSAR Template Guidance for Ensuring That Occupational Radiation Exposures Are As Low As Is Reasonably Achievable (ALARA), Rev. ~~3~~0	12.1	CTS-01106 CTS-01106
NEI 07-03A	Generic FSAR Template Guidance for Radiation Protection Program Description, Rev. 0	12.1, 12.5	
NEI 08-08A	Generic FSAR Template Guidance for Life-Cycle Minimization of Contamination, Rev. 0	12.5	RCOL2_12.03-12.04-1 RCOL2_12.03-12.04-7 CTS-01107
NEI 06-13A	Template for an Industry Training Program Description, Rev. 1	13.2	
NEI 06-06	Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites, Rev. 3	13.7	
NEI 06-09	Risk-Managed Technical Specifications (RMTS) Guidelines, Rev. 0	16.1, Chapter 19	
NEI 04-10	Risk-Informed Method for Control of Surveillance Frequencies, Rev. 1	16.1	
NEI 06-14A	Quality Assurance Program Description, Rev. 0	17.5	
NEI 07-02A	Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed Under 10 CFR Part 52, Rev. 0	17.6	

CP COL 1.8(2)

Table 1.8-201 (Sheet 5 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.4(5)	The COL Applicant is to identify and design, if necessary, any site-specific flood protection measures such as levees, seawalls, floodwalls, site bulkheads, revetments, or breakwaters per the guidelines of RG 1.102 (Reference 3.4-3), or dewatering system if the plant is not built above the DBFL.	3.4.1.2	3a
COL 3.4(6)	The COL Applicant is to identify any site-specific physical models used to predict prototype performance of hydraulic structures and systems.	3.4.2	3a
COL 3.5(1)	The COL Applicant is to have plant procedures in place prior to fuel load that specify unsecured equipment, including portable pressurized gas cylinders, located inside or outside containment and required for maintenance or undergoing maintenance is to be removed from containment prior to operation, moved to a location where it is not a potential hazard to SSCs important to safety, or seismically restrained to prevent it from becoming a missile.	~~3.5.1.1.2.1~~3.5.1.1.4	2
COL 3.5(2)	The COL Applicant is to commit to actions to maintain P1 within this acceptable limit as outlined in RG 1.115, “Pritectuib Against Low-Tragectory Turbine Missiles” (Reference 3.5-6) and SRP Section 3.5.1.3, “Turbine Missiles” (Reference 3.5-7).	3.5.1.3.2	2
COL 3.5(3)	As described in DCD, Section 2.2, the COL Applicant is to establish the presence of potential hazards, except aircraft, which is reviewed in Subsection 3.5.1.6, and the effects of potential accidents in the vicinity of the site.	3.5.1.5	3a
COL 3.5(4)	It is the responsibility of the COL Applicant to verify the site interface parameters with respect to aircraft crashes and air transportation accidents as described in Section 2.2.	3.5.1.6	3a

MAP-03-023

CP COL 1.8(2)

Table 1.8-201 (Sheet 7 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.6(4)	The COL Applicant is to implement the criteria for defining break and crack locations and configurations for site-specific high-energy and moderate-energy piping systems. The COL Applicant is to identify the postulated break location for site-specific high-energy and moderate-energy piping systems. The COL Applicant is to implement the appropriate methods to assure that as-built configuration of site-specific high-energy and moderate-energy piping systems is consistent with the design intent and provide as-built drawings showing component locations and support locations and types that confirms this consistency.	3.6.2.1	3a
COL 3.6(5)	Deleted from the DCD.		
COL 3.6(6)	Deleted from the DCD.		
COL 3.6(7)	Deleted from the DCD.		
COL 3.6(8)	Deleted from the DCD.		
COL 3.6(9)	Deleted from the DCD.		
COL 3.6(10)	The COL Applicant is to develop a milestone schedule for implementation of the operating and maintenance procedures for prevention of water hammer.	3.6.3.3.1 13.5.1.2	2
COL 3.7(1)	The COL Applicant is to confirm that the site-specific PGA at the basemat level control point of the CSDRS is less than or equal to 0.3 g.	3.7.1.1	3a
COL 3.7(2)	The COL Applicant is to perform an analysis of the US-APWR standard plant seismic category I design to verify that the site-specific FIRS at the basemat level control point of the CSDRS are enveloped by the site-independent CSDRS.	3.7.1.1	3a

DCD_03.06.03-19

CP COL 1.8(2)

Table 1.8-201 (Sheet 9 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category	
COL 3.7(7)	The COL Applicant is to determine the allowable dynamic bearing capacity based on site conditions, including the properties of fill concrete placed to provide a level surface that matches the bottom of foundation elevations, and to evaluate the bearing load to this capacity.	3.7.1.3 Table 3.7-203 Table 3.8-202	3a	DCD_03.08.05-35
COL 3.7(8)	~~The soil properties may be considered strain-independent for subgrade materials with initial shear wave velocities of 3,500 ft/s or higher, to be confirmed by the COL Applicant as part of the site-specific subsurface material investigations discussed in Section 2.5.4. However, t~~The COL Applicant ~~must institute dynamic testing~~is to evaluate the strain-dependent variation of the material dynamic properties for site materials~~ with initial shear wave velocities below 3,500 ft/s.~~	3.7.2.4.1	3a	DCD_03.07.01-4 DCD_03.07.01-4
COL 3.7(9)	The COL Applicant is to assure that the design or location of any site-specific seismic category I SSCs, for example pipe or duct banks, will not expose those SSCs to possible impact due to the failure or collapse of non-seismic category I structures, or with any other SSCs that could potentially impact, such as heavy haul route loads, transmission towers, non safety-related storage tanks, etc.	3.7.2.8	3a	
COL 3.7(10)	It is the responsibility of the COL Applicant to further address structure-to-structure interaction if the specific site conditions can be important for the seismic response of particular US-APWR seismic category I structures, or may result in exceedance of assumed pressure distributions used for the US-APWR standard plant design.	3.7.2.8	3a	
COL 3.7(11)	Deleted from the DCD.			

CP COL 1.8(2)

Table 1.8-201 (Sheet 22 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 5.2(4)	Inservice inspection and testing program for the RCPB The COL applicant addresses and develops the implementation milestone of the inservice inspection and testing program for the RCPB, in accordance with Section XI of the ASME Code and 10 CFR 50.55a.	5.2.4.1 Table 5.2.4-201 Table 13.4-201	1b
COL 5.2(5)	Preservice inspection and testing program for the RCPB The COL applicant addresses and develops the implementation milestone of the preservice inspection and testing program for the RCPB in accordance with Article NB-5280 of Section III, Division I of the ASME Code.	5.2.4.2	1b and 1a
COL 5.2(6)	Deleted from the DCD.		
COL 5.2(7)	Deleted from the DCD.		
COL 5.2(8)	Deleted from the DCD.		
COL 5.2(9)	Deleted from the DCD.		
COL 5.2(10)	Deleted from the DCD.		
COL 5.2(11)	ASME Code Edition and Addenda The COL applicant addresses whether ~~the~~ ASME Code editions or addenda other than those specified in Table 5.2.1-1 ~~or 10 CFR 10 CFR 50.55a is~~will be used.	5.2.1.1	3a

DCD_05.02.01.01-1

CP COL 1.8(2)

Table 1.8-201 (Sheet 53 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 14.2(7)	The COL applicant provides an event-based schedule, relative to fuel loading, for conducting each major phase of the test program, and a schedule for the development of plant procedures that assures required procedures are available for use during the preparation, review and performance of preoperational and startup testing. For multiunit sites, the COL applicant discusses the effects of overlapping initial test program schedules on organizations and personnel participating in each ITP. The COL applicant identifies and cross-references each test or portion of a test required to be completed prior to fuel load which satisfies ITAAC requirements. [14.2.9] [14.2.11]	14.2.9 14.2.11 Table 14.2-202	4
COL 14.2(8)	Deleted from the DCD.		
COL 14.2(9)	Deleted from the DCD.		
COL 14.2(10)	The COL applicant is responsible for the testing outside scope of the certified design in accordance with the test criteria described in subsection 14.2.1. [14.2.12]	14.2.12.1.90.C.8 14.2.12.1.112 14.2.12.1.113 14.2.12.1.114 Table 14.2-201 Appendix 14A	3a
COL 14.2(11)	The COL holder for the first plant is to perform the first plant only tests and prototype test. For subsequent plants, either these tests are performed, or the COL applicant provides a justification that the results of the first-plant only tests are applicable to the subsequent plant and are not required to be repeated. [14.2.8]	14.2.8.1 14.2.8.2.1	3a

DCD_14.02-120

Chapter 2

Chapter 2 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.02.01-02.02.02-1	2.2.1	2.2-1	Response to RAI No.30 Luminant Letter No. TXNB-09054 Date 10/15//2009	Removed bullet for DeCordova Steam Electric Station (SES).	-
RCOL2_02.02.01-02.02.02-1	2.2.2.1	2.2-3	Response to RAI No.30 Luminant Letter No. TXNB-09054 Date 10/15//2009	Added clarification for the location of the DeCordova	-
RCOL2_02.02.01-02.02.02-1	2.2.3.1.1.2	2.2-12	Response to RAI No.30 Luminant Letter No. TXNB-09054 Date 10/15//2009	Removed “the DeCordova SES”	-
RCOL2_02.02.01-02.02.02-2	2.2.2.2.10	2.2-5	Response to RAI No.30 Luminant Letter No. TXNB-09054 Date 10/15//2009	Added hypochlorite and percent	-
RCOL2_02.02.03-1	Table 2.2-214	2.2-43	Response to RAI No.31 Luminant Letter No. TXNB-09054 Date 10/15//2009	Revised table to show hypochlorite and dimethylamine.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.03.02-1	Table 2.3-284	2.3-162	Response to RAI No.45 Luminant Letter No. TXNB-09055 Date 10/19/2009	Corrected headers by changing the “Upper Level” to “Lower Level” at each location.	-
RCOL2_02.03.02-2 RCOL2_02.03.02-3	Table 2.3-327	2.3-220 through 2.3-222	Response to RAI No.45 Luminant Letter No. TXNB-09055 Date 10/19/2009	Replaced table with updated data and removed “Annual” from the title.	-
RCOL2_02.03.02-2	Table 2.3-328	2.3-223 through 2.3-225	Response to RAI No.45 Luminant Letter No. TXNB-09055 Date 10/19/2009	Replaced table with updated data and removed “Annual” from the title.	-
RCOL2_02.03.02-2 andRCOL2_02.03.02-3	Table 2.3-329	2.3-226 through 2.3-228	Response to RAI No.45 Luminant Letter No. TXNB-09055 Date 10/19/2009	Replaced table with updated data and removed “Annual” from the title.	-
RCOL2_02.03.02-2	Table 2.3-330	2.3-229 through 2.3-231	Response to RAI No.45 Luminant Letter No. TXNB-09055 Date 10/19/2009	Replaced table with updated data and removed “Annual” from the title.	-
RCOL2_02.03.02-2	Figure 2.3-373	-	Response to RAI No.45 Luminant Letter No. TXNB-09055 Date 10/19/2009	Revised graph based on updated data and removed the word “Annual” from the title.	-
RCOL2_02.03.02-2	Figure 2.3-374	-	Response to RAI No.45 Luminant Letter	Revised graph based on updated data and removed	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			No. TXNB-09055 Date 10/19/2009	the word “Annual” from the title.	
RCOL2_02.03.02-2	Figure 2.3-375	-	Response to RAI No.45 Luminant Letter No. TXNB-09055 Date 10/19/2009	Revised graph based on updated data and removed the word “Annual” from the title.	-
RCOL2_02.03.02-2	Figure 2.3-376	-	Response to RAI No.45 Luminant Letter No. TXNB-09055 Date 10/19/2009	Revised graph based on updated data and removed the word “Annual” from the title.	-
RCOL2_02.03.03-3 RCOL2_02.03.03-5 RCOL2_02.03.03-7	2.3.3.1	2.3-36	Response to RAI No. 46 Luminant Letter no.TXNB-09055 Date 10/19/2009	Expanded explanation of instrumentation.	-
RCOL2_02.03.03-3 RCOL2_02.03.03-5 RCOL2_02.03.03-7	2.3.3.3	2.3-37	Response to RAI No. 46 Luminant Letter no.TXNB-09055 Date 10/19/2009	Expanded explanation of calibration and surveillance.	-
RCOL2_02.03.03-6	2.3.3.3	2.3-37	Response to RAI No. 46 Luminant Letter no.TXNB-09055 Date 10/19/2009	Added a sentence to state how often the guy wires are inspected.	-
RCOL2_02.03.01-1	Acronyms and Abbreviations	2liv 2lviii	Response to RAI No. 51 Luminant Letter no.TXNB-09057 Date 10/21/2009	Added acronym ASHRAE and NOAA to support new text added to subsection 2.3.1.2.10.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.03.01-1	2.3.1.2.10	2.3-21	Response to RAI No. 51 Luminant Letter no.TXNB-09057 Date 10/21/2009	Added text after sentence to describe the temperature values.	-
RCOL2_02.03.01-2	2.3.1.2.3	2.3-12	Response to RAI No. 51 Luminant Letter no.TXNB-09057 Date 10/21/2009	Changed the number of tornados from 148 to 246.	-
RCOL2_02.03.01-2	2.3.1.2.3	2.3-13	Response to RAI No. 51 Luminant Letter no.TXNB-09057 Date 10/21/2009	Updated values to reflect 95 percent upper limit.	-
RCOL2_02.03.01-2	2.3.7	2.3-49	Response to RAI No. 51 Luminant Letter no.TXNB-09057 Date 10/21/2009	Updated reference citation information for Reference number 2.3-210.	-
RCOL2_02.03.01-3	2.3.1.2.6	2.3-15	Response to RAI No. 51 Luminant Letter no.TXNB-09057 Date 10/21/2009	Revised last paragraph to support the response.	-
RCOL2_02.03.01-5	2.3.1.2.8	2.3-20	Response to RAI No. 51 Luminant Letter no.TXNB-09057 Date 10/21/2009	Added a sentence to discuss assumption made to enough safety in the most extreme winter condition.	-
RCOL2_02.05.05-1	Accronyms and Abreviation	2-liv	Response to RAI No. 19 Luminant Letter no. TXNB-09059 Date 10/28/2009	Removed and added text a_y yield acceleration from the “Acronyms and Abreviation” list	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.05.05-1	2.5.5.2.4 2.5.5.2.5 2.5.5.2.6 2.5.5.2.7	2.5-225 through 2.5-227	Response to RAI No. 19 Luminant Letter no. TXNB-09059 Date 10/28/2009	Revised Subsection for RAI response	-
RCOL2_02.05.05-1	Table 2.5.5-203	2.5-440	Response to RAI No. 19 Luminant Letter no. TXNB-09059 Date 10/28/2009	Revised entire last column of the table	-
RCOL2_02.05.05-1	2.5.7	2.5-451	Response to RAI No. 19 Luminant Letter no.TXNB-TXNB-09059 Date 10/28/2009	Removed references 2.5-425 and 2.5-427	-
RCOL2_02.05.05-1	Figures 2.5.5-213 Through 2.5.5-216	-	Response to RAI No. 19 Luminant Letter no.TXNB-TXNB-09059 Date 10/28/2009	Removed references 2.5-425 and 2.5-427	-
RCOL2_02.03.04-1	2.3.4.2	2.3-42	Response to RAI No. 72 Luminant Letter No. TXNB-09063 Date 11/11/2009	Revised to provide updated text, including a reference to the US-APWR DCD parameters justifying the conservative assumptions.	-
RCOL2_02.03.04-2	2.3.4.2	2.3-43	Response to RAI No. 72 Luminant Letter No. TXNB-09063 Date 11/11/2009	Revised to indicate the x/Q values include a 10 % margin.	-
RCOL2_02.03.04-3	2.3.4.1	2.3-39	Response to RAI No. 72 Luminant Letter No. TXNB-09063 Date 11/11/2009	Revised to clarify the years of data used in the accident x/Q	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04-1	2.4.1 2.4.2 2.4.3 2.4.4 2.4.5 2.4.6 2.4.7 2.4.8	2.4-2 2.4-14 2.4-20 2.4-26 2.4-32 2.3-34 2.4-35 2.4-37	Response to RAI No.95 Luminant Letter No. TXNB-09064 Date 11/11/2009	Revised the introductory sentence to remove "Replace the content" with "Add the following at the end" and deleted the last portion of the sentence "with the following."	-
RCOL2_02.03.04-4	Table 2.0-1R Table 2.3-338 Table 2.3-339	2.0-4 Through 2.0-7 2.3-240 Through 2.3-245 2.3-246 Through 2.3-245	Response to RAI No. 72 Luminant Letter No. TXNB-09063 Date 11/11/2009	Revised to reflect a more precise location for the main control room receptors.	-
RCOL2_02.04.07-2	2.4.7	2.4-36	Response to RAI No.104 Luminant Letter No. TXNB-09067 Date 11/13/2009	Reference numbers 2.4-269 and 2.4-270 were changed to 2.4-271 and 2.4-272.	-
RCOL2_02.04.07-2	2.4.7	2.4-36	Response to RAI No.104 Luminant Letter No. TXNB-09067 Date 11/13/2009	Revised to clarify coincident wind wave and to be consistent with FSAR Subsection 2.4.3.6.	-
RCOL2_02.04.04-4	2.4.4.1	2.4-27	Response to RAI No. 111 Luminant Letter no.TXNB-09067 Date 11/13/2009	Added text to clarify assumption that reservoirs are at normal water surface elevations with no turbine discharges.	-
RCOL2_02.02.03-7	2.2.3.1	2.2-11	Response to RAI No.32 Luminant Letter No. TXNB-	Added "and radionuclide releases at adjacent units."	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			09072 Date 11/18/2009		
RCOL2_02.02.03-7	2.2.3.1.7	2.2-20 2.2-11	Response to RAI No.32 Luminant Letter No. TXNB-09072 Date 11/18/2009	Added subsection to provide information on radiological releases.	-
CTS-00916	Table 2.0-1R (Sheet 11 of 12)	2.0-12	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Revised typographical error	-
CTS-00916	2.5.2.5 2.5.2.5.1	2.5-114 2.5-115 2.5-116	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Revised typographical error	-
RCOL2_03.07.02-1	2.5.2.5.2.1	2.5-116	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed “new EPRI” to “2004 EPRI” in the first paragraph.	-
RCOL2_03.07.02-1	2.5.2.5.2.1	2.5-117	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed “Vs ± Variability values” to “Vs ±1 sigma Variability values” in the third paragraph.	-
CTS-00916	2.5.2.5.2.1	2.5-117	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Revised typographical error	-
RCOL2_03.07.02-5	2.5.2.5.2.1	2.5-117	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added “(strain-independent)” after “linearly” in the fourth paragraph. Correct typo in fourth paragraph.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				Add sensitivity study for strain-dependent modulus in the fourth paragraph.	
RCOL2_03.07.02-1	2.5.2.5.2.1	2.5-119	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for the peak strain in the soil column in the 6 through 8 paragraphs.	-
CTS-00916	2.5.2.5.2.1	2.5-120	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Revised typographical error	-
CTS-00916	2.5.2.6.1	2.5-120	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Revised typographical error	-
RCOL2_03.07.02-1	2.5.2.6.1.1	2.5.121	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for horizontal GMRS spectrum in the 1 and 7 through 11 paragraphs.	-
CTS-00916	2.5.2.6.1.1 2.5.2.6.1.2	2.5-122 2.5-123 2.5-123 2.5-124	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Revised typographical error	-
RCOL2_03.07.02-1	2.5.2.6.2	2.5-126	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for Foundation Input Response Spectrum in the 8 and 9 paragraphs.	-
CTS-00916	2.5.2.6.2	2.5-126	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Revised typographical error	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.07.02-1	Figure 2.5.2-253	-	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added Figures for maximum strain for the 4 cases. 1. 500 ft of GMRS/FIRS1 profiles $1x10^{-5}$ 2. 500 ft of GMRS/FIRS1 profiles $1x10^{-6}$ 3. 50 ft of FIRS4 profiles $1x10^{-5}$ 4. 50 ft of FIRS4 profiles $1x10^{-6}$	-
RCOL2-03.08.04-43	2.5.4.5.4	2.5-190	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the description for the fill.	-
RCOL2_02.05.02-16 S01	2.5.2.4.4 2.5.2.5	2.5-112 2.5-113 2.5-115	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Removed text after words “CAV filter.”and Added Meers Fault to discussion	-
CTS-01098	2.5.2.5.1	2.5-115 2.5-116	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Word “Uncertainty was corrected to “Uncertainty”	-
RCOL2_02.05.02-16 S01	2.5.2.5.2.1	2.5-116	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Removed multiple of before “60 synthetic profiles”	-
RCOL2_02.05.02-16 S01	2.5.2.6.1.1	2.5-121	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Removed words “the NRC standard”	-
RCOL2_02.05.02-16 S01	2.5.2.6.1.1	2.5-123	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Word “inside was corrected to “in site” Last 3 paragraphs of the section were revised, second to last paragraph was removed	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01098	2.5.2.6.1.1	2.5-123	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Word “was” was corrected to “is”	-
RCOL2_02.05.02-16 S01	2.5.2.6.1.2	2.5-124	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Figure number was updated from 233 to 234	-
RCOL2_02.05.02-16 S01	2.5.2.6.2	2.5-126	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Removed text on FIRS spectra	-
CTS-01098	Table 2.5.2-230 Through Table 2.5.2-237	2.5-343 Through 2.5-351	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Tables were updated due to calculation revision.	-
RCOL2_02.05.02-16 S01	Figures 2.5.2-215 through 2.5.2-226 Figures 2.5.2-229 through 2.5.2-231 Figures 2.5.2-233 through 2.5.2-239 Figures 2.5.2-246 through 2.5.2-251 Figure 3.7-201	-	Response to RAI No. 11 Luminant Letter no.TXNB-09084 Date 12/14/2009	Figures were updated due to calculation revision	
CTS-01092	2.2.2.7.1	2.2-9	Correction	Corrected reference notation from (Reference 2.2-229) to (Reference 2.2-233) in the sentence that reads: “As of 2007, the airport	0

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				had approximately 32,850 aircraft…" and corrected reference notation from (Reference 2.2-230) to (Reference 2.2-235) in the sentence that reads: "As of 2006, the airport had approximately 58,400 aircraft…"	
CTS-01092	2.2.5	2.2-24	Correction	Added reference citations to account for the reference notations in Subsection 2.2.2.7.1 and revised current reference numbers: 2.2-229 to 2.2-233; 2.2-230 to 2.2-235 and 2.2-231 to 2.2-337. Reference citations added include: 2.2-229 through 2.2-232; 2.2-234; and 2.2-236	0
CTS-01093	2.4.12.2.4 2.4.13.3	2.4-52 2.4-67	Correction	Corrected years from "August 2007 to February 2007" to "August 2007 to February 2008."	0
RCOL2_06.04-7	Table 2.2-214	2.2-43 2.2-44	Response to RAI No.125 Luminant Letter No.TXNB-10010 Date 02/22/2010	Added the refrigerant of chiller units in the Table 2.2-214.	-
RCOL2_02.05.02-16 S02	2.5.2.1.3.1	2.5-72 2.5-73	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Reflected additional earthquake in analysis	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.05.02-16 S02	2.5.2.2	2.5-76	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Reflected changes in seismic sources	-
RCOL2_02.05.02-16 S02	2.5.2.2.1	2.5-77 2.5-78	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Reflected changes in seismic sources	-
RCOL2_02.05.02-16 S02	2.5.2.2.1.1	2.5-78	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Clarified that Meers fault was replaced	-
RCOL2_02.05.02-16 S02	2.5.2.2.1.2	2.5-79	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Dames & Moore screening analysis	-
RCOL2_02.05.02-16 S02	2.5.2.2.1.3	2.5-80	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Law Engineering screening analysis	-
RCOL2_02.05.02-16 S02	2.5.2.2.1.4	2.5-81	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Rondout Associates screening analysis	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.05.02-16 S02	2.5.2.2.1.5	2.5-82	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Weston Geophysical screening analysis	-
RCOL2_02.05.02-16 S02	2.5.2.2.1.6	2.5-83	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Woodward-Clyde screening analysis and clarified that Meers fault was replaced	-
RCOL2_02.05.02-16 S02	2.5.2.4.2.2	2.5-96	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Reflects additional material and reorganization of subsections	-
RCOL2_02.05.02-16 S02	2.5.2.4.2.2.2	2.5-97	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Law Engineering screening analysis	-
RCOL2_02.05.02-16 S02	2.5.2.4.2.2.3	2.5-98	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Impact of replacing Meers fault	-
RCOL2_02.05.02-16 S02	2.5.2.4.2.2.4	2.5-99	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Rondout Associates screening analysis	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.05.02-16 S02	2.5.2.4.2.2.5	2.5-99 2.5-100	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Weston Geophysical screening analysis	-
RCOL2_02.05.02-16 S02	Figure 2.5.2-204	-	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Law Engineering screening analysis	-
RCOL2_02.05.02-16 S02	Figure 2.5.2-206	-	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Rondout Associates screening analysis	-
RCOL2_02.05.02-16 S02	Figure 2.5.2-207	-	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Weston Geophysical screening analysis	-
RCOL2_02.05.02-16 S02	Figure 2.5.2-208	-	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources with updated Mmax distributions and weights	-
RCOL2_02.05.02-16 S02	2.5.2	2.5-256	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added new Ref 2.5-478 and 2.5-479	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.05.02-16 S02	Table 2.5.2-202	2.5-305	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Clarified that Meers fault was replaced	-
RCOL2_02.05.02-16 S02	Table 2.5.2-203	2.5-307 2.5-308	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Dames & Moore screening analysis	-
RCOL2_02.05.02-16 S02	Table 2.5.2-204	2.5-309	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Law Engineering screening analysis	-
RCOL2_02.05.02-16 S02	Table 2.5.2-205	2.5-310	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Rondout Associates screening analysis	-
RCOL2_02.05.02-16 S02	Table 2.5.2-206	2.5-311	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Weston Geophysical screening analysis	-
RCOL2_02.05.02-16 S02	Table 2.5.2-207	2.5-312 2.5-313	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources to Woodward-Clyde screening analysis and clarified that Meers fault was replaced	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.05.02-16 S02	Table 2.5.2-210	2.5-316	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Added sources with updated Mmax distributions and weights	-
RCOL2_02.05.02-16 S02	Table 2.5.2-233	2.5-346	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Errata	-
RCOL2_02.05.02-16 S02	Table 2.5.2-236	2.5-349	Response to RAI No.11 Supplemental. Luminant Letter No.TXNB-10011 Date 02/22/2010	Errata	-
CTS-01112	2.1.1.1	2.1-2	Erratum	Corrected the error for Unit 3 Northing reported as 357406 to 3574606 as described in ER Section 2.1.	1
CTS-01105	2.1.2.2	2.1-4	Access change to SCR	Revised specific information with regards to SCR use and access control.	1
CTS-01105	2.1.2.3	2.1-4	Access change to SCR	Added specific information with regards to SCR use and access control.	1
CTS-01105	2.1.3.3.2.1	2.1-8	Access change to SCR	Added specific information with regards to SCR use and access control.	1

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01105	2.2.2.4	2.2-7	Access change to SCR	Added specific information with regards to SCR use and access control.	1
CTS-01105	2.2.2.4	2.2-7	Clarification	Clarified intake structure location.	1
CTS-01105	2.2.3.1.5	2.2-20 [2.2-21]	Access change to SCR and correction/enhanced description	Replaced existing evaluation of collisions with the intake structure in SCR with an evaluation in Lake Granbury.	1
CTS-01105	2.2.3.1.6	2.2-20 [2.2-22]	Access change to SCR and correction/enhanced description	Clarified the existing evaluation of liquid spills in SCR and added an evaluation of liquid spills in Lake Granbury.	1
RCOL2_02.04.05-5	2.4.5	2.4-32	Response to RAI No.144 Luminant Letter No.TXNB-10032 Date 4/20/2010	Revised the text to clarify ANSI/ANS 2.8-1992 guidance criteria for considering regions of occurrence for the moving squall lines.	-
RCOL2_02.04.07-4	2.4.7.	2.4-36	Response to RAI No. 141 Luminant Letter no.TXNB-10035 Date 5/6/2010	Revised text to justify the bounding conservatism of the icing effect analysis, giving consideration to icing under extreme conditions.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01125	Table 2.0-1R (Sheet 7 of 12)	2.0-8	Consistency between the DCD Table 2.0-1 and FSAR Table 2.0-1R	Revised information for the plant vent.	2
CTS-01125	Table 2.0-1R (Sheet 1, 6, 7, 9 and 11of 12)	2.0-2 2.0-7 2.0-8 2.0-10 2.0-12	Consistency between the DCD Table 2.0-1 and FSAR Table 2.0-1R	Revised information to be consistent with Table 2.0-1 in DCD Revision 2.	2
CTS-01125	Table 2.0-1R (Sheet 12 of 12)	2.0-13	Consistency between the DCD Table 2.0-1 and FSAR Table 2.0-1R	Revised information for settlement and maximum tilt values.	2
CTS-01125	Table 2.0-1R (Sheet 1, 3, 4, 5, 6, 7, 8 and 12 of 12)	2.0-2 2.0-4 2.0-5 2.0-6 2.0-7 2.0-8 2.0-9 2.0-13	Consistency between the DCD Table 2.0-1 and FSAR Table 2.0-1R	Revised notes.	2
CTS-01125	Table 2.0-1R (Sheet 3 of 12)	2.0-4	Erratum	Corrected typographical error from the revision for RCOL2_02.03.04-4	2
CTS-01120	2.2.3.1.1.3	2.2-14 [2.2-13]	Erratum	Corrected typographical error to reflect correct subsection in DCD Revision 2.	2
CTS-01120	2.3	2.3-1	Erratum	Corrected typographical error for the referenced table number.	2
CTS-01120	2.3.4 2.3.4.1 2.3.4.2	2.3-39 [2.3-40]	Errata	Removed the COLA item instructions and added COLA items to be consistent with DCD Rev 2.	2

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01120	2.3.5 2.3.5.1 2.3.5.2	2.3-43 [2.3-45]	Errata	Removed the COLA item instructions and added COLA items to be consistent with DCD Rev 2.	2
CTS-01121	2.5.1.1.2	2.5-5	Erratum	Corrected typographical error to reflect correct figure references.	2
CTS-01126	2.5.2.1.3.2	2.5-74	Erratum	Corrected reference number “Ref 2.5.2-213” to “Reference 2.5.2-378” and set as a link in red text.	2
CTS-01126	2.5.2.5.2.1	2.5-120	Erratum	Removed the notation in the text for Reference TXUT-001-PR-007 from the revision for RCOL2_03.07.02-5.	2
CTS-01110	Table 2.5.1-206 Through 2.5.1-220	2.5-281 Through 2.5-302 [2.5-285 through 2.5-302]	Duplicated information	Deleted duplication of tables from Subsection 2.5.2.	2
CTS-01111	Table 2.5.2-234 2.5.2-235 2.5.2-237	2.5-352 3.5-353 2.5-355 2.5-356	Errata	Corrected typographical errors that represented incorrect numbers.	2
CTS-00921	Figure 2.5.4-227	-	Errata	Corrected few plot points that were misscolored and did not comply with the Legend of this Figure.	2

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00921	Figure 2.5.5-205 through 2.5.5-212	-	Revised to clarify geologic layers	The colors related to soil on the figures are revised, to be consistent with the revision to figures in provided for RCOL2_02.05.05-1	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Table 2.0-1R (Sheet 1 of 12)
Key Site Parameters

CP COL 2.1(1)
CP COL 2.2(1)
CP COL 2.3(1)
CP COL 2.4(1)
CP COL 2.5(1)

Meteorology		
Parameter Description	**Parameter Value**	
	DCD	**CPNPP 3 and 4**
Normal winter precipitation roof load(11)	50 lb/ft^2	(11.7 lb/ft^2)
Extreme winter precipitation roof load(12) ~~(100-year snowpack maximum snow weight including contribution portion of either extreme frozen winter precipitation event or extreme liquid winter precipitation event)~~	75 lb/ft^2	(37.8 lb/ft^2)
48-hr probable maximum winter precipitation (PMWP)	36 in	31 in
Tornado maximum wind speed	230 mph	(230 mph)
	184 mph maximum rotational	(184 mph)
	46 mph maximum translational	(46 mph)
Radius of maximum rotational speed	150 ft	(150 ft)
Rate of Pressure drop	0.5 psi/s	(0.5 psi/s)
Tornado maximum pressure drop	1.2 psi	(1.2 psi)
Tornado-generated missile spectrum and associated velocities	15 ft long schedule 40 steel pipe moving horizontally at 135 ft/s~~(a)~~(1)	15 ft long schedule 40 steel pipe moving horizontally at 135 ft/s~~(a)~~(1)
	4000 lb automobile moving horizontally at 135 ft/s~~(a)~~(1)	4000 lb automobile moving horizontally at 135 ft/s~~(a)~~(1)
	1 in diameter steel sphere moving horizontally at 26 ft/s~~(a)~~(1)	1 in diameter steel sphere moving horizontally at 26 ft/s~~(a)~~(1)

CTS-01125
CTS-01125

Table 2.0-1R (Sheet 3 of 12)
Key Site Parameters

	Food production area annual average		5.0×10^{-6} s/m^3	Not calculated as a single value. Annual average χ/Q values provided as a function of distance and direction out to a 50-mile distance.
CP COL 2.1(1)	*Deposition factor (D/Q value) for on-site and off-site locations:*			
CP COL 2.2(1) CP COL 2.3(1)	EAB annual average		4.0×10^{-8} 1/m^2	$5.5\text{x}10^{-8}$ 1/m^2
CP COL 2.3(2) CP COL 2.3(3)	*Atmospheric dispersion factors (χ/Q values) for main control room (MCR) heating, ventilation, and air conditioning (HVAC) intake for specified release points~~(b)~~(2):*			
CP COL 2.4(1) CP COL 2.5(1)	Plant vent~~(c)~~(5) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	1.1×10^{-3} s/m^3 6.6×10^{-4} s/m^3 4.2×10^{-4} s/m^3 1.9×10^{-4} s/m^3	East HVAC Intake 0 – 2 hours: ~~6.9E-04~~6.3E-04 2 – 8 hours: ~~4.4E-04~~4.1E-04 8 – 24 hours: ~~1.8E-04~~1.7E-04 1 – 4 days: ~~1.2E-04~~1.1E-04 4 – 30 days: ~~9.8E-05~~9.0E-05	West HVAC Intake 0 – 2 hours: ~~1.0E-03~~9.4E-04 2 – 8 hours: ~~7.6E-04~~7.3E-04 8 – 24 hours: ~~3.2E-04~~3.1E-04 1 – 4 days: ~~2.0E-04~~1.9E-04 4 – 30 days: ~~1.7E-04~~1.6E-04

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Table 2.0-1R (Sheet 4 of 12)
Key Site Parameters

CP COL 2.1(1)
CP COL 2.2(1)
CP COL 2.3(1)
CP COL 2.3(2)
CP COL 2.3(3)
CP COL 2.4(1)
CP COL 2.5(1)

Ground-level containment releases~~(c)~~(4) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	2.2×10^{-3} s/m^3 1.3×10^{-3} s/m^3 8.3×10^{-4} s/m^3 3.6×10^{-4} s/m^3	East HVAC Intake Containment Shell 0 – 2 hours: ~~8.0E-04~~7.5E-04 2 – 8 hours: ~~5.2E-04~~5.1E-04 8 – 24 hours: ~~2.3E-04~~2.2E-04 1 – 4 days: 1.4E-04 4 – 30 days: ~~1.2E-05~~1.2E-05	West HVAC Intake Containment Shell 0 – 2 hours: ~~9.1E-04~~8.7E-04 2 – 8 hours: ~~6.4E-04~~6.1E-04 8 – 24 hours: ~~2.9E-04~~2.7E-04 1 – 4 days: ~~1.8E-04~~1.7E-04 4 – 30 days: 1.4E-04

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Table 2.0-1R (Sheet 5 of 12)
Key Site Parameters

CP COL 2.1(1)
CP COL 2.2(1)
CP COL 2.3(1)
CP COL 2.3(2)
CP COL 2.3(3)
CP COL 2.4(1)
CP COL 2.5(1)

Main steam relief valve and safety valve releases~~(d)~~(6) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	5.3×10^{-3} s/m^3 3.1×10^{-3} s/m^3 2.0×10^{-3} s/m^3 8.7×10^{-4} s/m^3	East HVAC Intake Main Steam Relief Valves 0 – 2 hours: ~~3.1~~2.9E-03 2 – 8 hours: ~~1.8~~1.7E-03 8 – 24 hours: ~~7.3~~6.9E-04 1 – 4 days: ~~5.3~~4.9E-04 4 – 30 days: ~~4.2~~3.9E-04 East HVAC Intake Main Steam Safety Valves 0 – 2 hours: ~~3.6~~3.3E-03 2 – 8 hours: ~~2.0~~1.9E-03 8 – 24 hours: ~~8.3~~7.6E-04 1 – 4 days: ~~6.1~~5.4E-04 4 – 30 days: ~~4.2E-05~~3.8E-04	West HVAC Intake Main Steam Relief Valves 0 – 2 hours: ~~3.7~~3.4E-03 2 – 8 hours: ~~2.7~~2.4E-03 8 – 24 hours: ~~1.1E-03~~9.9E-04 1 – 4 days: ~~7.2~~6.6E-04 4 – 30 days: ~~4.9~~4.5E-04 West HVAC Intake Main Steam Safety Valves 0 – 2 hours: ~~4.6~~4.1E-03 2 – 8 hours: ~~3.0~~2.7E-03 8 – 24 hours: ~~1.2~~1.1E-03 1 – 4 days: ~~8.9~~8.1E-04 4 – 30 days: ~~5.6~~5.1E-04

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Table 2.0-1R (Sheet 6 of 12)
Key Site Parameters

CP COL 2.1(1)
CP COL 2.2(1)
CP COL 2.3(1)
CP COL 2.3(2)
CP COL 2.3(3)
CP COL 2.4(1)
CP COL 2.5(1)

Steam line break releases[8] 0-8 hrs 8-24 hrs 1-4 days 4-30 days	1.9×10^{-2} s/m^3 1.1×10^{-2} s/m^3 7.1×10^{-3} s/m^3 3.1×10^{-3} s/m^3	East HVAC Intake Main Steam Line 0 – 2 hours: ~~1.5~~1.6E-02 2 – 8 hours: ~~7.7~~8.3E-03 8 – 24 hours: ~~3.2~~3.5E-03 1 – 4 days: ~~2.4~~2.5E-03 4 – 30 days: ~~1.6~~1.7E-03	West HVAC Intake Main Steam Line 0 – 2 hours: ~~7.2~~6.6E-03 2 – 8 hours: ~~4.5~~4.3E-03 8 – 24 hours: ~~1.9~~1.8E-03 1 – 4 days: ~~1.4~~1.3E-03 4 – 30 days: ~~9.4~~8.9E-04
Fuel handling area releases~~(e)~~[7] 0-8 hrs 8-24 hrs 1-4 days 4-30 days	~~9.9×10^{-4} s/m^3~~ 1.1×10^{-3} s/m^3 ~~5.9×10^{-4} s/m^3~~ 6.4×10^{-4} s/m^3 ~~3.7×10^{-4} s/m^3~~ 4.1×10^{-4} s/m^3 ~~1.6×10^{-4} s/m^3~~ 1.8×10^{-4} s/m^3	East HVAC Intake 0 – 2 hours: 9.6E-04 2 – 8 hours: 7.5E-04 8 – 24 hours: 3.1E-04 1 – 4 days: 2.0E-04 4 – 30 days: 1.7E-04	West HVAC Intake 0 – 2 hours: ~~5.7~~5.4E-04 2 – 8 hours: ~~4.3~~4.1E-04 8 – 24 hours: ~~1.8~~1.7E-04 1 – 4 days: 1.1E-04 4 – 30 days: ~~8.0~~7.8E-05

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Table 2.0-1R (Sheet 7 of 12)
Key Site Parameters

CP COL 2.1(1)
CP COL 2.2(1)
CP COL 2.3(1)
CP COL 2.3(2)
CP COL 2.3(3)
CP COL 2.4(1)
CP COL 2.5(1)

~~Auxiliary building (A/B) releases (reactor coolant system sample line)~~ ~~0-8 hrs~~ ~~8-24 hrs~~ ~~1-4 days~~ ~~4-30 days~~	 ~~2.2×10^{-3} s/m^3~~ ~~1.3×10^{-3} s/m^3~~ ~~8.4×10^{-4} s/m^3~~ ~~3.7×10^{-4} s/m^3~~	~~Dispersion of releases from the reactor coolant sample line are bounded by the dispersion values for the plant vent.~~
~~Air lock releases in containment~~ ~~0-8 hrs~~ ~~8-24 hrs~~ ~~1-4 days~~ ~~4-30 days~~	 ~~4.7×10^{-3} s/m^3~~ ~~2.8×10^{-3} s/m^3~~ ~~1.8×10^{-3} s/m^3~~ ~~7.7×10^{-4} s/m^3~~	~~Air lock χ/Q values bounded by the χ/Q values for the Containment Shell release.~~
Atmospheric dispersion factors (χ/Q values) for MCR inleak for specified release points~~(h)~~(3):		
Plant vent ~~to reactor building (R/B) door~~~~(i)~~(9) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	 1.3×10^{-3} s/m^3 ~~7.7~~7.8$\times10^{-4}$ s/m^3 4.9×10^{-4} s/m^3 2.2×10^{-4} s/m^3	Bounded by the χ/Q values calculated for the Main Control Room HVAC ~~intakes bound those for the Reactor Building door~~ See plant vent to Main Control Room intake (above)~~(i)~~(13)
Plant vent ~~to A/B HVAC intake~~~~(k)~~(10) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	 1.4×10^{-3} s/m^3 8.0×10^{-4} s/m^3 5.1×10^{-4} s/m^3 2.2×10^{-4} s/m^3	Bounded by the χ/Q values calculated for the Main Control Room HVAC ~~intakes bound those for the A/B HVAC intake~~ See plant vent to Main Control Room intake (above)~~(i)~~(13)

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Table 2.0-1R (Sheet 8 of 12)
Key Site Parameters

CP COL 2.1(1)
CP COL 2.2(1)
CP COL 2.3(1)
CP COL 2.3(2)
CP COL 2.3(3)
CP COL 2.4(1)
CP COL 2.5(1)

Ground-level containment releases to Class 1E electrical room HVAC intake~~(e)~~(4) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	 2.4×10^{-3} s/m^3 1.4×10^{-3} s/m^3 9.1×10^{-4} s/m^3 4.0×10^{-4} s/m^3	~~χ/Q values calculated for the Main Control Room HVAC intakes bound those for the Class 1E electrical room HVAC intake~~ See ground-level containment releases to Main Control Room intake (above)~~(i)~~(13)
Main steam relief valve and safety valve releases~~(d))~~(6) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	 5.3×10^{-3} s/m^3 3.1×10^{-3} s/m^3 2.0×10^{-3} s/m^3 8.7×10^{-4} s/m^3	See main steam relief valve and safety valve releases to Main Control Room intake (above)~~(i)~~(13)
Steam line break releases(8) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	 1.9×10^{-2} s/m^3 1.1×10^{-2} s/m^3 7.1×10^{-3} s/m^3 3.1×10^{-3} s/m^3	See steam line break releases to Main Control Room intake (above)~~(i)~~(13)
Fuel handling area releases~~(e)~~(7) 0-8 hrs 8-24 hrs 1-4 days 4-30 days	 1.1×10^{-3} s/m^3 6.7×10^{-4} s/m^3 4.3×10^{-4} s/m^3 1.9×10^{-4} s/m^3	See fuel handling area releases to Main Control Room intake (above)~~(i)~~(13)

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Table 2.0-1R (Sheet 9 of 12)
Key Site Parameters

CP COL 2.1(1)
CP COL 2.2(1)
CP COL 2.3(1)
CP COL 2.3(2)
CP COL 2.3(3)
CP COL 2.4(1)
CP COL 2.5(1)

~~A/B releases (reactor coolant system sample line~~ ~~0-8 hrs~~ ~~8-24 hrs~~ ~~1-4 days~~ ~~4-30 days~~	 ~~4.9×10^{-3} s/m^3~~ ~~2.9×10^{-3} s/m^3~~ ~~1.8×10^{-3} s/m^3~~ ~~8.1×10^{-4} s/m^3~~	~~Dispersion of releases from the reactor coolant sampling line are bounded by the dispersion values for the plant vent.~~
~~Air lock releases in containment~~ ~~0-8 hrs~~ ~~8-24 hrs~~ ~~1-4 days~~ ~~4-30 days~~	 ~~6.4×10^{-3} s/m^3~~ ~~3.8×10^{-3} s/m^3~~ ~~2.4×10^{-3} s/m^3~~ ~~1.1×10^{-3} s/m^3~~	~~χ/Q values for the air lock releases in containment are bounded by the χ/Q for the Containment Shell release.~~

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Hydrologic Engineering

Parameter Description	Parameter Value	
	DCD	CPNPP 3 and 4
Maximum flood (or tsunami) level	1 ft below plant grade	790.9 ft msl for SCR 820.83 ft msl for a Local Intense Precipitation at units 3 and 4 site.
Maximum rainfall rate (hourly)	19.4 in/hr for seismic category I/II structures	19.0 in/hr
Maximum rainfall rate (short-term)	6.3 in/5 min for seismic category I/II structures	6.2 in/5 min
Maximum groundwater level	1 ft below plant grade	1 ft below plant grade

CP COL 2.1(1)
CP COL 2.2(1)

Table 2.0-1R (Sheet 11 of 12)
Key Site Parameters

CP COL 2.1(1) CP COL 2.2(1) CP COL 2.3(1) CP COL 2.3(2) CP COL 2.3(3) CP COL 2.4(1) CP COL 2.5(1)	SSE (certified seismic design) vertical ground response spectra	RG 1.60, enhanced spectra in high frequency range (see Figure 3.7.1-2)	For vertical FIRS motions, the same considerations used for the GMRS were used for the FIRS. That is, for large source-to-site distances, results in the ~~US APWR DCD~~NUREG/CR-6728 indicate that V/H ratios will be less than unity for all frequencies. V/H ratios are likely to be considerably less than unity at frequencies below 5 Hz. Appendix J of ~~the DCD~~NUREG/CR-6728 indicates that for distances exceeding 40 km, soil sites in both the WUS and CEUS will have V/H ratios of 0.5 or less. Thus it is reasonable to assume that vertical FIRS will be enveloped by the vertical minimum DCD spectrum.	CTS-00916 CTS-00916
	Potential for surface tectonic deformation at site	None within the exclusion area boundary	No potential tectonic surface deformation has been identified at the site.	
	Subsurface stability – ~~average~~minimum allowable static bearing capacity	15,000 lb/ft^2	The ~~average~~minimum allowable bearing capacity of the foundation bearing stratum meets or exceeds the DCD requirement	CTS-01125
	Subsurface stability – ~~average~~minimum allowable dynamic bearing capacity, normal conditions plus SSE	~~95,000~~60,000 lb/ft^2	The ~~average~~minimum allowable dynamic bearing capacity of the foundation bearing stratum meets or exceeds the DCD requirement	
	Subsurface stability – minimum shear wave velocity at SSE input at ground surface	1000 ft/s	The site stratigraphy has a measured velocity in excess of 1000 ft/sec	
	Subsurface stability – shear wave velocity for defining firm rock	3500 ft/s	The site meets the minimum 3500ft/sec for a firm rock site	
	Subsurface stability – shear wave velocity for defining firm to hard rock	6500 ft/s	The site does not meet the Vs for a firm to hard rock site	
CP COL 2.1(1) CP COL 2.2(1)	Subsurface stability – shear wave velocity for defining hard rock	8000 ft/s	The site does not meet the Vs for a hard rock site	

Table 2.0-1R (Sheet 12 of 12)
Key Site Parameters

CP COL 2.3(1)
CP COL 2.3(2)

Subsurface stability – liquefaction potential	None (for seismic category I structures)	The site strata is not prone to liquefaction
Settlement	Total settlement of R/B complex foundation(14)(15) 6.0 in. Differential settlement across R/B complex foundation(14)(15) 2.0 in. Maximum differential settlement between buildings(14)(16) 0.5 in. Maximum tilt of R/B complex foundation generated during operational life of the plant(14)(16) 1/2000	Maximum and differential settlement of all the seismic Category I buildings and structures including R/B, PS/B, ESWPT, UHSRS and PSFSV less than 1/2 in.

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NOTES:

~~a)~~1. The specified missiles are assumed to have a vertical speed component equal to 2/3 of the horizontal speed.

~~b)~~2. These dispersion factors are chosen as the maximum values at all intake points.

~~c)~~3. These dispersion factors are ~~used for a loss-of-coolant accident (LOCA) and a rod ejection accident~~chosen as the maximum values at all inleak points.

~~d)~~4. These dispersion factors are used for a ~~steam generator tube rupture, a steam system piping failure, a reactor coolant pump rotor seizure~~loss-of-coolant accident (LOCA) and a rod ejection accident.

~~e)~~5. These dispersion factors are used for a ~~fuel handling accident occurring in the fuel storage and handling area~~LOCA, a rod ejection accident, a failure of small lines carrying primary coolant outside containment and a fuel-handling accident inside the containment.

~~f)~~6. These dispersion factors are used for a ~~failure of small lines carrying primary coolant outside containment~~steam generator tube rupture, a steam system piping failure, a reactor coolant pump rotor seizure and a rod ejection accident.

~~g)~~7. These dispersion factors are used for a fuel-handling accident ~~inside the containment~~occurring in the fuel storage and handling area.

~~h)~~8. These dispersion factors are ~~chosen as the maximum values at all inleak points~~used for a steam system piping failure. CTS-01125

~~i)~~9. These dispersion factors are used for a LOCA.

~~j) χ/Qs were conservatively determined using the distances from each release location to the closer of either the Electrical Room HVAC or the Control Room HVAC intake. For all release locations except the main steam line break, the Class 1E Electrical Room HVAC intakes are closer to the release points than the Control Room HVAC intakes.~~

~~k)~~10. These dispersion factors are used for a rod ejection accident~~.~~, a failure of small lines carrying primary coolant outside containment and a fuel-handling accident inside the containment.

11. Normal winter precipitation roof load is determined by converting ground snow load p_g in accordance with ASCE 7-05. The ground snow load p_g is based on the highest ground-level weight of:

- the 100-year return period snowpack,
- the historical maximum snowpack,
- the 100-year return period snowfall event, or
- the historical maximum snowfall event in the site region.

12. The extreme winter precipitation roof load is based on the sum of the normal ground level winter precipitation plus the highest weight at ground level resulting from either the extreme frozen winter precipitation event or the extreme liquid winter precipitation event. The extreme frozen winter precipitation event is assumed to accumulate on the roof on top of the antecedent normal winter precipitation event. The extreme liquid winter precipitation event may not accumulate on the roof, depending on the geometry of the roof and the type of drainage provided. The extreme winter precipitation roof load is included as live load in extreme loading combinations using the applicable load factor indicated in DCD Section 3.8.

13. χ/Qs were conservatively determined using the distances from each release location to the closer of either the Electrical Room HVAC or the Control Room HVAC intake. For all release locations except the main steam line break, the Class 1E Electrical Room HVAC intakes are closer to the release points than the Control Room HVAC intakes.

14. Acceptable parameters for settlement without further evaluation.

15. Settlements occuring during construction and operational life.

16. Settlements occuring during operational life only.

Five registered underground storage tanks are located within 5 mi of the center point of CPNPP Units 3 and 4, three at Martha A. Newkirk and two at Somervell County Maintenance Department. Underground storage tanks do not represent a fire or explosion hazard. Any fuel that leaks from the tanks will be absorbed into the ground and will not be exposed to the atmosphere. No evaporation occurs and consequently no flammable vapor cloud can be formed because the fuels are not exposed to the atmosphere, eliminating the need for investigation. The one registered aboveground tank within 5 mi of the site is located at the IESI fleet refueling facility located approximately 4 mi south-southeast of the center point of CPNPP Units 3 and 4. This tank contains diesel fuel and is not considered to be volatile enough to represent a hazard at the CPNPP Units 3 and 4 site.

The CPNPP Units 1 and 2 on-site storage tanks listed in Table 2.2-211 were evaluated with respect to potential explosion hazards at CPNPP Units 3 and 4. It was concluded that these storage tanks meet the safe standoff distance requirements of Regulatory Guide 1.91. Of the tanks listed in Table 2.2-211, the tank that represents the greatest explosion hazard for CPNPP Units 3 and 4 is the propylene tank at the Bulk Gas Storage Facility. The CPNPP Units 1 and 2 Bulk Gas Storage Facility is located 1450 ft from the nearest safety-related structure at CPNPP Units 3 and 4. Based on the methodology of Regulatory Guide 1.91, the safe standoff distance for the propylene tank is 1174 ft for an unconfined vapor explosion. For a confined vapor explosion, the safe standoff distance is 581 ft.

Cleburne Propane is located 3.6 mi east-southeast of the nearest CPNPP Units 3 and 4 safety-related structures. The total amount of propane stored on-site among the four tanks and trucks is approximately 56,400 gal. Assuming this aggregate amount of propane is detonated, the safe standoff distance for a confined vapor explosion was determined, per the methodology of Regulatory Guide 1.91, to be 0.28 mi, and the safe standoff distance for an unconfined vapor explosion was determined to be 0.54 mi. The results for the confined and unconfined local vapor explosion are less than the actual standoff distance of 3.6 mi. Therefore, the postulated propane explosion at Cleburne Propane does not generate an overpressure above 1 psi at CPNPP Units 3 and 4.

2.2.3.1.1.3 On-site Explosion Hazards

Gas explosions from on-site sources outside containment at CPNPP Units 3 and 4 are not credible sources of missile generation per DCD Subsection 3.5.1~~.1.2.1~~. CTS-01120
The chemicals used for the Makeup Water Treatment System are not flammable or explosive.

2.2.3.1.1.4 Gas Wells - Explosives

One technique used to control wellhead fires is the use of explosives to remove the oxygen from the air and thereby suffocate the fire. Potential wellhead fires in the Barnett Shale formation do not have sufficient flow rates to warrant the use of explosives to extinguish them. For the wells in this area, the wellhead fire fighters would use a water spray to extinguish the fire and then proceed to cap the

2.3 METEOROLOGY

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP SUP 2.3(1) Add the following paragraph after the paragraph in DCD Section 2.3.

This section provides a description of the meteorology of the site and its surrounding areas. Table ~~2.0-201~~2.0-1R gives a comparison of the key Comanche Peak Nuclear Power Plant (CPNPP) site meteorological characteristics with the DCD design parameters. CTS-01120

2.3.1 Regional Climatology

CP COL 2.3(1) Replace the content of DCD Subsection 2.3.1 with the following.

This subsection describes the general climate of the region with respect to types of air masses, synoptic features (high- and low-pressure systems and frontal systems), general airflow patterns (wind direction and speed), temperature, humidity, precipitation (rain, snow, sleet, and freezing rain), potential influences from regional topography, and relationships between synoptic-scale atmospheric processes and local (site) meteorological conditions.

2.3.1.1 General Climate

From the hot, dry desert of Far West Texas and the blue northers that blast the Llano Estacado to the humid, rainy pine forests of East Texas and the hurricanes that sweep across the Gulf Coast, Texas' climate is as varied as its landscape. That variability is a result of the interactions between Texas' unique geographic location and the movements of seasonal air masses, such as arctic fronts, the jet stream, subtropical west winds, tropical storms, and a subtropical high pressure system known as the Bermuda High (Figure 2.3-201). (Reference 2.3-201) The location of Texas with relation to the North American continent, the warm Gulf of Mexico, and the not-far-distant Pacific Ocean guarantees a constant exchange of settled and unstable weather. The state's varied physiography, from the forests of the east and the Coastal Plain in the south to the elevated plateaus and basins in the north and west, also brings a wide variety of weather on almost any day of the year. Because of its expansive and topographically diverse nature, Texas offers continental, marine, and mountain-type climates. West of the Caprock on the High Plains, a continental climate, marked by cold winters and low humidity, predominates. In the Trans-Pecos, a form of mountain climate is found. The eastern two-thirds of Texas, on the other hand, have a humid, subtropical climate that is occasionally interrupted by intrusions of cold air from the north. Though variations in climate across Texas are considerable, they are nonetheless gradual. (Reference 2.3-202)

2.3.4 Short-Term Atmospheric Dispersion Estimates for Accident Releases

CP COL 2.3(2) Replace the content of DCD Subsection 2.3.4 with the following. CTS-01120

2.3.4.1 Objective

~~CP COL 2.3(2) Add the following after the first paragraph in DCD Subsection 2.3.4.1.~~

The on-site meteorological data record at CPNPP site for the period 2001 through ~~2004 and~~ 2006 has been used to calculate dilution factors which can be anticipated in the event of an accidental release of radionuclides into the atmosphere. The two-hour dilution factors are calculated at the exclusion area boundary (EAB); for longer time periods the factors are calculated at the outer boundary of the low population zone (LPZ). RCOL2_02.03.04-3

The consequence of a design basis accident in terms of personnel exposure is a function of the atmospheric dispersion conditions at the site of the potential release. Atmospheric dispersion consists of two components: 1) atmospheric transport due to organized or mean airflow within the atmosphere and 2) atmospheric diffusion due to disorganized or random air motions. Atmospheric diffusion conditions are represented by atmospheric dispersion factor (c/Q) values. This subsection describes the development of the short-term diffusion estimates for the site boundary and the control room. A description of the atmospheric dispersion modeling used in evaluating potential the consequences of hazardous material releases is given in Subsection 2.3.4.5.

2.3.4.2 Calculations

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~~CP COL 2.3(2) Add the following after the last sentence in DCD Subsection 2.3.4.2.~~

The efficiency of diffusion is primarily dependent on winds (speed and direction) and atmospheric stability characteristics. Dispersion is rapid within Stability Classes A through D and much slower for Classes E through G. That is, atmospheric dispersion capabilities decrease with progression from Class A to Class G, with an abrupt reduction from Class D to Class E (Regulatory Guide 1.145 and NUREG/CR-2858).

Relative concentrations of released gases, c/Q values, as a function of direction for various time periods at the exclusion area boundary (EAB) and the outer boundary of the low population (LPZ), were determined by the use of the computer code PAVAN (NUREG/CR-2858). This code implements the guidance provided in Regulatory Guide 1.145. The c/Q calculations are based on the theory that material released to the atmosphere will be normally distributed (Gaussian) about the plume centerline. A straight-line trajectory is assumed between the point

CP COL 2.3(3) Replace the content of DCD Subsection 2.3.5 with the following. CTS-01120

2.3.5.1 Objective

~~CP COL 2.3(3) Replace the content of DCD Subsection 2.3.5.1 with the following.~~ CTS-01120

The on-site meteorological record is used to provide realistic estimates of annual average atmospheric dilution factors to a distance of 50 mi from the plant for use in calculating the dispersion through air pathways of radionuclides released in routine plant operations.

2.3.5.2 Calculations

~~CP COL 2.3(3) Add the following subsection after DCD Subsection 2.3.5.2.~~ CTS-01120

2.3.5.2.1 Plant Vent

The average annual dilution factors which are applicable to routine venting or other routine gaseous-effluent releases have been evaluated from the data record using the technique presented in Regulatory Guide 1.111.

For a routine release, the concentration of radioactive material in the surrounding region depends on the amount of effluent released, the height of the release, the momentum and buoyancy of the emitted plume, the wind speed, atmospheric stability, airflow patterns of the site, and various effluents removal mechanisms. Annual average relative concentration, c/Q, and annual average relative deposition, D/Q, for gaseous effluent routine releases were, therefore, calculated.

The XOQDOQ Computer Program (NUREG/CR-2919), which implements the assumptions outlined in Regulatory Guide 1.111 developed by the USNRC, was used to generate the annual average relative concentration, c/Q, and annual average relative deposition, D/Q. Values of c/Q and D/Q were determined at points of maximum potential concentration outside the site boundary, at points of maximum individual exposure and at points within a radial grid of sixteen 22-1/2° sectors and extending to a distance of 50 mi. Radioactive decay and dry deposition were considered.

Meteorological data for the period from 2001 through 2004 and 2006 were used, and receptor locations were determined from the locations given in the current land-use census (Reference 2.3-223). An assumed release point located at the center point between Units 3 and 4 was used to calculate c/Q and D/Q values beyond the EAB. For c/Q and D/Q values calculated at the EAB, the distance is measured from an assumed release boundary, with a 670 ft radius from the containment centerline, to the EAB. Hourly meteorological data were used in the development of joint frequency distributions, in hours, of wind direction and wind speed by atmospheric stability class. The wind speed categories used were consistent with the CPNPP short-term (accident) diffusion c/Q calculation discussed above. Calms were distributed as the first wind speed class.

Most of the Edwards Plateau consists of a broad plateau of smooth plains and tablelands, with a stair-step topographic expression due to the erosion of interbedded hard carbonates and softer shales. However, this plateau is dissected near the Balcones Escarpment to form the Hill Country, where elevations range from about 450 to 3000 ft msl. In many locations, karstic dissolution of the more calcareous units is expressed topographically as sinkholes and caverns.

2.5.1.1.1.5 Central Texas (Llano) Uplift Province

The Central Texas (Llano) Uplift, although termed an uplift, is a large, enclosed, topographic basin located in the northern portion of the Edwards Plateau area. The basin is floored by metasedimentary and metaigneous crystalline rocks and is rimmed by lower Paleozoic sedimentary strata. These rocks represent the Laurentian Margin cratonic basement and platform shelf cover sequence that has been uplifted to shallow levels and exposed by erosion.

The floor of the basin consists of rolling topography with occasional hills 400 to 600 ft in relief that form from the more erosion-resistant granitic rocks. Surface elevations in this province range from 800 to 2000 ft msl. The concentric ridge around the outer edge of the basin comprises resistant rocks of Lower Paleozoic age. A second concentric outer rim is formed by erosion-resistant limestones of the Edwards Plateau.

2.5.1.1.2 Regional Stratigraphy and Geologic History

The site region (200-mi radius) for CPNPP Units 3 and 4 encompasses an area that is transected by the Laurentian cratonic edge, which formed by the breakup of the Rodinian continental mass in the Late Proterozoic Era and Early Cambrian Period. This breakup was accommodated in the site region by a pronounced change in orientation of the Laurentian Margin at this location from a northerly trend to a more east–west orientation. This change in orientation is now expressed in map patterns of the physiography and geologic units (Figures 2.5.1-201, Figure 2.5.1-202a and Figure 2.5.1-202b ~~and 2.5.1-202~~), in addition to expression by the regional gravity and magnetic fields (Figures 2.5.1-205 and 2.5.1-206). This change in the orientation of the Laurentian Margin has been interpreted as resulting from a triple point from which rifting was accomplished along the south-trending arm and the east–west-trending arm. The northwest-trending arm of the triple point became a failed rift that now forms the Southern Oklahoma Aulacogen (Reference 2.5-203). Subsequent interpretations have associated the features described above, with an oceanic transform in which the east-west-trending arm represents a transform margin and the northwest-trending arm a “leaky transform” (Reference 2.5-204). Regardless of origin, this basic structure forms a template that has affected the subsequent tectonic, stratigraphic, and structural development and associated geophysical expression for the region. CTS-01121

immediately surrounding CPNPP Units 3 and 4 (Figure 2.5.2-201). Magnitudes reported below are Emb magnitudes from the EPRI-SOG catalog (References 2.5-369 and 2.5-370).

1811 to 1812 Emb 7.0 to 7.4 New Madrid, Missouri

Frohlich and Davis (Reference 2.5-378) note that there were no reliable earthquake accounts in Texas prior to 1847, but they mention that the series of New Madrid, Missouri, earthquakes between 1811 and 1812 (December 16, 1811, Emb 7.2; December 16, 1811, Emb 7.0; January 23, 1812, Emb 7.1; February 7, 1812, Emb 7.4) event would have been felt in Texas, assuming isoseismal intensities from the earthquakes are roughly symmetrical about the epicentral area. Frohlich and Davis (Reference 2.5-378) reproduce a figure of Carlson (Reference 2.5-384) that estimates the intensity in the region of CPNPP Units 3 and 4 from the events as MMI IV to V.

October 22, 1882, Emb 5.4 Fort Gibson, Oklahoma

Frohlich and Davis (~~Ref 2.5.2 213~~Reference 2.5-378) present an isoseismal map of the October 22, 1882, Fort Gibson earthquake as having intensities of MMI I to III within the region surrounding CPNPP Units 3 and 4, but they also state that Dallas newspapers at the time reported felt effects at more proximal cities but not in Dallas. Since Dallas is closer to the epicenter than is CPNPP Units 3 and 4, it is reasonable to assume that intensities at CPNPP Units 3 and 4 were very low if at all detectable. This is discussed in the FSAR for CPNPP Units 1 and 2 (Reference 2.5-201). CTS-01126

August 16, 1931, Emb 5.8 Valentine, Texas

Frohlich and Davis (Reference 2.5-378) report that the August 16, 1931, Emb 5.8 earthquake in Valentine, Texas, was felt as far east as Waco, Dallas, San Antonio, and Houston. Felt reports that Frohlich and Davis (Reference 2.5-378) compiled suggest intensities within the region surrounding CPNPP Units 3 and 4 of approximately MMI III to IV. Doser (Reference 2.5-303) determined a normal faulting mechanism with extension oriented northwest-southeast for the event and attribute the event to rupture along the Mayfield fault, a range-bounding fault within the Basin and Range physiographic province (Reference 2.5-385). This event is also discussed in the FSAR for CPNPP Units 1 and 2 (Reference 2.5-201) where it is reported as having an intensity of MMI II to III at the site. The measured intensity range (MMI II to III) is more precise than the felt intensity range (MMI III to IV) from the historical record.

April 9, 1952, Emb 4.9 El Reno, Oklahoma

Frohlich and Davis (Reference 2.5-378) present an isoseismal map for the April 9, 1952, Emb 4.9 El Reno earthquake as having intensities of MMI I to III near CPNPP Units 3 and 4. The closest felt reports to CPNPP Units 3 and 4 summarized by Frohlich and Davis (Reference 2.5-378) include swaying in the

generic values given by Co~~n~~stantino, ~~(~~Reference 2.5-433). The correlation coefficient between ln(G/Gmax) and ln(damping) in the fill is specified as -0.75. This implies that in synthetic profiles where the fill has higher than average G/Gmax, the fill tends to have lower than average damping. The degradation and damping properties are treated as fully correlated among layers in the same geological unit, but independent between different units. Figure 2.5.2-244 shows the damping ratios for the Strawn formation in the 60 synthetic profiles corresponding to FIRS1. Similarly, Figure 2.5.2-245 shows the G/Gmax and damping ratios for the 60 synthetic profiles corresponding to FIRS4. A sensitivity study that evaluates the effect of using strain-dependent shear-modulus degradation (G/Gmax) and damping ratio, instead of using constant shear-modulus degradation (G/Gmax =1) and constant damping ratio. Results from this study indicate that the spectra at the top of the profile obtained with the constant material properties are slightly higher than those obtained with strain-dependent properties. The profile with constant material properties was used to develop all FIRS (GMRS/FIRS1, FIRS2, FIRS2, FIRS4, and FIRS4_CoV50), as presented in Subsection 2.5.2.6, and to develop the inputs for the SSI analysis in Subsection 3.7.2.

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Each set of 60 synthetic profiles, consisting of Vs and unit weight vs. depth, depth to bedrock, stiffness, and damping curves, is used to calculate and quantify site response and its uncertainty, as described below.

2.5.2.5.2.2 Selection of Rock Input Motions

Rock input motions were selected for input to the site response calculations using the seismic hazard results presented in Subsection 2.5.2. Uniform hazard response spectra (UHRS) for rock conditions corresponding to mean annual exceedence frequencies of 10^{-4}, 10^{-5}, and 10^{-6} were used. The base spectrum for each mean annual exceedence frequency was a broad-banded (BB) spectrum, because deaggregation and fitting of high-and low-frequency (HF and LF) spectra indicated the same high-frequency amplitudes. These spectra are plotted in Figures 2.5.2-229 through 2.5.2-231 and are given in tabular form in Table C:\Documents and Settings\Q014776\My Documents\Framemaker Files\Files for Editing\Rev 1\Backup 02262010\FSAR\CHAP02\FSAR_TBL02_05_02_219.fm. The development of these spectra is documented in Subsection 2.5.2.4.4. The effect of choosing a broad-banded spectrum was investigated by also computing response to the 10^{-4} HF spectrum, and comparing that response to the 10^{-4} BB spectrum, as described in the next subsection.

2.5.2.5.2.3 Site Response Calculations

The site response calculations for Comanche Peak were performed using the Random Vibration Theory (RVT) approach. In many respects, the inputs and assumptions are the same for an RVT analysis and for a time-history based analysis (e.g., an analysis with the program SHAKE, Reference 2.5-434). Both the RVT and time-history (SHAKE, Reference 2.5-434) procedures use a horizontally-layered half-space representation of the site and use an equivalent-linear

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Table 2.5.1-206 (Sheet 1 of 2)
Summary of Bechtel Group Seismic Source Zones

Source	Description	Distance[a] (km)	Distance[a] (mi)	Pa[b]	M_{max} (m_b) and Wts.[c]	Smoothing Options and Wts.[d]	Contributes to 99% of Hazard[e]
39	Oklahoma Aulacogen	143	89	0.20	5.4 [0.1] 5.7 [0.4] 6.0 [0.4] 6.6 [0.1]	1 [0.33 2 [0.34] 3 [0.33]	Yes
BZ2	Texas Platform	0	0	1.0	5.4 [0.1] 5.7 [0.4] 6.0 [0.4] 6.6 [0.1]	1 [0.33] 2 [0.34] 3 [0.33]	Yes
38	Ouachita	205	125	0.25	5.4 [0.1] 5.7 [0.4] 6.0 [0.4] 6.6 [0.1]	1 [0.33] 2 [0.34] 4 [0.33]	Yes
BZ3	North Great Plains	143	89	1.0	5.4 [0.1] 5.7 [0.4] 6.0 [0.4] 6.6 [0.1]	1 [0.33] 2 [0.34] 3 [0.33]	Yes
C04	Combination Zone	143	89	NA	5.4 [0.1] 5.7 [0.4] 6.0 [0.4] 6.6 [0.1]	1 [0.33] 2 [0.34] 4 [0.33]	Yes
40	Meers Fault	268	166	0.70	5.4 [0.1] 6.0 [0.4] 6.6 [0.4] 7.5 [0.1]	1 [0.33] 2 [0.34] 4 [0.33]	No
65	El Reno	315	196	0.35	5.4 [0.1] 5.7 [0.4] 6.0 [0.4] 6.6 [0.1]	1 [0.33] 2 [0.34] 4 [0.33]	No
BZ1	Gulf Coast	219	136	1.0	5.4 [0.1] 5.7 [0.4] 6.0 [0.4] 6.6 [0.1]	1 [0.33] 2 [0.34] 3 [0.33]	No

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Table 2.5.1-206 (Sheet 2 of 2)
Summary of Bechtel Group Seismic Source Zones

Source	Description	Distance[a] (km)	Distance[a] (mi)	Pa[b]	M_{max} (m_b) and Wts.[c]	Smoothing Options and Wts.[d]	Contributes to 99% of Hazard[e]
55	S.E. Oklahoma	235	146	0.15	5.4 [0.1] 5.7 [0.4] 6.0 [0.4] 6.6 [0.1]	1 [0.33] 2 [0.34] 4 [0.33]	No

a) Shortest distance between CPNPP 3 & 4 and source zone.

b) Probability of activity (EPRI, 1989a).

c) Maximum earthquake magnitude (M_{max}) in body wave magnitude (m_b) and weighting (Wts.) (EPRI, 1989a).

d) Smoothing options (EPRI, 1989a):
1 = constant a, constant b, no b prior;
2 = low smoothing on a, high smoothing on b, no b prior;
3 = low smoothing on a, low smoothing on b, no b prior;
4 = low smoothing on a, low smoothing on b, weak b prior of 1.05;
Weights on magnitude intervals are [1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0].

e) Whether or not the source contributes to 99% of the hazard at CPSES Units 1 & 2.

(Reference 2.5-369), (Reference 2.5-335)

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Table 2.5.1-207-
Summary of Dames & Moore Seismic Source Zones

Source	Description	Distance[a] (km)	Distance[a] (mi)	Pa[b]	M_{max} (m_b) and Wts.[c]	Smoothing Options and Wts.[d]	Contributes to 99% of Hazard[e]
20	Southern Coastal Margin	134	83	1.0	5.3 [0.8] 7.2 [0.2]	1 [0.75] 2 [0.25]	Yes
25	Ouachitas Fold Belt	42	26	0.35	5.5 [0.8] 7.2 [0.2]	1 [0.75] 2 [0.25]	Yes
25a	Kink in Ouachita Fold Belt	121	75	0.65	5.7 [0.75] 7.2 [0.25]	3 [0.75] 4 [0.25]	Yes
28	S. Oklahoma Aulacogen	147	91	0.44	6.0 [0.75] 7.2 [0.25]	3 [0.75] 4 [0.25]	Yes
28b	Default for S. Oklahoma Aulacogen	113	70	0.56	5.0 [0.8] 7.2 [0.2]	1 [0.75] 2 [0.25]	Yes
67	New Mexico	0	0	1.0	5.5 [0.8] 7.2 [0.2]	1 [0.75] 2 [0.25]	Yes
33	Anadarko Basin	266	165	1.0	5.8 [0.75] 7.2 [0.25]	1 [0.34] 2 [0.11] 3 [0.41] 4 [0.14]	No

a) Shortest distance between CPNPP 3 & 4 and source zone.

b) Probability of activity (EPRI, 1989a).

c) Maximum earthquake magnitude (M_{max}) in body wave magnitude (m_b) and weighting (Wts.) (EPRI, 1989a).

d) Smoothing options (EPRI, 1989a):
1 = no smoothing on a, no smoothing on b, strong b prior of 1.04;
2 = no smoothing on a, no smoothing on b, weak b prior of 1.04;
3 = constant a, constant b, strong b prior of 1.04;
4 = constant a, constant b, weak b prior of 1.04;
Weights on magnitude intervals are [0.1, 0.2, 0.4, 1.0, 1.0, 1.0, 1.0].

e) Whether or not the source contributes to 99% of the hazard at CPSES Units 1 & 2.

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Table 2.5.1-208
Summary of Law Engineering Seismic Source Zones

Source	Description	Distance[a] (km)	Distance[a] (mi)	Pa[b]	M_{max} (m_b) and Wts.[c]	Smoothing Options and Wts.[d]	Contributes to 99% of Hazard[e]
124	New Mexico – Texas Block	0	0	1.0	4.9 [0.3] 5.5 [0.5] 5.8 [0.2]	1a [1.0]	Yes
26	Oklahoma Aulacogen Arbuckle Wichita Rift	150	93	0.6	5.0 [0.2] 5.2 [0.5] 6.8 [0.3]	1a [1.0]	Yes
119	Eastern Mid Continent	151	94	1.0	4.6 [0.3] 5.0 [0.3] 5.5 [0.4]	1a [1.0]	No
126	South Coastal Block	148	92	1.0	4.6 [0.9] 4.9 [0.1]	1a [1.0]	No

a) Shortest distance between CPNPP 3 & 4 and source zone.

b) Probability of activity (EPRI, 1989a).

c) Maximum earthquake magnitude (M_{max}) in body wave magnitude (m_b) and weighting (Wts.) (EPRI, 1989a).

d) Smoothing options (EPRI, 1989a):
1a = high smoothing on a, constant b, strong b prior of 1.05;
Weights on magnitude intervals are all 1.0.

e) Whether or not the source contributes to 99% of the hazard at CPSES Units 1 & 2.

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Table 2.5.1-209
Summary of Rondout Associates Seismic Source Zones

Source	Description	Distance[a] (km)	Distance[a] (mi)	Pa[b]	M_{max} (m_b) and Wts.[c]	Smoothing Options and Wts.[d]	Contributes to 99% of Hazard[e]
16	S. Oklahoma Aulacogen Ouachita Mts.	129	80	1.0	5.8 [0.15] 6.5 [0.60] 6.8 [0.25]	1 [1.0]	Yes
C02	Grenville Crust	0	0	NA	4.8 [0.2] 5.5 [0.6] 5.8 [0.2]	3 [1.0]	Yes
23	Nemaha Anadark	235	146	1.0	6.6 [0.2] 6.8 [0.6] 7.0 [0.2]	2 [1.0]	No
51	Gulf Coast to Bahamas Fracture Zone	92	57	1.0	4.8 [0.2] 5.5 [0.6] 5.8 [0.2]	2 [1.0]	No

a) Shortest distance between CPNPP 3 & 4 and source zone.

b) Probability of activity (EPRI, 1989a).

c) Maximum earthquake magnitude (M_{max}) in body wave magnitude (m_b) and weighting (Wts.) (EPRI, 1989a).

d) Smoothing options (EPRI, 1989a):
1 = constant a of 1.590, constant b of 1.020;
2 = constant a of 1.350, constant b of 0.960
3 = low smoothing on a, constant b, strong b prior of 1.0.

e) Whether or not the source contributes to 99% of the hazard at CPSES Units 1 & 2.

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Table 2.5.1-210
Summary of Weston Geophysical Corporation Seismic Source Zones

Source	Description	Distance[a] (km)	Distance[a] (mi)	Pa[b]	M_{max} (m_b) and Wts.[c]	Smoothing Options and Wts.[d]	Contributes to 99% of Hazard[e]
109	Southwest	0	0	1.0	5.4 [0.33] 6.0 [0.49] 6.6 [0.18]	1a [0.2] 2a [0.8]	Yes
C31	Combination Zone	0	0	NA	5.4 [0.33] 6.0 [0.49] 6.6 [0.18]	1a [0.7] 2a [0.3]	Yes
36	Ancestral Rockies	137	85	1.0	5.4 [0.43] 6.0 [0.41] 6.6 [0.16]	1b [0.3] 2b [0.7]	Yes
107	Gulf Coast	128	79	1.0	5.4 [0.71] 6.0 [0.29]	1a [0.2] 2a [0.8]	No

a) Shortest distance between CPNPP 3 & 4 and source zone.

b) Probability of activity for earthquakes with magnitudes greater than the minimum magnitude of mb 5.0 (EPRI, 1989a).

c) Maximum earthquake magnitude (M_{max}) in body wave magnitude (m_b) and weighting (Wts.) (EPRI, 1989a).

d) Smoothing options (EPRI, 1989a):
1a = constant a, constant b, medium b prior of 1.0;
1b = constant a, constant b, medium b prior of 0.9;
2a = medium smoothing on a, medium smoothing on b, medium b prior of 1.0.
2b = medium smoothing on a, medium smoothing on b, medium b prior of 0.9.

e) Whether or not the source contributes to 99% of the hazard at CPSES Units 1 & 2.

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Table 2.5.1-211
Summary of Woodward-Clyde Consultants Seismic Source Zones

Source	Description	Distance[a] (km)	Distance[a] (mi)	Pa[b]	M_{max} (m_b) and Wts.[c]	Smoothing Options and Wts.[d]	Contributes to 99% of Hazard[e]
BG44	Central US Backgrounds	0	0	NA	4.9 [0.17] 5.4 [0.28] 5.8 [0.27] 6.5 [0.28]	1 [0.25] 6 [0.25] 7 [0.25] 8 [0.25]	Yes
46	S. Oklahoma Aulacogen	161	100	0.083	5.7 [0.33] 6.8 [0.34] 7.2 [0.33]	3 [0.33] 4 [0.34] 5 [0.33]	Yes
46a	S. Oklahoma Aulacogen	161	100	0.084	5.7 [0.33] 6.8 [0.34] 7.2 [0.33]	3 [0.33] 4 [0.34] 5 [0.33]	Yes
49	Meers Fault	262	163	0.85	6.8 [0.33] 7.3 [0.34] 7.5 [0.33]	9 [1.0]	No
52	E. Oklahoma Seismic Zone	238	148	0.4	5.4 [0.33] 6.0 [0.34] 6.5 [0.33]	3 [0.33] 4 [0.34] 5 [0.33]	No
48	S. Oklahoma Gravity Anomaly	211	131	0.263	5.7 [0.33] 6.5 [0.34] 7.1 [0.33]	3 [0.33] 4 [0.34] 5 [0.33]	No

a) Shortest distance between CPNPP 3 & 4 and source zone.

b) Probability of activity for earthquakes with magnitudes greater than the minimum magnitude of mb 5.0 (EPRI, 1989a).

c) Maximum earthquake magnitude (M_{max}) in body wave magnitude (m_b) and weighting (Wts.) (EPRI, 1989a).

d) Smoothing options (EPRI, 1989a):
1 = low smoothing on a, high smoothing on b, no b prior;
3 = high smoothing on a, high smoothing on b, moderate b prior of 1.0.
4 = high smoothing on a, high smoothing on b, moderate b prior of 0.9.
5 = high smoothing on a, high smoothing on b, moderate b prior of 0.8.
6 = low smoothing on a, high smoothing on b, moderate b prior of 1.0;
7 = low smoothing on a, high smoothing on b, moderate b prior of 0.9;
8 = low smoothing on a, high smoothing on b, moderate b prior of 0.8;
9 = use "a" and "b" from homogeneous solution for source zone 46 with smoothing option 4. Weights on magnitude intervals are all 1.0.

e) Whether or not the source contributes to 99% of the hazard at CPSES Units 1 & 2.

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Table 2.5.1-212
Mmax Update for Dames & Moore South Coastal Margin

Source Zone	Original Mmax Distribution and Weights (EPRI, 1989)	Updated Mmax Distribution and Weights
South Coastal Margin (zone 20)	5.3 [0.8] 7.2 [0.2]	5.5 [0.8] 7.2 [0.2]

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Table 2.5.1-213-
Mmax Update for Law Engineering New Mexico-Texas Block

Source Zone	Original Mmax Distribution and Weights (EPRI, 1989)	Updated Mmax Distribution and Weights
New Mexico — Texas Block (zone 124)	4.9 [0.3] 5.5 [0.5] 5.8 [0.2]	5.0 [0.3] 5.5 [0.5] 5.8 [0.2]

Table 6: Law Engineering Source Zone Modifications

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Table 2.5.1-214
Moore fault characterization from 2002 USGS National Seismic Hazard Maps (Frankel et al., 2002)

Probability of Activity	1
Recurrence Model	Characteristic
Characteristic Magnitude	Mw 7.0
Characteristic Return Period	4545 years
Dip	89º
Dip Direction	SW
Sense of Slip	Strike-slip
Rupture Top	0 km
Rupture Bottom	15 km
Width	15 km
Length	35 km
Fault Trace Coordinates (Lat., Lon.)	(34.85º, -98.64º) (34.75º, -98.40º) (34.73º, -98.33º) (34.71º, -98.29º)

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Table 2.5.1-215
Updated Seismic Source Characterization of the Moore Fault

Probability of Activity	1
Recurrence Model	Characteristic
Characteristic Magnitude	6.7 (0.2), 6.85 (0.6), 7.0 (0.2)
Characteristic Return Period	See logic tree in Figure 4
Dip	89°
Dip Direction	SW
Rupture Top	0 km
Rupture Bottom	15 to 20 km
Width	15 to 20 km
Length	26 to 37 km
Fault Trace Coordinates (Lat., Lon.)	(34.85°, -98.64°) (34.71°, -98.29°)

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Table 2.5.1-216 (Sheet 1 of 2)
Rio Grande Rift Faults Modeled as Discrete Fault Sources

Fault Name	Recurrence Rate (EQs/yr)	Magnitude (Mw)
Puye fault	4.0140E-05	6.6
Sawyer Canyon fault	5.4280E-05	6.2
La Canada del Amagre fault zone	9.5530E-05	6.5
Embudo fault	3.7700E-05	7.2
Lobato Mesa fault zone	6.3390E-05	6.6
Canones fault	2.0724E-05	6.8
Black Mesa fault zone	3.4270E-05	6.5
Gallina fault	1.8790E-05	6.9
Southern Sangre de Cristo fault	5.7220E-05	7.4
Northern Sangre de Cristo fault	1.0040E-04	7.5
Southern Sawatch fault	4.6820E-05	7.0
West Lobo Valley fault zone	1.7700E-05	7.2
West Indio Mountains fault	4.8600E-05	6.7
Caballo fault	7.8790E-05	7.0
West Eagle Mountains-Red Hills fault	1.5140E-05	6.7
Amargosa fault	6.5170E-05	7.2
East Baylor Mountain - Carizzo Mountain fault	5.3200E-06	7.0
Arroyo Diablo fault	2.4520E-05	6.4
East Sierra Diablo fault	1.6510E-05	6.9
Campo Grande fault	3.6540E-05	7.0
Acala fault	2.4770E-04	6.1
West Delaware Mountains fault zone	2.8590E-05	6.7
East Franklin Mountains fault	8.1530E-05	7.0
Organ Mountains fault	1.4976E-04	6.8
San Andreas Mountains fault	3.9120E-05	7.5
Alamogordo fault	3.9970E-05	7.5
Caballo fault	3.7440E-05	6.6

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Table 2.5.1-216 (Sheet 2 of 2)
Rio Grande Rift Faults Modeled as Discrete Fault Sources

Fault Name	Recurrence Rate (EQs/yr)	Magnitude (Mw)
La Jencia fault	2.3120E-05	6.8
Hubbell Springs fault	5.3650E-05	7.0
Tijeras-Canoncito fault	3.2820E-05	7.3
County Dump fault	3.3260E-05	6.9
Zia fault	4.2010E-05	6.8
San Francisco fault	6.6380E-05	6.8
San Felipe fault zone	3.1180E-05	7.0
La Bajada fault	4.9530E-05	7.0
Jemez-San Ysidro fault	1.2850E-05	7.1
Picuris-Pecos fault	2.1030E-05	7.4
Nacimiento fault	9.9400E-06	7.3
Nambe fault	1.6790E-05	7.0
Pajarito fault	5.7380E-05	7.0
Pojoaque fault	1.6260E-05	7.0

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Table 2.5.1-217 (Sheet 1 of 2)
Surface Trace Coordinates of Rio Grande Rift Faults

Fault Name	Longitude 1	Latitude 1	Longitude 2	Latitude 2
Puye fault	-106.158	35.893	-106.154	36.064
Sawyer Canyon fault	-106.254	35.908	-106.281	35.979
La Canada del Amagre fault zone	-106.242	36.023	-106.211	36.170
Embudo fault	-105.599	36.329	-106.224	36.035
Lobato Mesa fault zone	-106.276	36.207	-106.300	36.041
Canones fault	-106.529	36.081	-106.319	36.284
Black Mesa fault zone	-105.963	36.220	-106.121	36.125
Gallina fault	-106.901	36.220	-106.791	36.525
Southern Sangre de Cristo fault	-105.503	37.178	-105.597	36.328
Northern Sangre de Cristo fault	-105.994	38.393	-105.369	37.006
Southern Sawatch fault	-106.245	38.563	-106.211	38.930
West Lobo Valley fault zone	-104.604	30.466	-104.807	30.939
West Indio Mountains fault	-105.029	30.667	-105.527	31.095
Caballo fault	-105.527	31.095	-105.284	30.779
West Eagle Mountains-Red Hills fault	-105.269	31.003	-105.085	30.857
Amargosa fault	-105.555	30.874	-106.047	31.314
East Baylor Mountain - Carizzo Mountain fault	-104.905	30.952	-104.723	31.285
Arroyo Diablo fault	-105.720	31.306	-105.637	31.202
East Sierra Diablo fault	-104.873	31.224	-104.871	31.517
Campo Grande fault	-106.033	31.495	-105.629	31.292
Acala fault	-105.938	31.411	-105.888	31.360
West Delaware Mountains fault zone	-104.819	31.669	-104.716	31.467
East Franklin Mountains fault	-106.487	31.605	-106.447	32.011
Organ Mountains fault	-106.490	32.191	-106.486	32.417
San Andreas Mountains fault	-106.486	32.417	-106.412	33.437

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Table 2.5.1-217 (Sheet 2 of 2)
Surface Trace Coordinates of Rio Grande Rift Faults

Fault Name	Longitude 1	Latitude 1	Longitude 2	Latitude 2
Alamogordo fault	-106.120	33.493	-105.924	32.520
Caballo fault	-107.266	33.114	-107.253	32.923
La Jencia fault	-107.074	34.011	-107.166	34.263
Hubbell Springs fault	-106.509	34.998	-106.563	34.616
Tijeras-Canoncito fault	-105.881	35.479	-106.507	34.987
County Dump fault	-106.775	35.008	-106.749	35.326
Zia fault	-106.843	35.189	-106.748	35.471
San Francisco fault	-106.321	35.488	-106.470	35.292
San Felipe fault zone	-106.607	35.312	-106.584	35.683
La Bajada fault	-106.302	35.702	-106.214	35.346
Jemez-San Ysidro fault	-106.788	35.420	-106.634	35.833
Picuris-Pecos fault	-105.609	36.329	-105.879	35.479
Nacimiento fault	-106.857	35.485	-106.901	36.220
Nambe fault	-105.883	36.021	-105.852	35.591
Pajarito fault	-106.297	35.646	-106.225	36.034
Pojoaque fault	-106.004	36.088	-106.062	35.671

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Table 2.5.1-218-
Summary of Rio Grand Rift Fault Source Characterization

Trace Coordinates	Table 2.5.2-CF13
Dip, Dip Direction	90°, NA
Recurrence Model	Characteristic Earthquake
Recurrence Rate (EQs/yr)	Table 2.5.2-CF12
Magnitude (Mw) and weights	Take magnitude from Table 2.5.2-CF12 and use Mw −0.2 [0.2], Mw [0.6], Mw +0.2 [0.2] with weights in parentheses
Probability of Activity	1.0

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Table 2.5.1-219
Rio Grande Rift Point Source Characterization

Point Location (Lon., Lat.)	(-102.671°, 29.796°)
Recurrence Model	Characteristic Earthquake
Return Period (years) and Weights	14,500 [0.4][a], 37,500 [0.4][a], 119,000 [0.2][a]
Magnitude (Mw) and Weights	6.3 [0.1][a], 6.65 [0.3][a], 6.95 [0.4][a], 7.3 [0.2][a]
Probability of Activity	1.0

a) [ ] = percentage of 100 for each magnitude weighted in the model.

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Table 2.5.1-220-
Choraw Fault Source Characterization

Trace Coordinates (Lon., Lat.)	(-103.22°, 38.43°), (-103.59°, 38.15°)
Dip, Dip Direction	90°, NA
Recurrence Model	Characteristic Earthquake
Recurrence Rate	1.148e-4 per year
Magnitude (Mw) and weights	6.8 [0.2][(a)], 7.0 [0.6][(a)], 7.2 [0.2][(a)]
Probability of Activity	1.0

a) [ ] = percentage of 100 for each magnitude weighted in the model.

Table 2.5.2-234
Amplification Factors for the FIRS4 Site Column

	Amplification Factor for 10^{-4}		Amplification Factor for 10^{-5}		Amplification Factor for 10^{-6}	
Freq (Hz)	Median	Logarithmic Std. Dev.	Median	Logarithmic Std. Dev.	Median	Logarithmic Std. Dev.
0.1	~~1.12~~1.10	~~0.06~~0.05	~~1.13~~1.10	~~0.06~~0.05	~~1.13~~1.10	~~0.06~~0.05
0.125	~~1.15~~1.13	~~0.08~~0.07	~~1.15~~1.13	~~0.08~~0.07	~~1.15~~1.13	~~0.08~~0.07
0.15	~~1.19~~1.18	0.10	~~1.19~~1.18	0.10	~~1.19~~1.18	0.10
0.2	~~1.29~~1.28	0.15	~~1.29~~1.28	0.15	1.29	0.15
0.3	1.45	0.18	~~1.46~~1.45	0.18	1.46	0.18
0.4	~~1.44~~1.43	0.17	1.44	0.17	1.45	0.17
0.5	1.37	0.17	1.37	~~0.18~~0.17	~~1.38~~1.39	0.18
0.6	1.35	~~0.16~~0.15	1.36	0.16	1.38	0.17
0.7	~~1.38~~1.39	0.14	1.39	0.14	1.43	0.16
0.8	1.45	0.13	1.46	0.14	1.50	0.17
0.9	1.49	0.14	~~1.49~~1.50	0.14	~~1.54~~1.55	~~0.19~~0.20
1	1.54	0.15	1.51	0.15	~~1.57~~1.58	~~0.21~~0.22
1.25	~~1.79~~1.80	0.19	~~1.82~~1.83	0.19	~~1.92~~1.94	~~0.24~~0.25
1.5	1.98	0.22	~~2.02~~2.03	0.23	~~2.14~~2.15	~~0.29~~0.30
2	~~1.92~~1.93	~~0.15~~0.16	~~1.99~~2.01	~~0.19~~0.20	2.14	0.26
2.5	~~1.62~~1.63	~~0.23~~0.25	~~1.69~~1.70	~~0.28~~0.29	~~1.80~~1.79	0.31
3	1.42	~~0.30~~0.32	1.52	~~0.35~~0.36	1.58	0.35
4	1.50	~~0.47~~0.49	1.53	0.44	1.52	0.40
5	1.85	~~0.48~~0.49	~~1.77~~1.76	~~0.43~~0.44	~~1.57~~1.55	0.40
6	~~2.04~~2.00	~~0.40~~0.41	~~1.82~~1.77	~~0.39~~0.40	~~1.44~~1.43	0.45
7	~~1.87~~1.80	~~0.38~~0.41	~~1.61~~1.55	~~0.42~~0.44	~~1.24~~1.23	0.49
8	~~1.63~~1.54	~~0.40~~0.44	~~1.38~~1.32	~~0.44~~0.46	1.06	~~0.52~~0.51
9	~~1.41~~1.31	~~0.40~~0.44	~~1.19~~1.13	~~0.42~~0.43	0.90	0.45
10	~~1.23~~1.12	~~0.32~~0.36	~~1.04~~0.99	~~0.33~~0.34	0.79	0.36
12.5	~~1.09~~0.99	~~0.26~~0.29	~~0.93~~0.88	~~0.27~~0.29	~~0.71~~0.70	0.31
15	~~1.05~~0.94	~~0.27~~0.31	~~0.87~~0.81	~~0.28~~0.30	~~0.65~~0.64	0.34
20	~~0.91~~0.76	~~0.26~~0.31	~~0.70~~0.63	~~0.29~~0.32	~~0.49~~0.48	0.35
25	~~0.82~~0.66	~~0.22~~0.27	~~0.61~~0.53	~~0.24~~0.27	~~0.41~~0.39	0.29
30	~~0.78~~0.61	~~0.20~~0.24	~~0.58~~0.50	~~0.21~~0.23	~~0.38~~0.37	0.25
35	~~0.77~~0.61	~~0.20~~0.23	~~0.58~~0.50	~~0.20~~0.22	~~0.38~~0.37	0.23
40	~~0.77~~0.61	~~0.19~~0.22	~~0.59~~0.51	~~0.19~~0.20	0.38	0.21
45	~~0.78~~0.62	~~0.18~~0.21	~~0.60~~0.53	~~0.18~~0.20	0.40	0.20
50	~~0.81~~0.65	~~0.18~~0.20	~~0.64~~0.56	~~0.18~~0.19	0.42	0.19
60	~~0.92~~0.74	~~0.17~~0.19	~~0.74~~0.66	~~0.17~~0.18	~~0.49~~0.50	0.18
70	~~1.09~~0.89	~~0.17~~0.19	~~0.90~~0.81	~~0.16~~0.17	~~0.60~~0.61	0.18
80	~~1.29~~1.06	~~0.17~~0.19	~~1.08~~0.98	~~0.16~~0.17	~~0.72~~0.74	~~0.18~~0.17
90	~~1.46~~1.22	~~0.17~~0.19	~~1.25~~1.14	~~0.16~~0.17	~~0.83~~0.87	0.17
100	~~1.58~~1.33	~~0.16~~0.19	~~1.37~~1.26	~~0.16~~0.17	~~0.92~~0.97	0.17

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Table 2.5.2-235
Amplification Factors for the FIRS4_CoV50 Site Column

	Amplification Factor for 10^{-4}		Amplification Factor for 10^{-5}		Amplification Factor for 10^{-6}	
Freq (Hz)	Median	Logarithmic Std. Dev.	Median	Logarithmic Std. Dev.	Median	Logarithmic Std. Dev.
0.1	~~1.13~~1.10	~~0.06~~0.05	~~1.14~~1.10	~~0.06~~0.05	~~1.14~~1.11	~~0.06~~0.05
0.125	~~1.15~~1.13	~~0.08~~0.07	~~1.16~~1.13	~~0.08~~0.07	~~1.16~~1.14	~~0.08~~0.07
0.15	~~1.19~~1.18	0.10	~~1.20~~1.18	0.10	~~1.20~~1.19	0.10
0.2	~~1.29~~1.28	0.15	~~1.30~~1.29	0.15	~~1.31~~1.30	0.15
0.3	~~1.46~~1.45	0.18	~~1.47~~1.46	0.18	1.48	0.19
0.4	1.44	0.17	1.45	0.17	1.48	0.20
0.5	1.38	0.18	1.39	~~0.18~~0.19	1.44	~~0.23~~0.24
0.6	1.36	0.16	1.39	0.18	1.45	0.25
0.7	1.40	0.15	~~1.43~~1.44	~~0.18~~0.19	1.51	~~0.25~~0.26
0.8	1.47	0.14	1.52	~~0.20~~0.21	1.60	0.27
0.9	~~1.51~~1.52	0.15	~~1.56~~1.57	~~0.22~~0.23	~~1.65~~1.66	~~0.28~~0.29
1	1.57	0.17	~~1.59~~1.60	0.23	~~1.69~~1.70	0.30
1.25	~~1.84~~1.86	~~0.21~~0.22	~~1.94~~1.96	~~0.28~~0.29	2.04	0.33
1.5	~~2.06~~2.07	~~0.28~~0.29	~~2.13~~2.15	0.32	2.20	~~0.30~~0.31
2	~~2.05~~2.06	~~0.28~~0.29	2.11	~~0.30~~0.31	~~2.10~~2.11	~~0.28~~0.29
2.5	1.76	~~0.36~~0.37	~~1.75~~1.73	0.35	1.73	0.33
3	~~1.55~~1.54	~~0.44~~0.45	~~1.51~~1.49	~~0.39~~0.38	1.48	0.38
4	~~1.47~~1.43	0.49	~~1.40~~1.38	~~0.44~~0.46	~~1.31~~1.30	0.47
5	~~1.61~~1.57	~~0.50~~0.53	~~1.48~~1.44	~~0.48~~0.50	~~1.21~~1.19	~~0.44~~0.43
6	~~1.66~~1.57	~~0.45~~0.47	~~1.42~~1.36	~~0.42~~0.44	~~1.12~~1.11	~~0.48~~0.47
7	~~1.52~~1.43	~~0.41~~0.45	~~1.31~~1.25	~~0.45~~0.47	~~1.02~~1.01	0.50
8	~~1.40~~1.30	~~0.39~~0.43	~~1.18~~1.12	~~0.42~~0.44	0.93	0.51
9	~~1.33~~1.23	~~0.36~~0.41	~~1.12~~1.06	~~0.42~~0.45	0.87	0.52
10	~~1.27~~1.15	~~0.35~~0.40	~~1.06~~1.00	~~0.40~~0.43	0.80	~~0.51~~0.50
12.5	~~1.13~~1.01	~~0.30~~0.34	~~0.92~~0.86	~~0.33~~0.36	~~0.69~~0.68	0.43
15	~~1.04~~0.91	~~0.28~~0.32	~~0.84~~0.77	~~0.31~~0.35	~~0.61~~0.60	0.41
20	~~0.88~~0.73	~~0.25~~0.30	~~0.67~~0.60	~~0.28~~0.31	~~0.46~~0.45	0.36
25	~~0.82~~0.64	~~0.23~~0.28	~~0.60~~0.51	~~0.25~~0.29	~~0.40~~0.39	~~0.35~~0.36
30	~~0.79~~0.62	~~0.23~~0.27	~~0.58~~0.50	~~0.25~~0.28	~~0.38~~0.37	~~0.31~~0.32
35	~~0.76~~0.60	~~0.21~~0.24	~~0.57~~0.49	~~0.21~~0.24	0.37	0.27
40	~~0.76~~0.60	~~0.21~~0.23	~~0.58~~0.50	~~0.20~~0.22	0.37	0.24
45	~~0.78~~0.61	~~0.20~~0.22	~~0.60~~0.52	~~0.19~~0.21	0.38	~~0.22~~0.21
50	~~0.81~~0.64	~~0.20~~0.21	~~0.63~~0.55	~~0.18~~0.20	0.41	~~0.21~~0.20
60	~~0.92~~0.73	~~0.20~~0.21	~~0.73~~0.64	~~0.18~~0.19	0.48	0.19
70	~~1.09~~0.87	~~0.19~~0.20	~~0.89~~0.79	~~0.18~~0.19	~~0.58~~0.59	0.19
80	~~1.28~~1.04	~~0.19~~0.20	~~1.06~~0.95	0.18	~~0.70~~0.72	~~0.19~~0.18
90	~~1.45~~1.19	~~0.19~~0.20	~~1.23~~1.11	0.18	~~0.81~~0.84	0.18
100	~~1.57~~1.30	~~0.19~~0.20	~~1.35~~1.23	0.18	~~0.90~~0.94	0.18

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Table 2.5.2-237 (Sheet 1 of 2)
1E-5 and FIRS Amplitudes for FIRS Elevations, Horizontal and Vertical

	FIRS2		FIRS3		FIRS4		FIRS4-CoV50	
Frequency	1E-5 UHRS	FIRS2	1E-5 UHRS	FIRS3	1E-5 UHRS	FIRS4	1E-5 UHRS	FIRS4-CoV50
100	3.318.49 E-02	1.493.82 E-02	3.731.01 E-0201	1.684.55 E-02	5.451.51 E-0201	2.456.80 E-02	5.451.48E-0201	2.456.66 E-02
90	3.338.58 E-02	1.503.86 E-02	3.791.03 E-0201	1.714.64 E-02	5.531.54 E-0201	2.496.93 E-02	5.531.51E-0201	2.496.79 E-02
80	3.358.69 E-02	1.513.91 E-02	3.861.05 E-0201	1.744.75 E-02	5.631.57 E-0201	2.537.07 E-02	5.621.54E-0201	2.536.93 E-02
75	3.368.75 E-02	1.513.94 E-02	3.901.07 E-0201	1.764.80 E-02	5.681.59 E-0201	2.567.16 E-02	5.671.56E-0201	2.557.01 E-02
70	3.388.81 E-02	1.523.96 E-02	3.951.08 E-0201	1.784.87 E-02	5.741.61 E-0201	2.587.25 E-02	5.721.58E-0201	2.577.10 E-02
60	3.408.95 E-02	1.534.03 E-02	4.041.11 E-0201	1.825.02 E-02	5.871.66 E-0201	2.647.45 E-02	5.841.62E-0201	2.637.30 E-02
50	3.449.12 E-02	1.554.10 E-02	4.161.15 E-0201	1.87E5.20-02	6.021.71 E-0201	2.717.70 E-02	5.981.67E-0201	2.697.54 E-02
40	3.489.33 E-02	1.574.20 E-02	4.311.21 E-0201	1.945.42 E-02	6.221.78 E-0201	2.808.02 E-02	6.171.74E-0201	2.777.84 E-02
30	3.539.62 E-02	1.594.33 E-02	4.511.27 E-0201	2.035.73 E-02	6.491.88 E-0201	2.928.45 E-02	6.411.83E-0201	2.888.25 E-02
25	3.579.80 E-02	1.614.41 E-02	4.641.32 E-0201	2.095.94 E-02	6.661.94 E-0201	3.008.73 E-02	6.571.90E-0201	2.968.53 E-02
20	3.741.03 E-0201	1.684.63 E-02	5.321.55 E-0201	2.406.96 E-02	7.332.14 E-0201	3.309.61 E-02	7.352.13E-0201	3.319.60 E-02
15	3.981.10 E-0201	1.794.94 E-02	6.111.93 E-0201	2.758.67 E-02	8.292.42 E-0201	3.731.09 E-0201	8.492.49E-0201	3.821.12 E-0201
12.5	4.131.14 E-0201	1.865.14 E-02	6.542.02 E-0201	2.949.10 E-02	8.962.62 E-0201	4.031.18 E-0201	9.302.74E-0201	4.181.23 E-0201
10	4.331.20 E-0201	1.955.40 E-02	6.982.08 E-0201	3.149.36 E-02	9.862.88 E-0201	4.441.30 E-0201	1.043.08E-01	4.681.39 E-0201
9	4.381.21 E-0201	1.975.43 E-02	6.771.99 E-0201	3.048.97 E-02	1.113.25 E-01	5.001.46 E-0201	1.123.30E-01	5.041.48 E-0201
8	4.441.22 E-0201	2.005.47 E-02	6.521.89 E-0201	2.938.52 E-02	1.243.64 E-01	5.591.64 E-0201	1.203.52E-01	5.421.58 E-0201
7.5	4.471.22 E-0201	2.015.49 E-02	6.381.84 E-0201	2.878.27 E-02	1.313.83 E-01	5.901.73 E-0201	1.253.62E-01	5.611.63 E-0201
7	4.511.23 E-0201	2.035.51 E-02	6.231.78 E-0201	2.808.01 E-02	1.384.03 E-01	6.201.81 E-0201	1.293.73E-01	5.801.68 E-0201
6	4.591.24 E-0201	2.065.56 E-02	5.881.65 E-0201	2.657.41 E-02	1.524.43 E-01	6.831.99 E-0201	1.373.94E-01	6.181.77 E-0201
5	4.681.25 E-0201	2.115.63 E-02	5.451.49 E-0201	2.456.71 E-02	1.654.80 E-01	7.432.16 E-0201	1.454.12E-01	6.531.85 E-0201
4	5.511.43 E-0201	2.486.44 E-02	6.331.66 E-0201	2.857.45 E-02	1.484.10 E-01	6.641.84 E-0201	1.403.83E-01	6.321.72 E-0201
3	6.171.57 E-0201	2.777.06 E-02	7.011.77 E-0201	3.167.95 E-02	1.243.23 E-01	5.571.45 E-0201	1.303.40E-01	5.871.53 E-0201
2.5	6.281.59 E-0201	2.837.16 E-02	7.111.77 E-0201	3.207.97 E-02	1.082.71 E-01	4.841.22 E-0201	1.213.08E-01	5.451.39 E-0201

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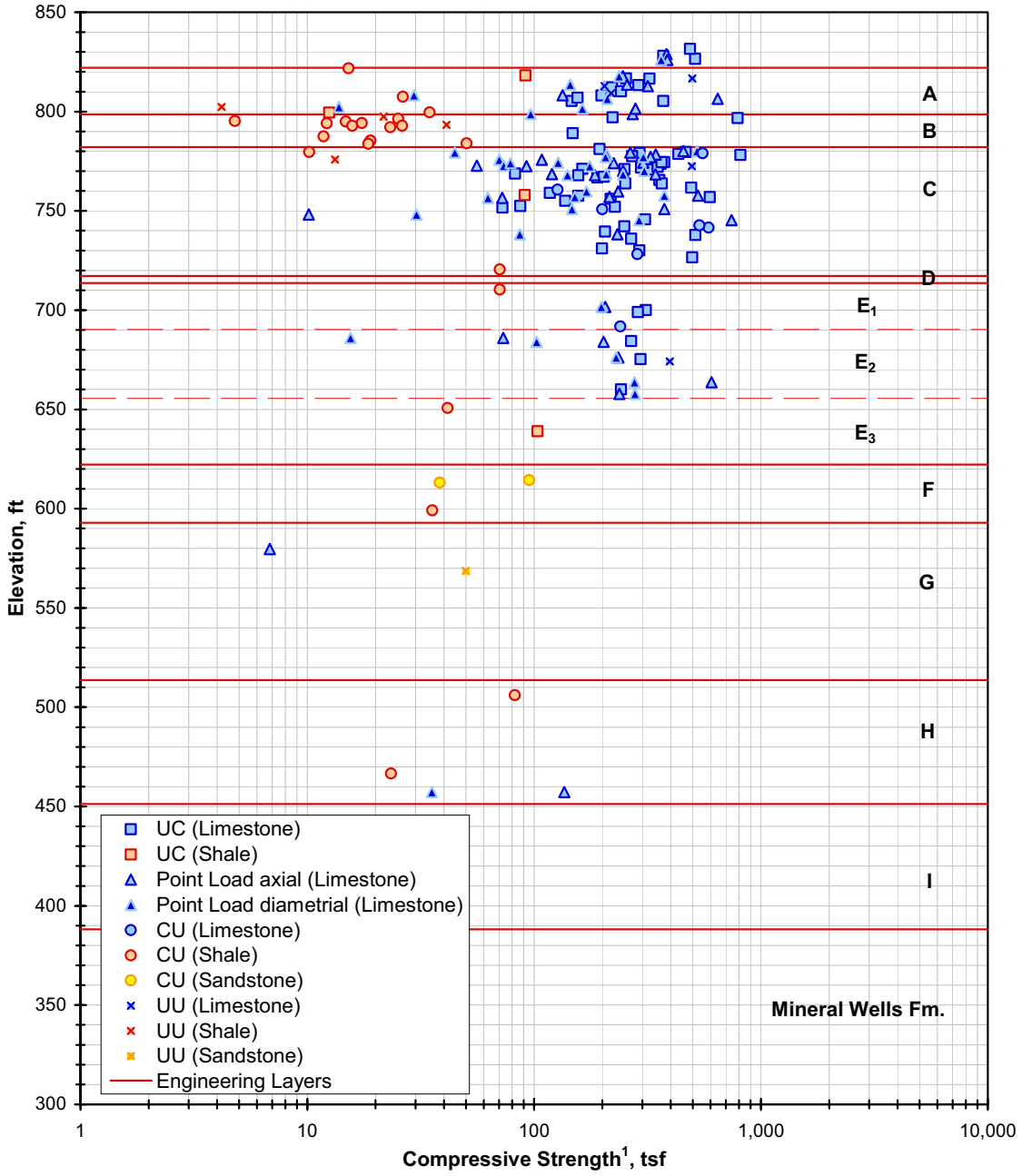
Table 2.5.2-237 (Sheet 2 of 2)
1E-5 and FIRS Amplitudes for FIRS Elevations, Horizontal and Vertical

2	6.491.55 E-0201	2.926.97 E-02	7.346.97 E-0201	3.307.79 E-02	1.082.58 E-01	4.841.16 E-0201	1.182.86E-01	5.311.29 E-0201
1.8	6.501.52 E-0201	2.936.84 E-02	7.341.70 E-0201	3.307.65 E-02	1.052.47 E-01	4.711.11E-0201	1.142.71E-01	5.121.22 E-0201
1.5	6.131.40 E-0201	2.766.30 E-02	6.911.57 E-0201	3.117.06 E-02	9.652.23 E-0201	4.341.01 E-0201	1.042.41E-01	4.661.08 E-0201
1.25	5.571.25 E-0201	2.515.62 E-02	6.271.40 E-0201	2.826.30 E-02	8.611.96 E-0201	3.878.81 E-02	9.132.08E-0201	4.119.37 E-02
1	4.801.05 E-0201	2.164.73 E-02	5.401.18 E-0201	2.435.31 E-02	7.291.62 E-0201	3.287.29 E-02	7.651.70E-0201	3.447.64 E-02
0.9	4.751.01 E-0201	2.144.56 E-02	5.331.15 E-0201	2.405.16 E-02	7.141.57 E-0201	3.217.07 E-02	7.461.64E-0201	3.367.36 E-02
0.8	4.699.73 E-02	2.114.38 E-02	5.251.11 E-0201	2.364.99 E-02	6.971.52 E-0201	3.146.82 E-02	7.251.57E-0201	3.267.06 E-02
0.7	4.639.30 E-02	2.084.19 E-02	5.161.07 E-0201	2.324.81 E-02	6.791.46 E-0201	3.066.56 E-02	7.021.50E-0201	3.166.73 E-02
0.6	4.558.83 E-02	2.053.97 E-02	5.061.02 E-0201	2.284.60 E-02	6.581.39 E-0201	2.966.27 E-02	6.771.42E-0201	3.056.37 E-02
0.5	4.478.30 E-02	2.013.74 E-02	4.959.72 E-02	2.234.37 E-02	6.351.32 E-0201	2.865.94 E-02	6.481.33E-0201	2.925.97 E-02
0.4	3.586.64 E-02	1.612.99 E-02	3.967.78 E-02	1.783.50 E-02	5.081.06 E-0201	2.294.75 E-02	5.181.06E-0201	2.334.78 E-02
0.3	2.684.98 E-02	1.212.24 E-02	2.975.83 E-02	1.342.62 E-02	3.817.92 E-02	1.713.56 E-02	3.897.96E-02	1.753.58 E-02
0.2	1.793.32 E-02	8.051.49 E-0302	1.983.89 E-02	8.911.75 E-0302	2.545.28 E-02	1.142.38 E-02	2.595.31E-02	1.172.39 E-02
0.15	1.342.49 E-02	6.031.12 E-0302	1.492.92 E-02	6.681.31 E-0302	1.913.96 E-02	8.571.78 E-0302	1.943.98E-02	8.751.79 E-0302
0.125	1.122.08 E-02	5.039.34 E-03	1.242.43 E-02	5.571.09 E-0302	1.593.30 E-02	7.141.49 E-0302	1.623.32E-02	7.291.49 E-0302
0.1	7.151.66 E-0302	3.227.47 E-03	7.921.94 E-0302	3.568.75 E-03	1.022.64 E-02	4.571.19 E-0302	1.042.65E-02	4.671.19 E-0302

CTS-00921



Notes:
1. Uniaxial stress for UC and PLI tests and deviator stress for CU and UU tests

Figure 2.5.4-227 Compressive Strength vs. Elevation

CTS-00921

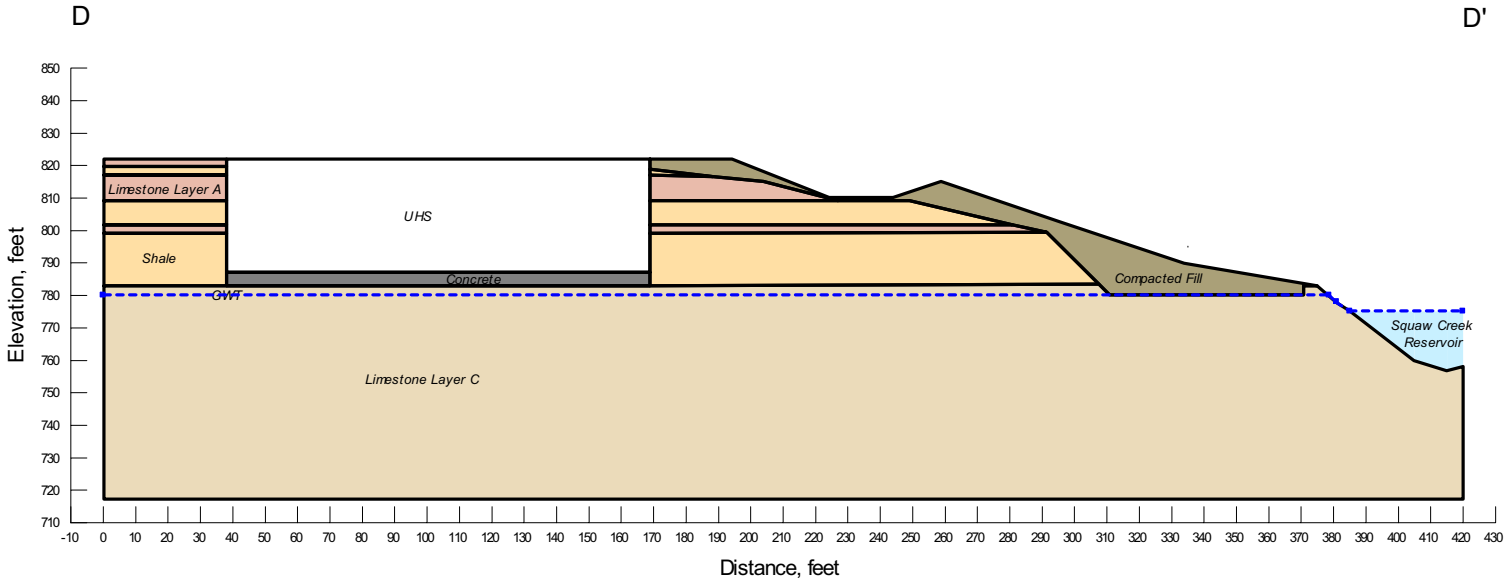


Figure 2.5.5-205 Post-Construction Cross Section D–D'

CTS-00921

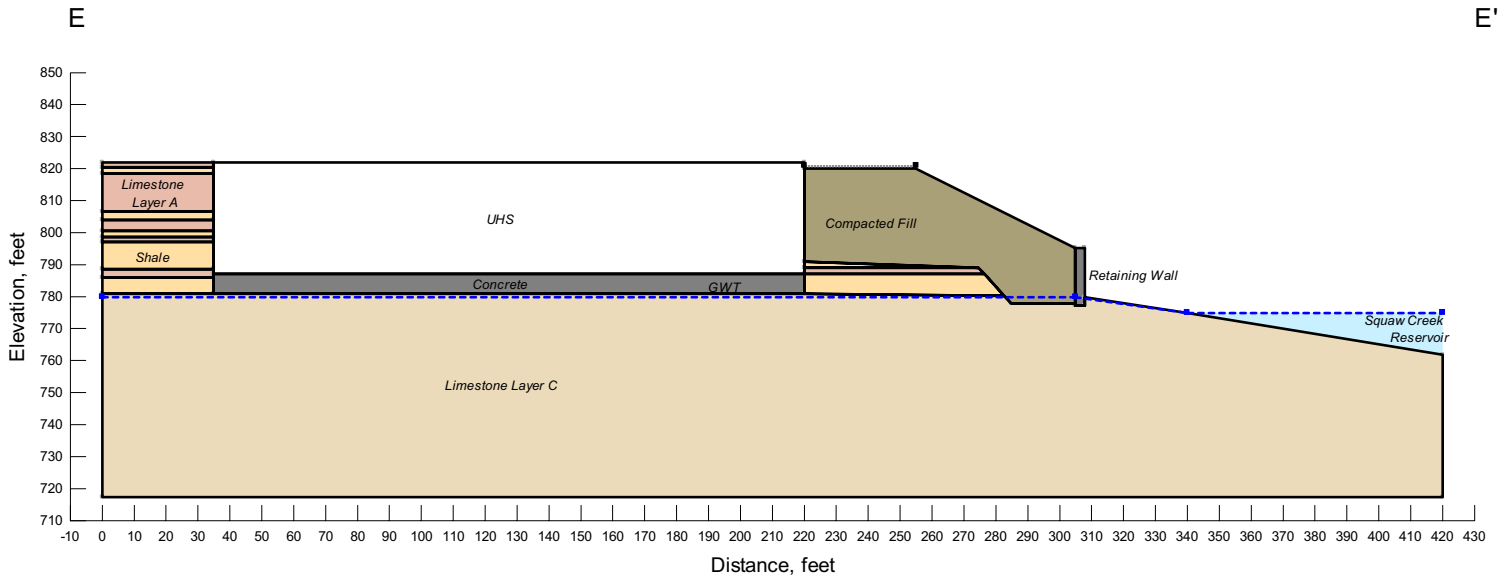


Figure 2.5.5-206 Post-Construction Cross Section E–E'

CTS-00921

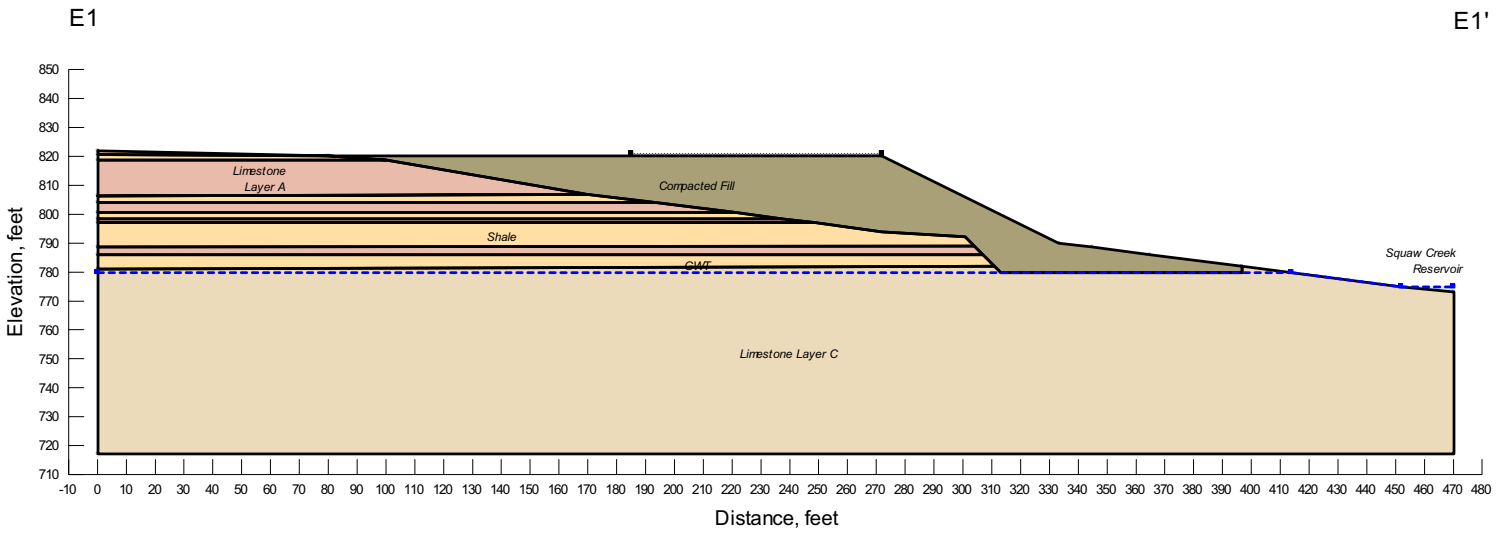


Figure 2.5.5-207 Post-Construction Cross Section E1–E1'

CTS-00921

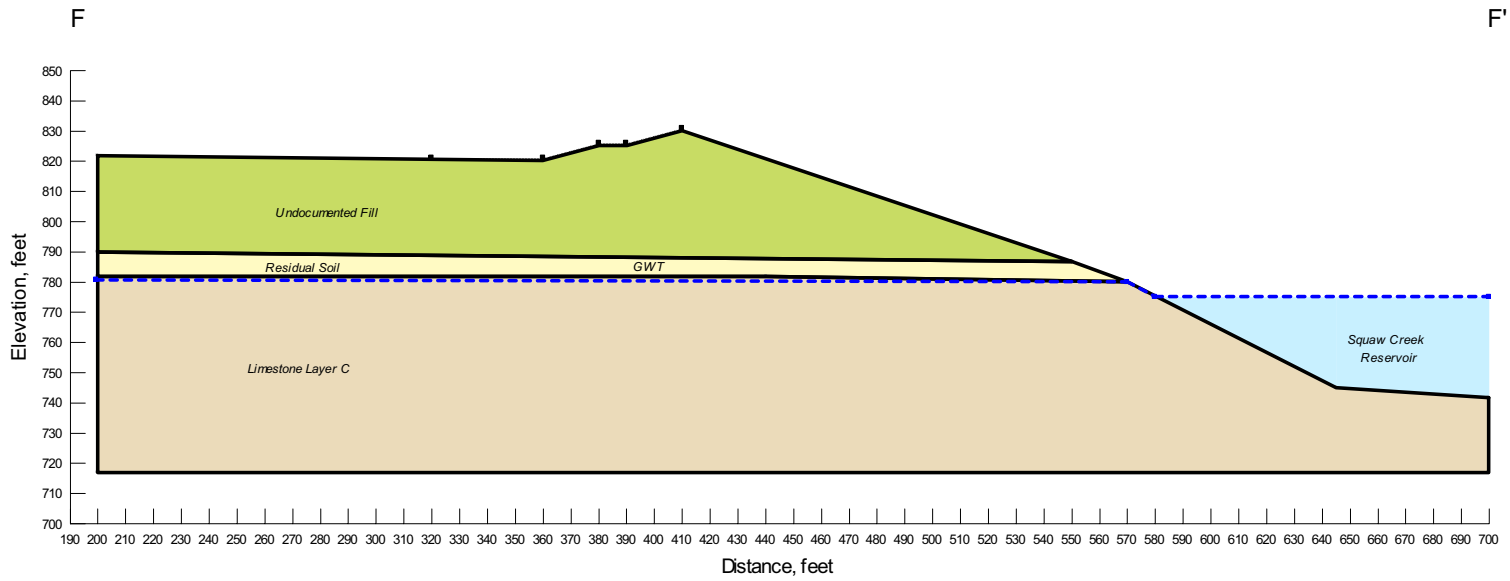


Figure 2.5.5-208 Post-Construction Cross Section F–F'

CTS-00921

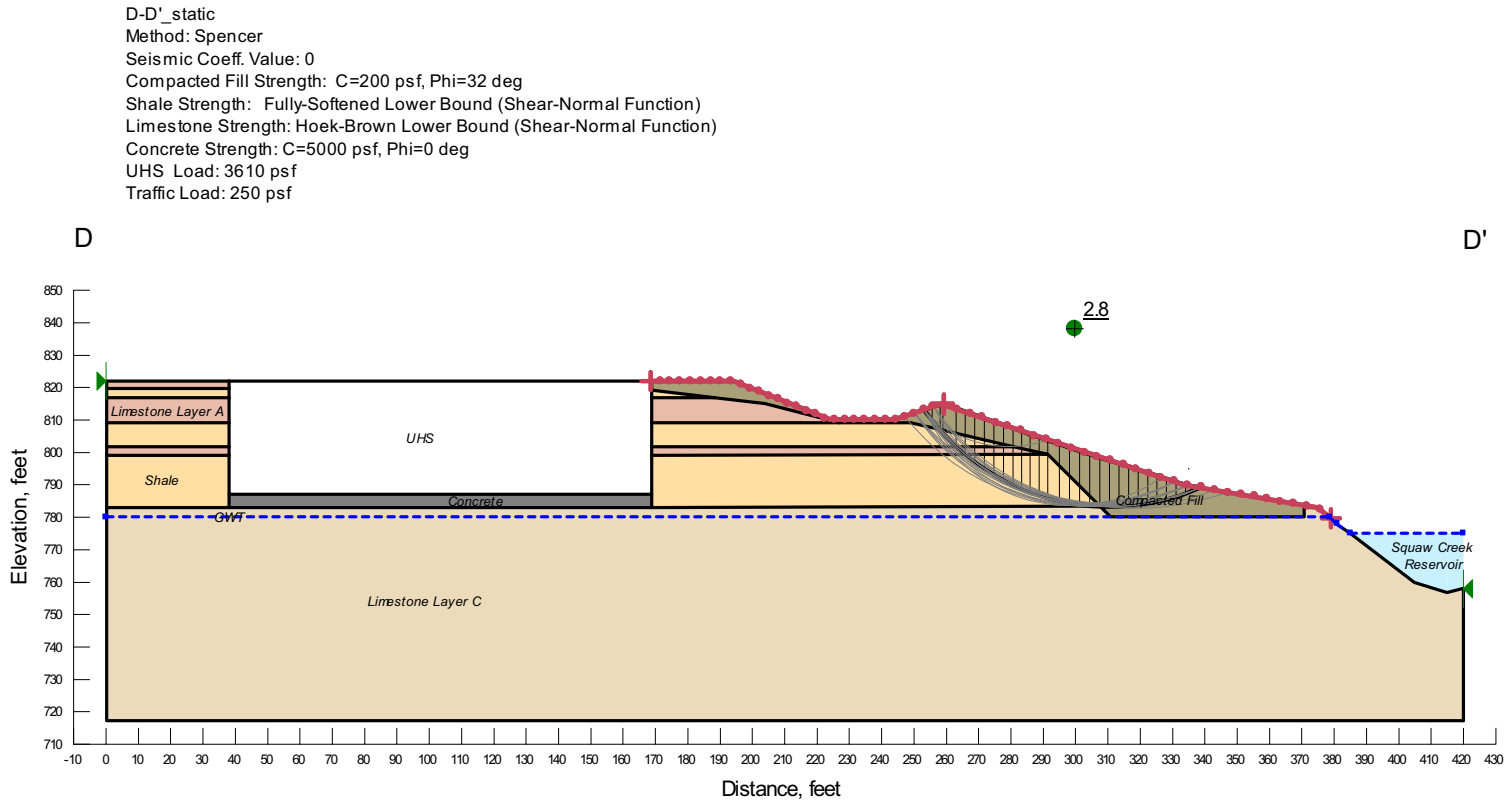


Figure 2.5.5-209 Static Stability Analysis- Cross Section D–D'

CTS-00921

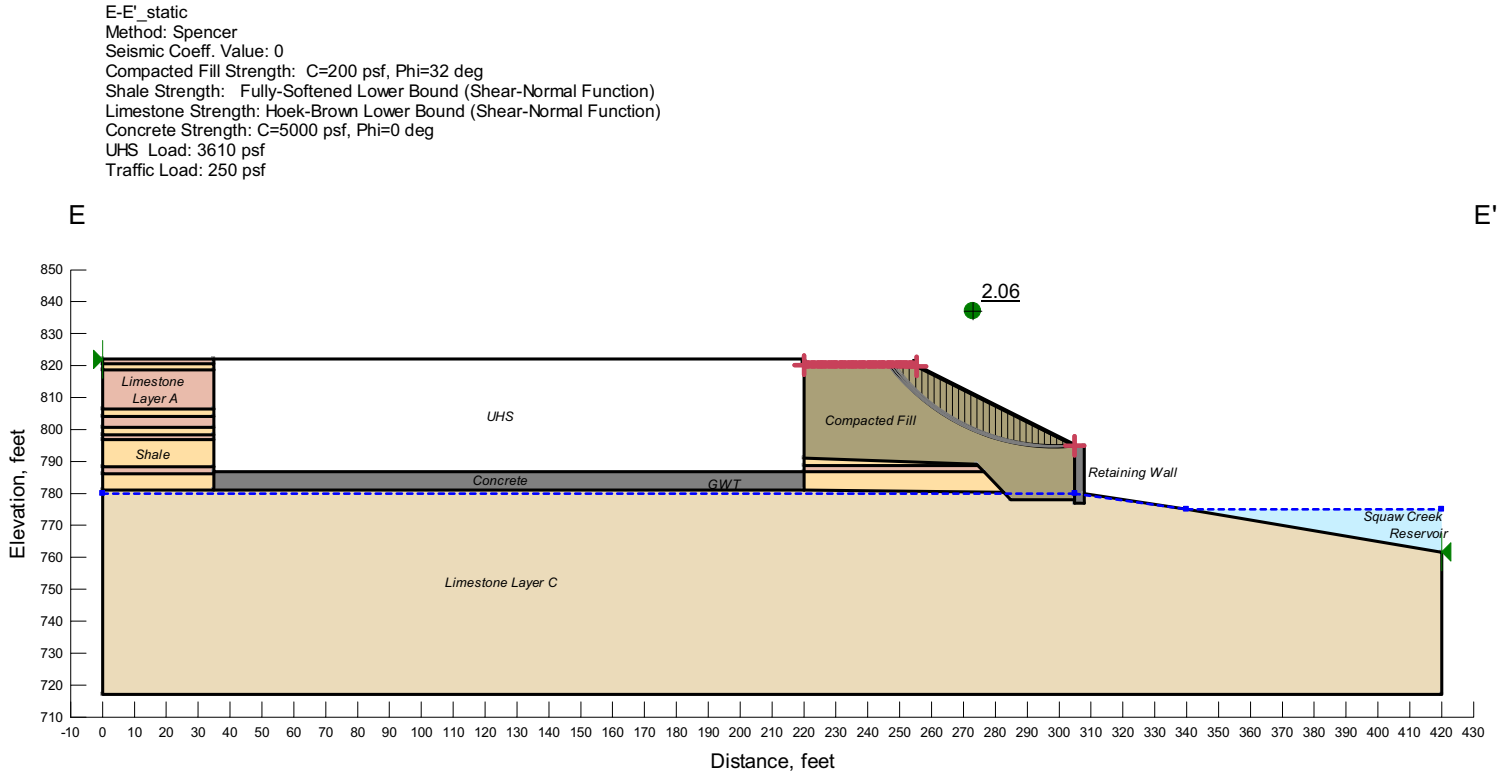


Figure 2.5.5-210 Static Stability Analysis- Cross Section E–E'

CTS-00921

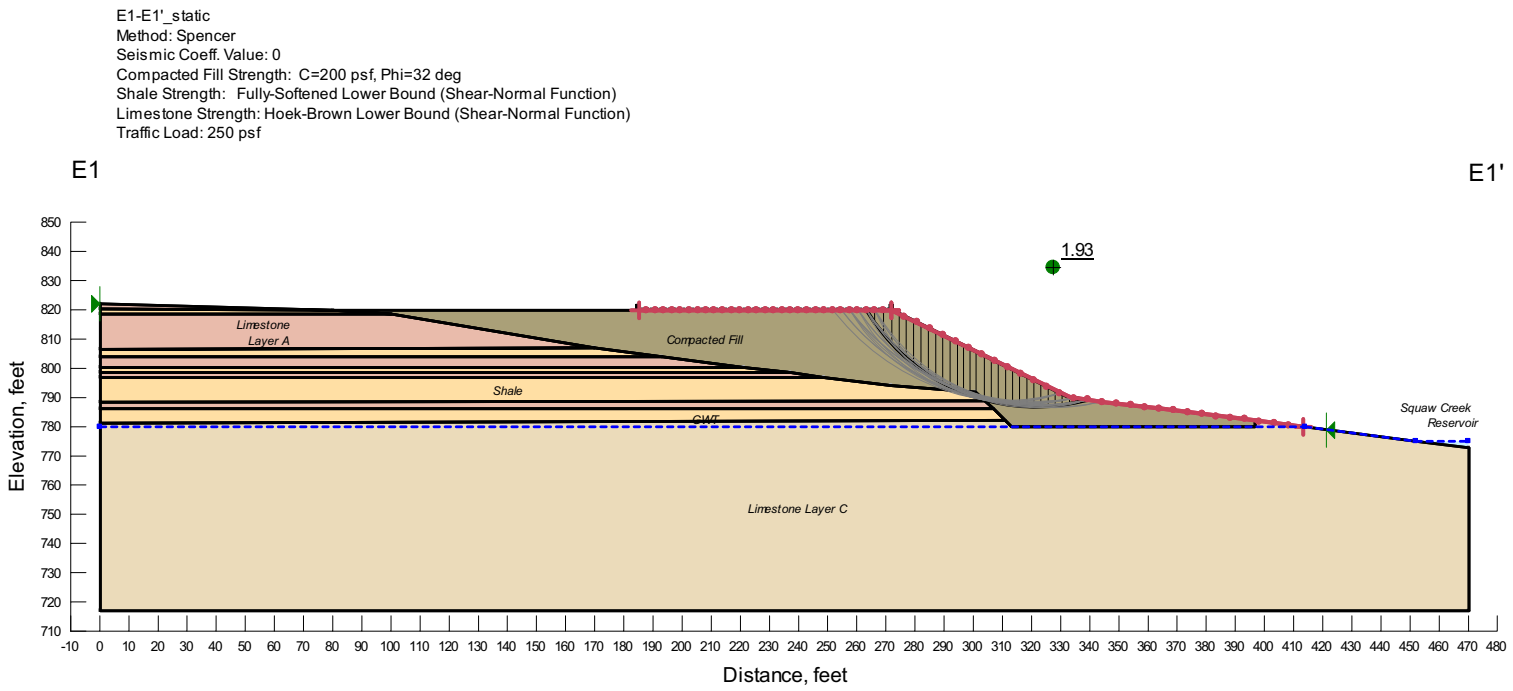


Figure 2.5.5-211 Static Stability Analysis- Cross Section E1–E1'

CTS-00921

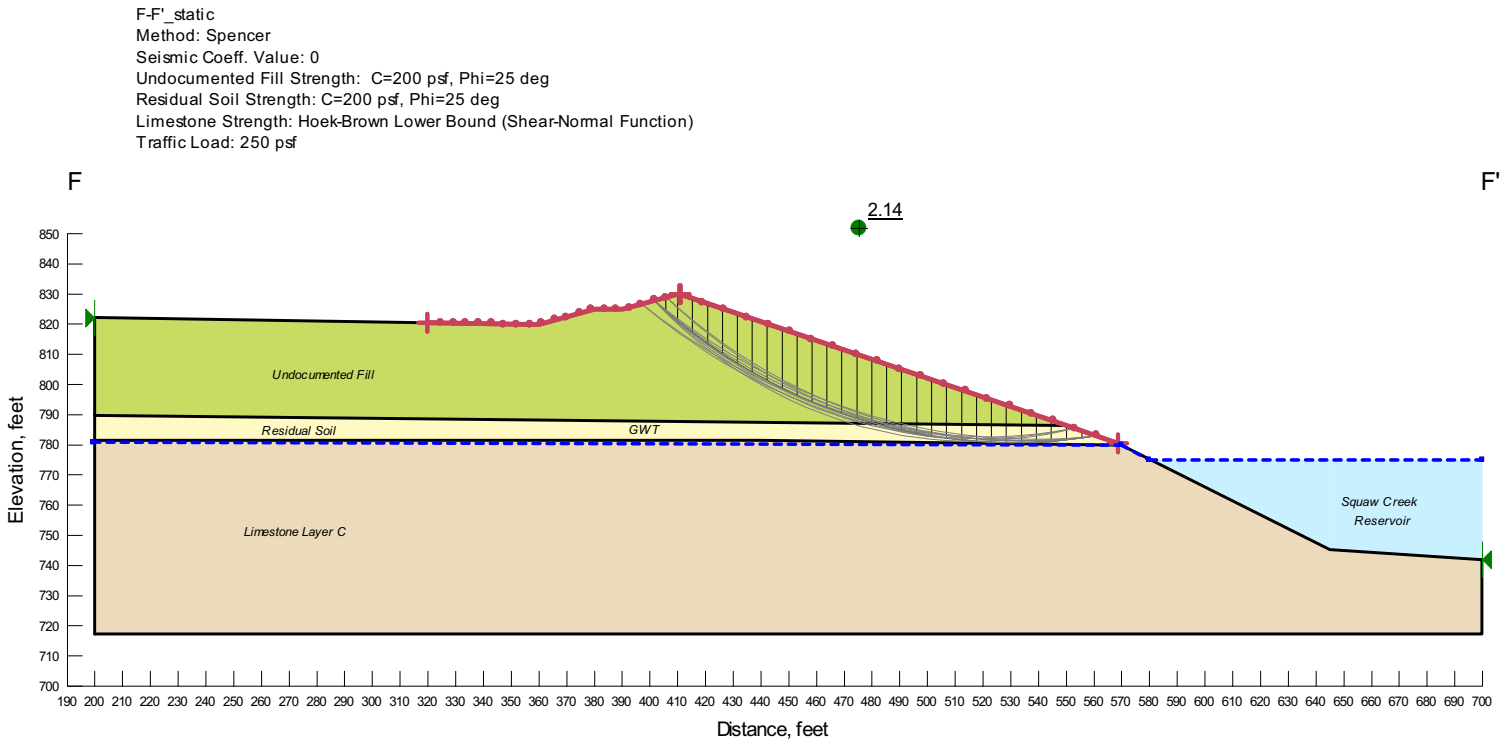


Figure 2.5.5-212 Static Stability Analysis- Cross Section F–F'

Chapter 3

Chapter 3 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2-03.05.01.05-01	3.5.1.5	3.5-2	Response to RAI No. 33 Luminant Letter no.TXNB-09054 Date 10/15/2009	Change paragraph in 3.5.1.5 to clarify no missile hazard from unit 1 and 2.	-
RCOL2_03.02.01-02	Table 3.2-201 (Sheet 1 of 3)	3.2-3	Editorial correction Response to RAI No. 47 Luminant Letter no.TXNB-09055 Date 10/19/2009	Change Valve IDs “ESW-HVC-2000” to “ESW-HCV-2000”	-
RCOL2_03.07.01-2	3.7.1.1	3.7-2	Response to RAI No. 55 Luminant Letter no.TXNB-09058 Date 10/26/2009	Revise description to clarify that the calculation of FIRS and GMRS is outlined in Subsection 2.5.2.5 and 2.5.2.6.	-
RCOL2_03.07.01-4	Table 3LL-2 Table 3LL-3	3LL-6 3LL-7	Response to RAI No. 55 Luminant Letter no.TXNB-09058 Date 10/26/2009	Editorial change: Change “0.4” to “0.04” in damping ratio.	-
RCOL2_03.09.06-6	Table 3.9-203 (Sheet 2 through 6 of 6)	3.9-8 through 3.9-12	Response to RAI No. 57 Luminant Letter no.TXNB-09058 Date 10/26/2009	Clarification of the column “Valve type”.	-
RCOL2_03.09.06-7	Table 3.9-203 (Sheet 2 through 6 of 6)	3.9-8 through 3.9-12	Response to RAI No. 57 Luminant Letter no.TXNB-09058 Date 10/26/2009	Clarification of the columns “Inservice Testing Type and Frequency and “IST Note”.	-
DCD-3.9.6-13	3.9.6.3.1 3.9.9	3.9-3 3.9-4	Response to DCD RAI No.288 MHI Letter no. UAP-HF-09245 Date 5/25/2009 Response to RAI No. 57 Luminant Letter no.TXNB-09058 Date 10/26/2009	Delete COL item 3.9(9)	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.07.03-1	3KK.5	3KK-7	Response to RAI No. 64 Luminant Letter no.TXNB-09060 Date 10/30/2009	Add reference to 3KK-9	-
RCOL2_03.07.03-2	3KK.2	3KK-3 3KK-4 3KK-5	Response to RAI No. 64 Luminant Letter no.TXNB-09060 Date 10/30/2009	Delete the last paragraph and provide further detailed explanation	-
RCOL2_03.07.03-2	Table 3KK-7	3KK-13	Response to RAI No. 64 Luminant Letter no.TXNB-09060 Date 10/30/2009	Add Table 3KK-7	-
RCOL2_03.07.03-2	Figure 3KK-4	3KK-30	Response to RAI No. 64 Luminant Letter no.TXNB-09060 Date 10/30/2009	Add Figure 3KK-4	-
RCOL2_03.03.02-3	3.3.1.2	3.3-1 3.3-2	Response to RAI No. 66 Luminant Letter no.TXNB-09061 Date 11/05/2009	Add description to clarify the applied wind forces for UHSRS	-
RCOL2_03.03.02-6	3.3.2.2.2	3.3-2	Response to RAI No. 66 Luminant Letter no. TXNB-09061 Date 11/05/2009	Add description to clarify the tornado atmospheric forces for UHS basins and cooling tower enclosure.	-
RCOL2_03.03.02-4	3.3.1.2 3.3.2.2.2 3.3.2.2.4	3.3-2 3.3-3	Response to RAI No. 66 Luminant Letter no. TXNB-09061 Date 11/05/2009	Add description to clarify the tornado atmospheric forces for the portions of the duct bank and chases.	-
RCOL2_03.11-4	3.11	3.11-1	Response to RAI No. 73 Luminant Letter no.TXNB-09063 Date 11/11/2009	Added “electrical and mechanical” before EQ records in the first sentence for CP COL 3.11 (1).	-
RCOL2_03.11-5	3.11	3.11-1	Response to RAI No. 73 Luminant Letter no.TXNB-09063 Date 11/11/2009	Added “The features of the US-APWR Equipment Environmental Qualification Program Technical Report MUAP-08015	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				(Reference 3.11-3) is included in the CPNPP Units 3 and 4 EQ Program." after the last sentence for CP COL 3.11(4).	
RCOL2_03.11-3	3.11.1.1	3.11-2	Response to RAI No. 73 Luminant Letter no.TXNB-09063 Date 11/11/2009	Added "The provision in the US-APWR DCD for environmental qualification (EQ) of mechanical equipment will be applied to the plant-specific systems." after the last sentence for CP COL 3.11(5).	-
RCOL2_03.11-6	3.11.1.2	3.11-2	Response to RAI No. 73 Luminant Letter no.TXNB-09063 Date 11/11/2009	Replaced the 2nd paragraph with "Plant Specific EQ parameters are documented in the corresponding equipment specifications, drawings, procedures, instructions, and qualification packages" for CP COL 3.11(9).	-
RCOL2_03.11-8	3.11.4	3.11-3	Response to RAI No. 73 Luminant Letter no.TXNB-09063 Date 11/11/2009	Added "as described in Technical Report MUAP-08015 (Reference 3.11-3)" in the last sentence for CP COL 3.11(6).	-
RCOL2_03.11-8	3.11.5	3.11-3	Response to RAI No. 73 Luminant Letter no.TXNB-09063 Date 11/11/2009	Added "as described in Technical Report MUAP-08015 (Reference 3.11-3)" in the last sentence for CP COL 3.11(7).	-
RCOL2_03.11-8	3.11.6	3.11-3	Response to RAI No. 73 Luminant Letter no.TXNB-09063 Date 11/11/2009	Added "as described in Technical Report MUAP-08015 (Reference 3.11-3)" in the last sentence for CP COL 3.11(8).	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.05.02-1	3.5.2	3.5-4	Response to RAI No. 80 Luminant Letter no.TXNB-09065 Date 11/13/2009	Changed the second paragraph to clarify the basis for externally generated missiles.	-
RCOL2_03.09.03-2	Table 3.9-201	3.9-5	Response to RAI No. 84 Luminant Letter no. TXNB-09065 Date 11/13/2009	Revised Table 3.9-201 to clarify the UHS transfer pump operation and be consistent with the DCD Table 3.9-7.	-
RCOL2_03.11-15	3.11	3.11-1	Response to RAI No. 97 Luminant Letter no.TXNB-09064 Date 11/11/2009	Replaced “Reference 3.11-3” with “the operational EQ program” in the 3rd sentence of 2nd paragraph for CP COL 3.11(4).	-
RCOL2_03.11-16	3.11.1.1	3.11-2	Response to RAI No. 97 Luminant Letter no.TXNB-09064 Date 11/11/2009	Replaced “or” with “and” in the 2nd sentence of 2nd paragraph for CP COL 3.11(5).	-
RCOL2_03.11-13	3.11.3	3.11-2	Response to RAI No. 97 Luminant Letter no.TXNB-09064 Date 11/11/2009	Deleted “site specific” and added “The COL applicant has a responsibility to maintain the project records until issuance of the COL” after the 2nd sentence of 2nd paragraph for CP COL 3.11(2).	-
RCOL2_03.08.01-5	3.8.1.6 3.8.4.7	3.8-1 3.8-10	Response to RAI No. 106 Luminant Letter no. TXNB-09067 Date 11/13/2009	Change paragraph in COL 3.8(7) and 3.8(22) to clarify the monitoring for degradation by aggressive ground water.	-
RCOL2_03.08.01-6	3.8.1.7	3.8-1 3.8-2	Response to RAI No. 106 Luminant Letter no. TXNB-09067 Date 11/13/2009	Add sentences into Subsection 3.8.1.7 to clarify the description of Prestressed Concrete	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				Containment Vessel ISI and IST.	
RCOL2_03.08-05-1	3.8.5.1.3.1	3.8-11	Response to RAI No. 115 Luminant Letter no. TXNB-09067 Date 11/13/2009	To clarify the usage of steel reinforcement for fill concrete.	-
RCOL2_03.08-05-4	3.8.5.5	3.8-12	Response to RAI No. 115 Luminant Letter no. TXNB-09067 Date 11/13/2009	Clarification of seismic Category I structure.	-
RCOL2_03.08-05-5	3.8.5.5 Table 3.8-202	3.8-12 3.8-16	Response to RAI No. 115 Luminant Letter no. TXNB-09067 Date 11/13/2009	Add description and table for the calculation of bearing capacity.	-
RCOL2_03.08-05-3	3.8.5.5 Table 3.8-203	3.8-12 3.8-17	Response to RAI No. 115 Luminant Letter no. TXNB-09067 Date 11/13/2009	Add description and table for factor of safety for overturning, sliding and flotation.	-
RCOL2_03.07.02-1	3.7.1.1	3.7-2	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Revised section number to break down the reference section number	-
RCOL2_03.07.02-9	3.7.2.4.1	3.7-10	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for envelopment of site-specific variation in T/B and A/B in the 15th paragraph.	-
RCOL2_03.07.02-6	3.7.2.4.1	3.7-10	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for envelopment of site-specific variation in PS/B in the last paragraph.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.07.02-16	3KK.1 3KK.2	3KK-1 3KK-2 3KK-3	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for SSI analysis	-
RCOL2_03.07.02-11	3KK.2	3KK-3 3KK-6	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for SSI analysis	-
RCOL2_03.07.02-16	3KK.3	3KK-7 3KK-8	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for SSI analysis in third and fifth paragraph.	-
RCOL2_03.07.02-15	3KK.4	3KK-8	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for ISRS.	-
RCOL2_03.07.02-11	Table 3KK-8	3KK-17	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added Table for the summary of analysis	-
RCOL2_03.07.02-16	Table 3KK-9	3KK-18	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added Table for the comparison of ANSIS and SSI	-
RCOL2_03.07.02-16	3LL.1 3LL.2	3LL-1	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for SSI analysis	-
RCOL2_03.07.02-11	3LL.2	3LL-2	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for SSI analysis in sixth paragraph.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.07.02-16	3LL.2	3LL-2 3LL-3	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for SSI analysis in seventh through tenth paragraph.	-
RCOL2_03.07.02-11	3LL.2	3LL-3 3LL-4	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for SSI analysis in eighth through 15th paragraph.	-
RCOL2_03.07.02-16	3LL.2	3LL-4	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for SSI analysis in ninth paragraph.	-
RCOL2_03.07.02-13	3LL.3 3LL.4	3LL-5 3LL-5 3LL-6	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for SSI analysis	-
RCOL2_03.07.02-15	3LL.4	3LL-6	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Deleted description for peak clipping	-
RCOL2_03.07.02-12	Table 3LL-6 Table 3LL-7 Table 3LL-8	3LL-12 3LL-13 3LL-14	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for note 1.	-
RCOL2_03.07.02-13	Table 3LL-9 Table 3LL-10 Table 3LL-11	3LL-15 3LL-16 3LL-17	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for note 1.	-
RCOL2_03.07.02-11	Table 3LL-14	3LL-20	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added Table for the summary of SSI analysis	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.07.02-16	Table 3LL-15	3LL-21	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added table for the major structural modes of Tunnel Segment 2 of ESWPT.	-
RCOL2_03.07.02-16	3MM.1 3MM.2	3MM-1 3MM-2	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for SSI analysis	-
RCOL2_03.07.02-11	3MM.2	3MM-3	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for SSI analysis in 8th paragraph.	-
RCOL2_03.07.02-16	3MM.2	3MM-3	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for SSI analysis in 9th through 15th paragraphs.	-
RCOL2_03.07.02-11	3MM.2	3MM-4	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for SSI analysis in 17th through 20th paragraphs.	-
RCOL2_03.07.02-11	3MM.3	3MM-5	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for SSI analysis in 1 and 2 paragraphs.	-
RCOL2_03.07.02-15	3MM.4	3MM-6	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Deleted description for peak clipping	-
RCOL2_03.07.02-14	Table 3MM-6	3MM-12	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed description for note 1.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.07.02-11	Table 3MM-8	3MM-14	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added Table for the summary of SSI analysis	-
RCOL2_03.07.02-16	Table 3MM-9	3MM-15	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added table for the major structural modes of PSFSV.	-
RCOL2_03.07.02-5	3NN.2	3NN-2	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Changed the description for subgrade properties.	-
RCOL2_03.07.02-2	3NN.2	3NN-2 3NN-3	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description for backfill properties	-
RCOL2_03.07.02-8	3NN.4 Table 3NN-12 Table 3NN-13 Table 3NN-14	3NN-6 3NN-17 3NN-18 3NN-19	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added description and tables for maximum acceleration	-
RCOL2_03.07.02-2	Table 3NN-16	3NN-21	Response to RAI No. 60 Luminant Letter no.TXNB-09073 Date 11/24/2009	Added table for backfill properties	-
RCOL2_03.08.04-2	3.8.4.1.3	3.8-3	Response to RAI No. 108 Luminant Letter no.TXNB-09078 Date 12/10/2009	Revised to incorporate a site-specific specification for the expansion/separation joint	-
RCOL2_03.08.04-1	3.8.4.1.3.1	3.8-4 3.8-5	Response to RAI No. 108 Luminant Letter no.TXNB-09078 Date 12/10/2009	Revised to add more discussion concerning the design of the ESWPT	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.08.04-2	3.8.4.1.3.2	3.8-5	Response to RAI No. 108 Luminant Letter no.TXNB-09078 Date 12/10/2009	Revised to incorporate a site-specific specification for the expansion/separation joint	-
RCOL2_03.08.04-3	3.8.4.1.3.2	3.8-6	Response to RAI No. 108 Luminant Letter no.TXNB-09078 Date 12/10/2009	Revised to incorporate an appropriate reference to the safety-related components in Table 3.2-201 that are protected from tornado missile impacts and to clarify the statement.	-
RCOL2-03.08.04-43	3NN.2 3NN.3	3NN-3 3NN-5 3NN-6	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the description for the fill.	-
RCOL2-03.08.04-51	3.7.1.3 3NN.2	3.7-6 3NN-2	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Add description for fill concrete.	-
RCOL2_03.08.04-19	3.8.4.4.3.2 3KK.2	3.8-11 3KK-7	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the description for spring model	-
RCOL2_03.08.04-32	3.8.4.4.3.2 3KK.2 3KK.3	3.8-11 3KK-6 3KK-8	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the description for soil spring model for UHSRS	-
RCOL2_03.08.04-20	3KK.1 3MM.1 3NN.1	3KK-1 3MM-1 3NN-1	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description for input motion	-
RCOL2_03.08.04-18	3KK.2 Table 3KK-9	3KK-1 3KK-2 3KK-4 3KK-19	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description for mesh model	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.08.04-21	3KK.2	3KK-2	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description for separation joint	-
RCOL2_03.08.04-27	3KK.2	3KK-2 3KK-6	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added explanation not performing analysis including adjacent structure.	-
RCOL2_03.08.04-23	3KK.2	3KK-2	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added reference to Appendix 3NN	-
RCOL2_03.08.04-24	3KK.2	3KK-3	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description for fill considered in the analysis	-
RCOL2_03.08.04-25	3KK.2	3KK-4	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Add description of modeling for basemat and concrete fill.	-
RCOL2_03.08.04-26	3KK.2 3KK.5	3KK-4 3KK-10	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the technical basis and the reference of equation for the cracked out-of plane flexural stiffness.	-
RCOL2_03.08.04-31	3KK.2 3KK.3	3KK-7 3KK-8	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the design input response spectra	-
RCOL2_03.08.04-28	3KK.3	3KK-7 3KK-8	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the base shear and moment demands on walls.	-
RCOL2_03.08.04-30	3KK.3	3KK-8	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Provided the technical basis for the factor.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.08.04-33	3KK.4 3LL.4 3MM.4	3KK-9 3LL-6 3MM-6	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the effect of out-of-plane wall flexibility	-
RCOL2_03.08.04-35	3LL.1	3LL-1	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description of wave effect.	-
RCOL2_03.08.04-36	3LL.2	3LL-1	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the separation from the adjacent structure.	-
RCOL2_03.08.04-40	3LL.2	3LL-1 3LL-3	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the soil considered in the SSI analysis.	-
RCOL2_03.08.04-37	3LL.2	3LL-2	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the shell elements connected to brick elements	-
RCOL2_03.08.04-34	3LL.2	3LL-2 through 3LL-5	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the soil model	-
RCOL2_03.08.04-44	3LL.2	3LL-4	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the response spectra analysis	-
RCOL2_03.08.04-41	3LL.2 3LL.3	3LL-5	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the combination of cross-directional contribution	-
RCOL2_03.08.04-42	Table 3LL-1	3LL-8	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added Note 2 in Table 3LL-1.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.08.04-45	Table 3LL-13	3LL-20	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added allowable bearing capacity in Table 3LL-13	-
RCOL2_03.08.04-47	3MM.2	3MM-2	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the modeling of fuel oil tank	-
RCOL2_03.08.04-48	3MM.2	3MM-3	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Provide detail information for the modeling of backfill	-
RCOL2_03.08.04-46	3MM.2	3MM-5	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the soil pressure	-
RCOL2_03.08.04-49	3MM.3 Figure 3MM-2	3MM-6 3MM-19	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the symmetrical load distribution	-
RCOL2_03.08.04-50	3MM.4	3MM-6	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarify the basis of the seismic design	-
RCOL2_03.08.04-60	3NN	3NN-I 3NN-1	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Corrected the typographical error in the title of the appendix	-
RCOL2_03.08.04-52	3NN.2 Table 3NN-1	3NN-2 3NN-10	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added the description for backfill and corrected the abbreviation of Upper Bound	-
RCOL2_03.08.04-22	3NN.2	3NN-3	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description for backfill properties	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.08.04-53	3NN.2 3NN.3	3NN-3 3NN-5 3NN-6	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description for backfill properties	-
RCOL2_03.08.04-54	3NN.2	3NN-3 3NN-4	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Move the description for time step in SSI analysis and revised the description for the backfill properties in SSI analysis.	-
RCOL2_03.08.04-57	3NN.3	3NN-4 3NN-5	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description for modeling of rigid link	-
RCOL2_03.08.04-58	3NN.3 Table 3NN-6	3NN-5 3NN-14	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Clarified the description for Table 3NN-6	-
RCOL2_03.08.04-56	3NN.3	3NN-7	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added description for transfer function	-
RCOL2_03.08.04-55	3NN.4	3NN-8	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added the description for the cutoff frequency.	-
CTS- 01090	Table 3NN-2	3NN-10	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Corrected the typographical error in the title of Table 3NN-2	-
RCOL2_03.08.04-59	Table 3NN-12 Table 3NN-13 Table 3NN-14	3NN-19 through 3NN-24	Response to RAI No. 122 Luminant Letter no.TXNB-09085 Date 12/14/2009	Added the enveloped acceleration of COL and DCD	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_09.02.05-02	Table 3.2-201 (Sheet 2 of 3)	3.2-4	Response to RAI No. 121 Luminant Letter no.TXNB-09081 Date 12/16/2009	Added a line item under 2. UHS, “UHS basin makeup piping and valves” and associated information.	-
RCOL2_09.02.05-03	3.8.4.1.3.2	3.8-5	Response to RAI No. 121 Luminant Letter no.TXNB-09081 Date 12/16/2009	Added description to the second paragraph on the cementitious membrane on the basin walls to minimize water seepage.	-
RCOL2_09.02.05-03	3.8.4.1.3.2	3.8-6	Response to RAI No. 121 Luminant Letter no.TXNB-09081 Date 12/16/2009	Added description to the end of the ninth paragraph that tornado differential pressure was considered in the design of fan motors and associated equipment.	-
RCOL2_09.02.05-03	3.8.4.1.3.2	3.8-6	Response to RAI No. 121 Luminant Letter no.TXNB-09081 Date 12/16/2009	Added tenth paragraph to provide description that the exterior parts of the cooling tower enclosure are designed to prevent becoming full penetration tornado missiles.	-
RCOL2_09.02.05-04	Table 3.7.1-3R	3.7-16	Response to RAI No. 121 Luminant Letter no.TXNB-09081 Date 12/16/2009	Revised the fifth note to say, “Each mat foundation supports one UHS basin with one pool.”	-
RCOL2_09.04.05-04	3.8.4.1.3.2	3.8-6	Response to RAI No. 123 Luminant Letter no.TXNB-09081 Date 12/16/2009	Added seventh paragraph to provide description that tornado missile shields are provided for air intake and air outlets for the ESWS pump house HVAC.	-
RCOL2_09.04.05-06	3.5.1.1.2	3.5-1	Response to RAI No. 123 Luminant Letter no.TXNB-09081 Date 12/16/2009	Added new Subsection 3.5.1.1.2, “High-Speed Rotating Equipment”	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01089	3.4.1.4	3.4-2	Clarification	Break down the reference section number	0
CTS-00922	3.7.1.3 3.7.4.3 Table 3.7-201 3KK.2 3KK.3 3MM.2 3LL.2	3.7-6 3.7-16 3.7-21 3KK-2 3KK-9 3MM-3 3LL-2	Clarification	Clarify the sentence to Delete “major” and breakdown the reference section number.	0
MAP-00-201	Table 3.9-202	3.9-6	The change of numbering rule of Tag number	Change Tag numbers	0
MAP-00-201	Table 3.9-203 (Sheet 5, 6 of 6)	3.9-11 3.9-12	The change of numbering rule of Tag number	Change Tag numbers	0
MAP-00-201	Table 3D-201 (Sheet 1 through 10 of 10)	3D-2 through 3D-11	The change of numbering rule of Tag number	Change Tag numbers	0
RCOL2_03.11-12 S01	3.11	3.11-1	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced “Assume EQ Responsibilities for Unit 3” and “Assume EQ Responsibilities for Unit 4” with “Operational EQ Program established”.	-
RCOL2_03.11-12 S01	3.11	3.11-1	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced “CPNPP Units 3 and 4, at time of license issuance, assumes full responsibility for the” with “Prior to unit fuel load, the Licensee establishes and implements an Operational”.	-
RCOL2_03.11-12 S01	3.11	3.11-1	Response to RAI No. 97 Supplemental Luminant Letter	Added “and” between “EQ program” and “assembles”.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			no.TXNB-10018 Date 3/5/2010		
RCOL2_03.11-12 S01	3.11	3.11-1	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Deleted “Environmental” and replaced “is” with “are”.	-
RCOL2_03.11-16 S01	3.11.1.1	3.11-2	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced “safety-related equipment and important to safety equipment” with “safety-related equipment and non-safety-related equipment which is important to safety”.	-
RCOL2_03.11-16 S01	3.11.1.1	3.11-2	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced “The provision in the US-APWR DCD for environmental qualification EQ of mechanical equipment will be applied to the plant-specific systems” with “The provisions in the US-APWR DCD for the environmental qualification of mechanical equipment are applied to the plant-specific systems”	-
RCOL2_03.11-12 S01	3.11.1.2	3.11-2	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced “Plant Specific” with “Plant-specific”.	-
RCOL2_03.11-13 S01	3.11.3	3.11-2	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Added “or” and deleted “or is held for permit verification”.	-
RCOL2_03.11-13 S01	3.11.3	3.11-2	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced “The COL applicant has a responsibility to maintain the project records until issuance of the COL. The license	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				holder for CPNPP Unit 3 and 4 assumes full responsibility for the EQ program at time of license issuance" with "Documentation for the qualification of safety-related equipment and non-safety-related equipment which is important to safety is ultimately the responsibility of the COL Applicant who, later as the licensee, maintains a complete set of EQ records".	
RCOL2_03.11-17 S01	3.11.4	3.11-3	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced "an equivalent qualification process to that delineated for the US-APWR standard plant as" with "the process".	-
RCOL2_03.11-17 S01	3.11.5	3.11-3	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced "an equivalent qualification process to that delineated for the US-APWR standard plant as" with "the process".	-
RCOL2_03.11-17 S01	3.11.6	3.11-3	Response to RAI No. 97 Supplemental Luminant Letter no.TXNB-10018 Date 3/5/2010	Replaced "an equivalent qualification process to that delineated for the US-APWR standard plant as" with "the process".	-
CTS-01115	3.5.1.1.2	3.5-1	Subsection 3.5.1.1.2 was created in response to RAI 123 and the left margin notation was not added.	Added COL item CP SUP 3.5(1) in the left margin notation to subsection 3.5.1.1.2	2
DCD_03.06.03-19	3.6.3.3.1 3.6.4	3.6-2 [3.6-3]	Reflect response to DCD RAI No.485	Added new subsection 3.6.3.3.1 and STD COL 3.6(10)	2
CTS-01122	3.8.4.7	3.8-14	Clarification	Clarified reference to the DCD	2

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01123	3.11	3.11-1	Clarification	Corrected the words of COL item 3.11(4)	2
MAP-03-027	APPENDIX 3K	- 3K-i 3K-1	Consistency with DCD Rev2	Added Appendix 3K	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

3.5 MISSILE PROTECTION

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP SUP 3.5(1)

3.5.1.1.2 High-Speed Rotating Equipment

RCOL2_09.04.05-6
CTS-01115

After the fifth paragraph of DCD Subsection 3.5.1.1.2, add the following:

Potential sources of internal missiles from high-speed rotating equipment are assessed for the UHS ESW pump house. Internally generated missiles from ventilaton fans, pumps and cooling tower fans are not considered credible. Design considerations that apply include:

- Rotating elements are contained within the casing, and the induction motors are designed to withstand an over-speed.
- The fan blades of the unit heaters are contained inside the unit heater housing. The unit heater housing are designed to prevent the fan blades from penetrating it.
- The exhaust fans are mounted on the wall with steel shrouds placed around each fan. These fans are not in line with the motors so that a fan blade would not strike the motor.
- Rotation of the UHS cooling tower exhaust fans is such that if a fan blade leaves the hub it will tend to travel down since it is forcing air up. Beneath the fans, there is a substantial steel and concrete structure to restrain the blade. The fan blades are shrouded on the sides by a concrete wall that prevents the blades from leaving the shrouded area in a horizontal direction. The concrete slabs above the fans, placed there for external missile protection, also prevent any broken blades from leaving the fan room in the upward direction. The fan room itself is enclosed by concrete walls and partial roof that prevents any broken fan blade pieces from leaving the room.
- The ESW pumps and pump motors are all enclosed within concrete walls capable of preventing a generated missile from leaving the pump compartment. The transfer pump motor is enclosed within a concrete wall enclosure that isolates it from the ESW pump motor so that failure of one does not affect operation of the other. Failure of a pump impeller by fracture of the impeller blade does not affect the other pump in the same basin as the broken blade is confined within the pump casing and falls to the basin bottom when the energy is expended.

STD COL 3.6(4) Replace the second paragraph in DCD Subsection 3.6.2.1 with the following.

There is no site-specific high-energy piping in CPNPP Units 3 and 4. The site-specific moderate energy piping systems in CPNPP Units 3 and 4 are the ESWS and the FSS. A failure in the ESWS and FSS piping does not affect the safety function of the ESWS and the UHS that are required for a design basis accident and for safe shutdown, as described in Subsection 3.6.1.3.

3.6.3.3.1 Water Hammer

DCD_03.06.03-19

STD COL 3.6(10) Replace the fourth paragraph DCD Subsection 3.6.3.3.1 with the following.

Generally, water hammer is not experienced in Reactor Coolant Loop (RCL) branch piping, and the piping is designed to preclude the voiding condition according to operation at a pressure greater than the saturation pressure of the coolant. No valve that requires immediate action, such as pressurizer safety valve or relief valve, is present in the piping. Operating and maintenance procedures regarding water hammer are included in system operating procedures in Subsection 13.5.2.1. A milestones schedule for implementation of the procedures is also included in Subsection 13.5.2.1. The procedures are to address plant operating and maintenance requirements to provide adequate measures to prevent water hammer due to a voided line condition.

3.6.4 Combined License Information

Replace the content of DCD Subsection 3.6.4 with the following.

STD COL 3.6(1) ***3.6(1)*** *Postulated failures associated with site-specific piping*

This COL item is addressed in Subsection 3.6.1.3.

3.6(2) *Deleted from the DCD.*

3.6(3) *Deleted from the DCD.*

STD COL 3.6(4) ***3.6(4)*** *Criteria used to define break and crack location and configuration for site-specific piping.*

This COL item is addressed in Subsection 3.6.2.1.

3.6(5) *Deleted from the DCD.*

3.6(6) *Deleted from the DCD.*

3.6(7) *Deleted from the DCD.*

3.6(8) *Deleted from the DCD.*

3.6(9) *Deleted from the DCD.*

STD COL 3.6(10) ***3.6(10)*** *Operating and maintenance procedures for water hammer prevention.*

This COL item is addressed in Subsection 3.6.3.3.1.

DCD_03.06.03-19

length. The load in the foundation mat is then transferred to the bedrock via friction and shear keys.

3.8.4.6.1.1 Concrete

CP COL 3.8(28) Replace the third sentence of the first paragraph in DCD Subsection 3.8.4.6.1.1 with the following.

For ESWPT, UHSRS, and PSFSVs concrete compressive strength, f'_c = 5,000 psi is utilized. The compressive strength, f'_c, of the concrete fill under the ESWPT, UHSRS, and PSFSVs is 3,000 psi. RCOL2_03.08.04-17

3.8.4.7 Testing and Inservice Inspection Requirements

CP COL 3.8(22) Replace the second through last paragraph of DCD Subsection 3.8.4.7 with the following. CTS-01122

A site-specific program for monitoring and maintenance of seismic category I structures is performed in accordance with the requirements of NUMARC 93-01 (Reference 3.8-28) and 10 CFR 50.65 (Reference 3.8-29) as detailed in RG 1.160 (Reference 3.8-30). Monitoring of seismic Category I structures includes base settlements and differential displacements.

Prior to completion of construction, site-specific programs are developed in accordance with RG 1.127 (Reference 3.8-47) for ISI of seismic category I water control structures, including the UHSRS and any associated safety and performance instrumentation.

The site-specific programs address in particular ISI of critical areas to assure plant safety through appropriate levels of monitoring and maintenance. Any special design provisions (such as providing sufficient physical access or providing alternative means for identification of conditions in inaccessible areas that can lead to degradation) to accommodate ISI are also required to be addressed in the ISI program.

Because the CPNPP site exhibits nonaggressive ground water/soil (i.e., pH greater than 5.5, chlorides less than 500 ppm, and sulfates less than 1,500 ppm), the program for ISI of inaccessible, below-grade concrete walls and foundations of seismic category I structures~~the UHSRS~~ is less stringent than would be applied for sites with aggressive ground water/soil. The program is required to include requirements for (1) examination of the exposed portions of the below-grade concrete, when excavated for any reason, for signs of degradation; and (2) RCOL2_03.08.01-5

3.11 ENVIRONMENTAL QUALIFICATION OF MECHANICAL AND ELECTRICAL EQUIPMENT

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP COL 3.11(3) Replace the last sentence of the fifth paragraph in DCD Section 3.11 with the following.

The CPNPP Units 3 and 4 EQ Program implementation milestones are as follows:

Activity	Milestone
Formulate Units 3 and 4 EQ Program	COLA Submittal
Assist with Reactor Vendor/Architect-Engineer/Constructor EQ Program	Combined License
~~Assume EQ Responsibilities for Unit 3~~Operational EQ Program established	Unit 3 Fuel Load
~~Assume EQ Responsibilities for Unit 4~~Operational EQ Program established	Unit 4 Fuel Load

RCOL2_03.11-12 S01

CP COL 3.11(1) Replace the first sentence of the sixth paragraph in DCD Section 3.11 with the following.

~~CPNPP Units 3 and 4, at time of license issuance, assumes full responsibility for the~~ Prior to unit fuel load, the Licensee establishes and implements an Operational EQ program~~,~~ and assembles~~,~~ and maintains the electrical and mechanical EQ records for the life of the plant to fulfill the records retention requirements delineated in 10 CFR 50.49 (Reference 3.11-2) and in compliance with the quality assurance program (QAP) described in Chapter 17.

RCOL2_03.11-12 S01

RCOL2_03.11-4

CP COL 3.11(4) Replace the eighth paragraph in DCD Section 3.11 with the following.

This subsection addresses EQ implementation in conjunction with the initial design, procurement, construction, startup and testing up to the point of turnover ~~and initial license issuance~~. Implementation of the operational EQ program is included in Table 13.4-201. Periodic tests, calibrations, and inspections which verify that the identified equipment remains capable of fulfilling its intended function are described in ~~Reference 3.11-3~~the operational EQ program. The

CTS-01123

RCOL2_03.11-15

APPENDIX 3K

MAP-03-027

COMPONENTS PROTECTED FROM INTERNAL FLOODING

TABLE OF CONTENTS

MAP-03-027

3K COMPONENTS PROTECTED FROM INTERNAL FLOODING

MAP-03-027

This section of the referenced DCD is incorporated by reference with no departures or supplements.

Chapter 4

Chapter 4 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Chapter 5

Chapter 5 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_05.02.01.01-1	5.2.1.1	5.2-1	Responses to RAI No. 40, Luminant Letter TXNB-09055 Dated 10/19/2009	Replaced sentence in DCD Section 5.2.1.1 and applied the same ASME Code editions in DCD Table 5.2.1-1 and section 3.9.10	-
RCOL2_05.02.05-1	5.2.5.9	5.2-2 5.2-3	Responses to RAI No. 58, Luminant Letter no. TXNB-09058 Dated 10/26/2009	Added operational procedures regarding conversion of the referenced leak detection instruments and procedures for operator response to prolonged low-level leakage description.	-
RCOL2_05.02.05-1	Table 1.8-208 (Sheet 29 of 68)	1.8-38	Responses to RAI No. 58, Luminant Letter no. TXNB-09058 Dated 10/26/2009	Added procedures for conversion into common leakage rate and procedures for determining the existence of and operator response to prolonged low-level leakage conditions.	-
RCOL2_05.03.01-2	5.3.1.6.1	5.3-1	Responses to RAI No. 65, Luminant Letter no. TXNB - 09060 Dated 10/30/2009	Added test specimen and capsules description under section 5.3.1.6.1.	-
RCOL2_05.02.04-1	5.2.4.1	5.2-2	Responses to RAI No. 87, Luminant Letter no. TXNB-09062 Dated 11/5/2009	Added Boric Acid Corrosion Control Program (BACCP) for CPNPP Units 3 and 4 procedures for determining pressure boundary locations by boric acid corrosion and description for performing visual inspection of accessible and observable components during system walkdowns and during plant outages.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_05.02.05-3	5.2.5.9	5.2-3 5.2.4	Responses to RAI No. 127 Luminant Letter no. TXNB-10007 Dated 2/19/2010	Added procedure guidance as described in RG 1.45 to identify, monitor and respond to leakages.	-
RCOL2_05.03.01-3	5.3.1.6.1	5.3-2	Responses to RAI No. 128 Luminant Letter no. TXNB-10007 Dated 2/19/2010	Added a statement about the recommended general capsule withdrawal schedule to the surveillance program.	-

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Chapter 6

Chapter 6 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00915	6.2.2.3	6.2-1	Response to RAI No. 76 Luminant Letter no.TXNB-09066 Date 11/12/2009	Revised the location of the replaced sentence and paragraph.	-
RCOL2_06.02.02-3	6.2.2.3	6.2-1	Response to RAI No. 76 Luminant Letter no.TXNB-09066 Date 11/12/2009	Add the cleanliness program items.	-
RCOL2_06.04-1	6.4.4.2	6.4-3	Response to RAI No. 77 Luminant Letter no.TXNB-09066 Date 11/12/2009	Add the description of the periodic surveys.	-
RCOL2_06.04-5	6.4.4.2	6.4-3	Response to RAI No. 77 Luminant Letter no.TXNB-09066 Date 11/12/2009	Add the description of operator actions in the event of a toxic gas release.	-

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Chapter 7

Chapter 7 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Chapter 8

Chapter 8 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
MAP-08-201	Figure 8.1-1R	8.1-3	Consistency with DCD Revision 2	Deleted one feeder line between Class 1E LC and MCC, since two feeder lines were incorrectly depicted between Class 1E LC and MCC (editorial change). Added feeder lines from Class 1E MCC to MOV inverter. Changed the inputs to N21 and N22 UPS Units.	0
RCOL2_08.02-27	8.2.1.2	8.2-3	Response to RAI No. 152 Luminant Letter no.TXNB-10037 Date 5/18/2010	Added two paragraphs after the eleventh paragraph.	-

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Chapter 9

Chapter 9 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_09.01.05-1	9.1.5	9.1-1	Responses to RAI No. 52 Luminant Letter no. TXNB-09057 Dated 10/21/2009	Added Subsection 9.1.5, Overhead Heavy Load Handling System	-
RCOL2_09.01.05-1	9.1.6	9.1-2	Responses to RAI No. 52 Luminant Letter no. TXNB-09057 Dated 10/21/2009	Added COL Item CP COL 9.1(6), The establishment of a Heavy Load Handling Program.	-
RCOL2_09.04.01-1	9.4.1.2	9.4-1	Responses to RAI No. 63 Luminant Letter no. TXNB-09060 Dated 10/30/2009	Provided clarification on the design basis MCR temperature that the heating coils are designed to.	-
RCOL4_16-6	9.2.5.2.2	9.2-9	Responses to RAI No. 90 Luminant Letter no. TXNB-09064 Dated 11/11/2009	Each cooling tower fan starts automatically on an actual or simulated actuation signal.	-
RCOL2_09.02.01-1	9.2.1.2.2.1	9.2-2	Responses to RAI No. 109 Luminant Letter no. TXNB-09071 Dated 11/20/2009	Added System head losses and basis for available NPSH.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_09.02.01-2	9.2.1.3	9.2-3	Responses to RAI No. 109 Luminant Letter no. TXNB-09071 Dated 11/20/2009	Described plant procedures in the second bullet. Describe that heat tracing is activated upon low ambient temperature. Describe heat exchanger backflush operation.	-
RCOL2_09.02.01-5	9.2.1.3	9.2-3	Responses to RAI No. 109 Luminant Letter no. TXNB-09071 Dated 11/20/2009	Except for a design basis seismic event, the ESWS is not required to supply water to the FSS during any other design basis event including a LOCA.	-
RCOL2_09.02.01-4	9.2.1.5.4	9.2-4	Responses to RAI No. 109 Luminant Letter no. TXNB-09071 Dated 11/20/2009	Deleted CP COL 9.2(7)	-
RCOL2_09.02.01-1	9.2.5.3	9.2-11	Responses to RAI No. 109 Luminant Letter no. TXNB-09071 Dated 11/20/2009	Provided clarification of the volume for a cooling tower basin.	-
RCOL2_09.02.02-4	9.2.10	9.2-13	Responses to RAI No. 109 Luminant Letter no. TXNB-09071 Dated 11/20/2009	Revised CP Col 9.2(6) to add “and the mode of cooling the pump motor.” Added reference to Subsection 9.4.5.1.1.6.	-
RCOL2_09.02.02-4	9.2.10	9.2-14	Responses to RAI No. 109 Luminant Letter no. TXNB-09071 Dated 11/20/2009	Deleted reference to Subsection 9.2.1.5.4 In CP COL 9.2(7).	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_09.02.02-4	9.4.5.1.1.6	9.4-2	Responses to RAI No. 109 Luminant Letter no. TXNB-09071 Dated 11/20/2009	Added statement that the ESWP is installed at a location in the pump house where air is adequately circulated to cool the motor.	-
RCOL2_09.02.05-01	9.2.5.1	9.2-8	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Replaced the last bullet of Subsection 9.2.5.1 with a bullet to explain that the UHS components and structures are designed to seismic cat. I and equipment class 3. Also see Change ID RCOL2_09.02.05-04.	-
RCOL2_09.02.05-01	9.2.5.2.1	9.2-8	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added description to the second paragraph that the cooling tower components are designed per equipment class 3 and quality group C requirements.	-
RCOL2_09.02.05-01	9.2.5.2.1	9.2-9	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added seventh paragraph to describe the ESW intake basin.	-
RCOL2_09.02.05-02	9.2.5.3	9.2-14	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added third paragraph to explain that the UHS seismic Cat. I SSC's and Non-seismic SSC's are separated and that failure of the non-seismic SSC's will not affect the seismic Cat. I SSC's.	-
RCOL2_09.02.05-04	9.2.5.1	9.2-8	Responses to RAI No. 121 Luminant Letter no. TXNB-09081	Replaced the last bullet of Subsection 9.2.5.1 with a bullet to explain that the UHS components and	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			Dated 12/16/2009	structures are designed to seismic cat. I and equipment class 3. Also see Change ID RCOL2_09.02.05-01.	
RCOL2_09.02.05-04	9.2.5.2.1	9.2-9	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added ninth paragraph to provide description on the normal maintained water level of the UHS basin.	-
RCOL2_09.02.05-04	9.2.5.2.2	9.2-11	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added eighth paragraph to provide description that all transfer pumps discharge into a common header. This change worked in conjunction with Change ID RCOL2_09.02.05-06.	-
RCOL2_09.02.05-04	9.2.5.2.2	9.2-11	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added description to the end of the tenth paragraph regarding the power supply for the transfer pumps.	-
RCOL2_09.02.05-04	Figure 9.2.5-201 (sheets 1 and 2)	9.2-24 9.2-25	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added notes to Figure 9.2.5-201, Sheets 1 and 2.	-
RCOL2_09.02.05-05	9.2.5.2.1	9.2-8	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added fourth and fifth paragraphs to provide description for the cooling towers design conditions	-
RCOL2_09.02.05-05	9.2.5.2.3	9.2-12	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised the last sentence of third paragraph to say recirculation penalty instead of margin.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_09.02.05-05	9.2.5.2.3	9.2-12	Response to RAI Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the fourth paragraph to provide description that the 83 degrees F wet bulb temperature from Table 2.0-1R corresponds with the 0% exceedance value and is used to establish the cooling tower basin water temperature surveillance requirements.	-
RCOL2_09.02.05-05	9.2.5.2.3	9.2-13	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised the sixth paragraph to add "…using industry standard methodology…"	-
RCOL2_09.02.05-05	9.2.5.2.3	9.2-13	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised the eighth and ninth paragraphs to provide clarification on the operational peak heat loads during shutdown with LOOP is used for cooling tower design.	-
RCOL2_09.02.05-05	9.2.5.3	9.2-14	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised sixth paragraph to provide clarification on the 30 day cooling water capacity as 8.40 million gallons or approx. 2.80 million gallons for each basin.	-
RCOL2_09.02.05-05	9.2.5.3	9.2-14 9.2-15	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the seventh paragraph to provide description on UHS basin water temperature.	-
RCOL2_09.02.05-05	Table 9.2.5-201	9.2-23	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the following to Table 9.2.5-201 for UHS system design data: Design air flow, fan speed, cooling tower design life and design approach. Also added a	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				note at the bottom of the table.	
RCOL2_09.02.05-06	9.2.5.2.2	9.2-11	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added seventh paragraph to provide clarification that there are four 100% capacity UHS transfer pumps.	-
RCOL2_09.02.05-06	9.2.5.2.2	9.2-11	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added eighth paragraph to provide description that all transfer pumps discharge into a common header. This change worked in conjunction with Change ID RCOL2_09.02.05-04	-
RCOL2_09.02.05-07	9.2.5.2.2	9.2-11	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added ninth paragraph to provide description for the UHS transfer pump design features such as TDH and NPSH.	-
RCOL2_09.02.05-09	9.2.5.2.2	9.2-10	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added fourth, fifth and sixth paragraphs to provide description of how the ESWS and the UHS together minimize the effects of water hammer.	-
RCOL2_09.02.05-10	9.2.5.2.1	9.2-9	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the twelfth paragraph in conjunction with Change ID RCOL2_09.02.05-11 to provide description of the intake structure design minimizes debris, algae and grass into the makeup water.	-
RCOL2_09.02.05-11	9.2.5.2.1	9.2-9	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the twelfth paragraph in conjunction with Change ID RCOL2_09.02.05-11 to provide description of the intake structure design minimizes debris,	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				algae and grass into the makeup water.	
RCOL2_09.02.05-12	9.2.5.2.1	9.2-9	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the tenth paragraph to provide description for the chemical injection system for the UHS and ESWS.	-
RCOL2_09.02.05-12	9.2.5.4	9.2-15 9.2-16	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised the third paragraph to clarify industry operating experience was used for periodic inspections and testing of cooling tower components. Also, added the fourth through the eleventh paragraphs in conjunction with Change ID's RCOL2_09.02.05-13 and 14 to provide description of inspection and testing requirements.	-
RCOL2_09.02.05-13	9.2.5.4	9.2-15 9.2-16	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the fourth through the eleventh paragraphs in conjunction with Change ID's RCOL2_09.02.05-12 and 14 to provide description of inspection and testing requirements.	-
RCOL2_09.02.05-14	9.2.5.4	9.2-15	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the fourth paragraph to provide description of inspection and testing requirements in accordance with Tech. Specs..	-
RCOL2_09.02.05-16	9.2.5.1	9.2-7	Responses to RAI No. 121 Luminant Letter no. TXNB-09081	Revised the bullet to add description that the performance of the UHS is based on 30 years of site specific wet bulb	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			Dated 12/16/2009	temperature conditions.	
RCOL2_09.02.05-16	9.2.5.2	9.2-8	Responses to RAI No. 121 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added to the end of the third paragraph a reference to Subsection 10.4.5.2.2.2.11.	-
RCOL2_09.04.05-03	9.4.5.2.6	9.4-5	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added sixth paragraph to clarify that the UHS ESW pump house ventilation contains no ductwork.	-
RCOL2_09.04.05-03	9.4.5.2.6	9.4-6	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added twelfth paragraph to provide description that the failure of non-safety-related components in the UHS ESW pump house will not damage any of the safety-related components in the pump house.	-
RCOL2_09.04.05-03	Figure 9.4-201	9.4-17	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added four notes to Figure 9.4-201.	-
RCOL2_09.04.05-04	9.4.5.3.6	9.4-6	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added a new bullet to provide clarification that the ESW pump house air intakes and air outlets are protected from tornado missiles.	-
RCOL2_09.04.05-07	9.4.5.1.1.6	9.4-2	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised the first paragraph by providing clarification on the ventilation system temperature range.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_09.04.05-07	9.4.5.2.6	9.4-4	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised the first sentence of the ninth paragraph to clarify that the unit heaters maintain room temperatures during normal and emergency plant operations.	-
RCOL2_09.04.05-08	9.4.5.2.6	9.4-4 9.4-5 9.4-6	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised Subsection 9.4.5.2.6 in conjunction with Change ID's RCOL2_09.04.05-07, 09, 10 and 12.	-
RCOL2_09.04.05-09	9.4.5.2.6	9.4-5	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised seventh paragraph of Subsection 9.4.5.2.6 in conjunction with Change ID's RCOL2_09.04.05-12	-
RCOL2_09.04.05-10	9.4.5.2.6	9.4-5	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added the tenth paragraph regarding backdraft dampers.	-
RCOL2_09.04.05-10	9,4,5,3,6	9.4-6	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised last sentence of the third bullet item to read "All ventilation system components…"	-
RCOL2_09.04.05-10	9.4.5.5.6	9.4-7	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added a new bullet item identifying temporary switches.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_09.04.05-10	Table 9.4-203 (sheets 1 thru 5)	9.4-12 Thru 9.4-16	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Added Table 9.4-203 (Sheets 1 thru 5)	-
RCOL2_09.04.05-12	9.4.5.2.6	9.4-5	Responses to RAI No. 123 Luminant Letter no. TXNB-09081 Dated 12/16/2009	Revised seventh paragraph of Subsection 9.4.5.2.6 in conjunction with Change ID's RCOL2_09.04.05-09.	-
DCD_09.04.05-1	9.4.5.3.6 Table 9.4-203 (Sheet 1, 2 of 5)	9.4-4	Consistency with DCD	Change the sentence about the effect analysis of single active failure. And newly add Table 9.4-203 as FMEA.	0
MAP-00-201	Table 9.2.5-202 Figure 9.2.1-1R Figure 9.2.5-201 Figure 9.4-201	9.2-19 through 9.2-22 9.2-24 9.2-25 9.4-10	The change of numbering rule of Tag number	Change Tag numbers.	0
RCOL2_09.02.04-02	9.2.4.1	9.2-4	Response to RAI No. 126 Luminant Letter no. TXNB-10008 Date 2/18/2010	Deleted first bullet.	-
RCOL2_09.02.04-02	9.2.4.2	9.2-5	Response to RAI No. 126 Luminant Letter no. TXNB-10008 Date 2/18/2010	Added Subsection 9.2.4.2. CP COL 9.2(11)	-
RCOL2_09.02.04-02	9.2.4.2.1	9.2-5	Response to RAI No. 126 Luminant Letter no. TXNB-10008 Date 2/18/2010	Revised second paragraph to clarify that the PSWS does not share between any radiological controlled systems.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_09.02.04-03	9.2.4.2.2.4	9.2-6	Response to RAI No. 126 Luminant Letter no. TXNB-10008 Date 2/18/2010	Added Subsection 9.2.4.2.2.4. CP COL 9.2(13)	-
RCOL2_09.05.01-8 S01	9.5.1.6.4.2.4	9.5-14 9.5-15 9.5-16	Response to RAI No. 10 Supplemental Luminant Letter no. TXNB-10007 Date 2/19/2010	Revised Subsection to add more detail regarding combustibles control program.	-
RCOL2_09.02.01-5 S01	Figure 9.2.1-1R	9.2-26	Response to RAI No. 109 Supplemental Luminant Letter No. TXNB-10011 Date 2/22/10	Revised figure to reference Figure 9.5.1-201.	-
RCOL2_09.02.01-5 S01	Figure 9.5.1-201 (Sheet 1 of 2)	9.5-148	Response to RAI No. 109 Supplemental Luminant Letter No. TXNB-10011 Date 2/22/10	Added “Sheet 1 of 2” to Figure 9.5.1-201.	-
RCOL2_09.02.01-5 S01	Figure 9.5.1-201 (Sheet 2 of 2)	9.5-149	Response to RAI No. 109 Supplemental Luminant Letter No. TXNB-10011 Date 2/22/10	Added second sheet to Figure 9.5.1-201.	-
RAI GEN-09	Figure 9.2.4-2R (Sheet 2 of 2)	9.2-29	Response to RAI GEN-09 Luminant Letter No. TXNB-10013 Date 2/24/2010	Added new figure to FSAR Ch 9 to supplement Figure 9.2.4-1R, this figure was not added correctly and the name will be changed to 9.2.4-201 in the next UTR, in addition Luminant requests that the title be changed to “Sanitary Water System Flow Diagram” and “sheet 2 of	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				2" will be removed	
RAI GEN-09	Figure 9.2.4-1R (Sheet 1 of2)	9.2-28	Response to RAI GEN-09 Luminant Letter No. TXNB-10013 Date 2/24/2010	Added (sheet 1 of 2) to account for above new figure The title of this figure will be modified in the next UTR to comply with the DCD New title: "Potable and Sanitary Water System Flow Diagram" to reflect the DCD In additon "Sheet 1 of 2" will be removed.	-
CTS-01109	Figure 9.2.4-1R	9.2-28	Errata	Corrected figure title.	2
CTS-01109	Figure 9.2.4-201	9.2-29	Errata	Corrected figure number and title.	2

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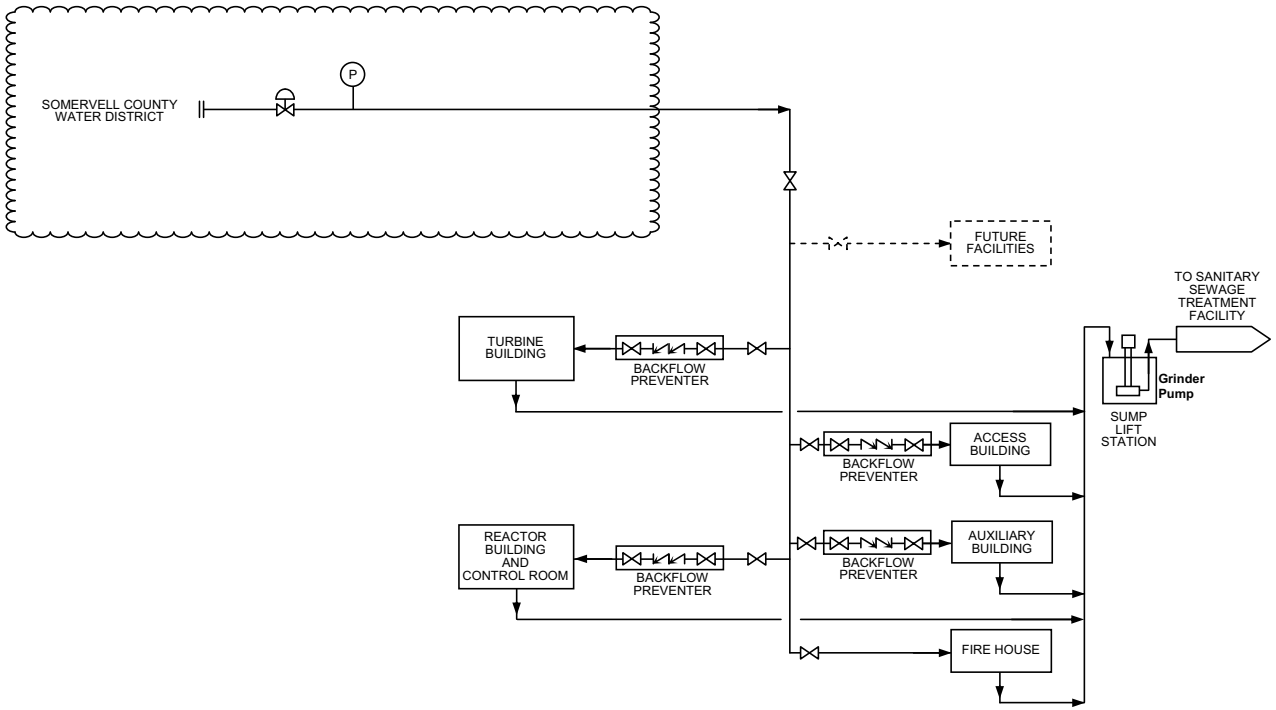
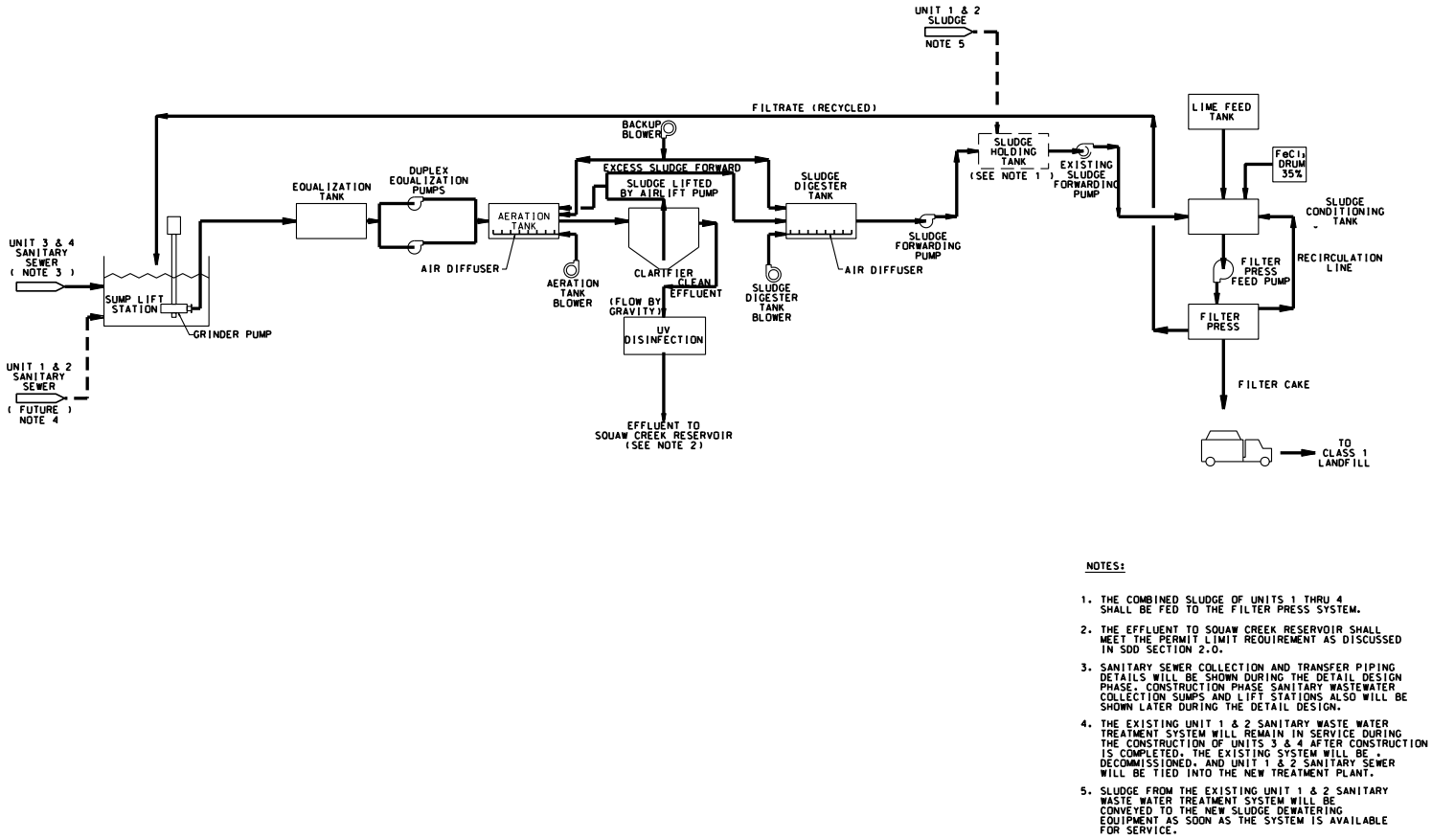


CP COL 9.2(11)

Figure 9.2.4-1R Potable ~~and Sanitary~~ Water ~~System~~ Flow Diagram

RAI GEN-09
CTS-01109

RAI GEN-09



NOTES:

1. THE COMBINED SLUDGE OF UNITS 1 THRU 4 SHALL BE FED TO THE FILTER PRESS SYSTEM.
2. THE EFFLUENT TO SQUAW CREEK RESERVOIR SHALL MEET THE PERMIT LIMIT REQUIREMENT AS DISCUSSED IN SDD SECTION 2.0.
3. SANITARY SEWER COLLECTION AND TRANSFER PIPING DETAILS WILL BE SHOWN DURING THE DETAIL DESIGN PHASE. CONSTRUCTION PHASE SANITARY WASTEWATER COLLECTION SUMPS AND LIFT STATIONS ALSO WILL BE SHOWN LATER DURING THE DETAIL DESIGN.
4. THE EXISTING UNIT 1 & 2 SANITARY WASTE WATER TREATMENT SYSTEM WILL REMAIN IN SERVICE DURING THE CONSTRUCTION OF UNITS 3 & 4 AFTER CONSTRUCTION IS COMPLETED. THE EXISTING SYSTEM WILL BE DECOMMISSIONED, AND UNIT 1 & 2 SANITARY SEWER WILL BE TIED INTO THE NEW TREATMENT PLANT.
5. SLUDGE FROM THE EXISTING UNIT 1 & 2 SANITARY WASTE WATER TREATMENT SYSTEM WILL BE CONVEYED TO THE NEW SLUDGE DEWATERING EQUIPMENT AS SOON AS THE SYSTEM IS AVAILABLE FOR SERVICE.

CP COL 9.2(11)

Figure 9.2.4-201 Sanitary Water System Flow Diagram

CTS-01109

Chapter 10

Chapter 10 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_11.05-2	10.4.8.2.1	10.4-7	Response to RAI No. 50 Luminant Letter no.TXNB-09055 Date 10/19/2009	Revised the sentence about the location and other technical details of the SGBDS radiation monitor as bellow; The location and other technical details of the monitor (RMS-RE-110) is described in Subsection 11.5.2.5.3 and Table 11.5-201.	-
MAP-10-201	10.4.5.2.1	10.4-1	Editorial	Revise from “jockey pumps” to “priming pumps”.	0
CTS-01119	10.3.6.3.1.6	10.3-4	Remove site specific language from Standard COL Item.	Deleted “CPNPP Units 3 and 4” from the second sentence.	2

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10.3.6.3.1.6 Long-Term Strategy

The long-term strategy is to improve the inspection program and to reduce susceptibility of piping components to FAC. An effective long-term monitoring program description is included in the ~~CPNPP Units 3 and 4~~ FAC Monitoring Program. CTS-01119

10.3.6.3.1.7 Plant Chemistry

The responsibility for system chemistry is under the purview of the plant chemistry section. The plant chemistry section specifies chemical addition in accordance with plant procedures.

10.3.7 Combined License Information

Replace the content of the DCD Subsection 10.3.7 with the following.

STD COL 10.3(1) ***10.3(1)*** *FAC monitoring program*
This COL item is addressed in Subsection 10.3.6.3

10.3(2) *Deleted from the DCD.*

STD COL 10.3(3) ***10.3(3)*** *Operating and maintenance procedures for water (steam) hammer prevention*

This COL item is addressed in Subsection 10.3.2.4.3.

Chapter 11

Chapter 11 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_11.03-1	Figure 11.3-201 (Sheet 3 of 3)	11.3-14	Response to RAI No. 35 Luminant Letter no.TXNB-09054 Date 10/15/2009	Added a note about equipment class.	-
RCOL2_11.04-1	11.4.4.5	11.4-4	Response to RAI No. 38 Luminant Letter no.TXNB-09055 Date 10/19/2009	Added following sentences in Subsection 11.4.4.5. "Applicable regulatory requirements and guidance, such as Regulatory Guide 1.143, are addressed by lease or purchase agreements associated with the use of a mobile dewatering subsystem for spent resin dewatering. The lease or purchase agreements include applicable criteria such as testing, inspection, interfacing requirements, operating procedures, and vendor oversight."	-
RCOL2_11.02-6	11.2.1.6	11.2-1	Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	Added descriptions about design features and approaches for the prevention of spread of contamination of the facility.	-
RCOL2_11.02-8	11.2.2	11.2-2	Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	Added descriptions that the evaporation pond is not part of the LWMS.	-
RCOL2_11.02-8	11.2.3.1	11.2-4	Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	Added a following description. "Rainfall is the primary contributing source for dilution of the pond. "	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00902	11.2.3.1	11.2-4	Editorial Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	Changed from “The pond design includes a discharge line and transfer pump to keep…” to “The pond design includes a transfer pump and discharge line to keep…”.	-
RCOL2_11.02-8	11.2.3.4	11.2-6	Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	Added a following description; “Texas Administrative Code (TAC), Title 30 on Environmental Quality, Part 1 Texas Commission on Environmental Quality (TCEQ), Chapter 321, Rule 321.255 on Requirements for Containment of Wastes and pond(s). “	-
RCOL2_11.02-8	11.2.3.4	11.2-7	Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	Added following descriptions as the other applicable guidance and standards; Industry standards such as ANSI / HI -2005 “Pump standard” will be used in designing the pumps Geosynthetic Research Institute Standard GM13 will be utilized for HDPE	-
RCOL2_11.02-8	11.2.3.4	11.2-8	Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	Changed the volume of evaporation pond from “1.4 million gallon” to “2.1 million gallon”. Changed the surface area of evaporation pond from “1 acre” to “1.5 acre”.	-
RCOL2_11.02-8	11.2.3.4	11.2-8	Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	Added descriptions about programs and procedures associated with the pond.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_11.02-9	Table 11.2-14R (Sheet 1 of 2)	11.2-18	Response to RAI No. 49 Luminant Letter no.TXNB-09055 Date 10/19/2009	"Goats" was added as the Animals considered for milk pathway.	-
RCOL2_11.05-2	11.5.2.5.3 11.5.2.5.4	11.5-1	Response to RAI No. 50 Luminant Letter no.TXNB-09055 Date 10/19/2009	Newly added Subsection 11.5.2.5.3 and 11.5.2.5.4	-
RCOL2_11.05-2	11.5.5	11.5-3	Response to RAI No. 50 Luminant Letter no.TXNB-09055 Date 10/19/2009	Combined License Information about CP COL 11.5 (1) was revised from "This COL item is addressed in Subsection 11.5.2.9." to "This COL item is addressed in Subsections 11.5.2.5.3, 11.5.2.5.4 and 11.5.2.9."	-
RCOL2_ 11.05-2	Table 11.5-201	11.5-3	Response to RAI No. 50 Luminant Letter no.TXNB-09055 Date 10/19/2009	Newly added Table 11.5-201.	-
RCOL2_ 11.05-2	Figure 11.5-201	11.5-3	Response to RAI No. 50 Luminant Letter no.TXNB-09055 Date 10/19/2009	Newly added Figure11.5-201.	-
RCOL2_12.03-12.04-4	11.4.2.3	11.4-3	Response to RAI No.119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add "10 CFR 20.1801, 10 CFR 50 Appendix A, GDC 61 and 63" after "10CFR 20" in the eighth paragraph of Section 11.4.2.3.	-
MAP-11-201	11.2.3.1	11.2-3	Consistency with DCD rev.2	Add a sentence to be consistent with DCD Rev.2	0
MAP-11-201	11.2.3.2	11.2-6	Consistency with DCD rev.2	Add a sentence to be consistent with DCD Rev.2	0
MAP-11-201	11.4.2.3	11.4-2	Consistency with DCD rev.2	Add a sentence to be consistent with DCD Rev.2	0
MAP-11-201	11.5.2.6	11.5-1	Consistency with DCD rev.2	Add a sentence to be consistent with DCD Rev.2	0

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
MAP-11-201	11.5.2.9	11.5-2	Consistency with DCD rev.2	Add a sentence to be consistent with DCD Rev.2	0
MAP-00-201	Figure 11.2-201 (Sheet 9 of 10)	11.2-29	The change of numbering rule of Tag number	Change Tag numbers of waste monitor tank and pump.	0
CTS-01105	11.2.3.1 Table 11.2-15R	11.2-5 [11.2-6] 11.2-20 [11.2-22]	Access change to SCR	Revised individual dose calculations.	1
CTS-01105	Table 11.2-14R (Sheet 1 of 2)	11.2-18 [11.2-19]	Access change to SCR	Revised input parameters for the LADTAP II code.	1

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Chapter 12

Chapter 12 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_12.02-1	12.2.1.1.10	12.2-1	Response to RAI No.85. Luminant Letter No.TXNB-09062 Date 11/5/2009	COL 12.2(1) was revised to assure that the site will be able to track the source type, quantity, form, location, and use such that the facility design will accommodate the activity and types of sources procured and temporarily utilized on site during the construction and operational phase.	-
RCOL2_12.02-2	12.2.1.1.10	12.2-1	Response to RAI No.89. Luminant Letter No.TXNB-09062 Date 11/5/2009	COL 12.2(1) was revised to describe the evaporation pond as a miscellaneous source.	-
RCOL2_12.02-2	Table12.2-201 (Sheet 1 of 2) (Sheet 2 of 2)	12.2-4	Response to RAI No.89. Luminant Letter No.TXNB-09062 Date 11/5/2009	Table 12.2-201 was added to present the estimated fission and corrosion product activity in the evaporation pond water.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_12.05-3	12.1.1.3.1 12.1.1.3.2 12.1.1.3.3 12.1.3 12.5	12.1-1 12.1-2 12.5-1	Response to RAI No.117. Luminant Letter No.TXNB-09068 Date 11/16/2009	Delete “in combination with existing or modified CPNPP Units 1 and 2 site program information” after “NEI 07-08 (Reference 12.1-2)” in Section 12.1.1.3.1, 12.1.1.3.2 and 12.1.1.3.2, after “NEI 07-03A (Reference 12.1-25)” in the second paragraph of Section 12.1.3 and after “NEI 07-08, Generic FSAR Template Guidance for Ensuring that Occupational Radiation Exposures are as Low as is Reasonably Achievable (ALARA), Revision 3” in the third paragraph of Section 12.5.	-
RCOL2_12.03-12.04-2	12.2.1.1.10	12.2-1	Response to RAI No.119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Change “Title 10, Code of Federal Regulations (CFR) Part 20” to “10 CFR 20, 10 CFR 50, Appendix A, GDC 61 and 63” in the second paragraph of Section 12.2.1.1.10. Add “and Generic Letter 81.38. The Interim Radwaste Storage Building design criteria is described in Subsection 11.4.2.3.” at the end of the second paragraph of Section 12.2.1.1.10.	-
RCOL2_12.03-12.04-6	12.4.1.9	12.4-1	Response to RAI No.119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add following sentences at the end of the second paragraph of Section 12.4.1.9; “Once CPNPP Unit 3 completes 5% power	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				ascension testing and proceeds to commercial operation, the remaining construction workers doses will be maintained ALARA in accordance with 10 CFR 20.1301 as described in Section 12.5, Operational Radiation Protection Program. Subsection 13.4 provides an implementation milestones for the Operational Radiation Protection Program that meets the regulations provided in 10 CFR Parts 20.1101 (a) and (b), 1301 and 1302. Once CPNPP Units 3 and 4 become operational, the estimated dose for remaining construction workers will be maintained ALARA at less than 2 mrem/hr."	
RCOL2_12.05-3	12.5	12.5-1	Response to RAI No.117. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add following paragraphs after the fourth paragraph of Section 12.5; "Add the following information after the first paragraph in Subsection 12.5.3.2 of NEI 07-03A. The selection and calibration of this instrumentation and equipment is based on relevant industry standards such as ANSI N42.17A-1989, as it relates to the accuracy and overall performance of portable survey instrumentation, and	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				ANSI N323A-1997, as it relates to the calibration and maintenance of portable radiation survey instruments."	
RCOL2_12.03-12.04-8	12.4.1.9.2.1	12.4-2	Response to RAI No.119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add following paragraph after the fourth paragraph of Section 12.4.1.9.2.1; "The CPNPP site will be continually monitored during the construction period and appropriate actions will be taken as necessary to ensure that the construction workers are protected from radiation exposure. Use of radioactive materials and sources during construction, such as sources used in radiography, will be controlled and monitored to maintain construction worker doses ALARA."	-
RCOL2_12.03-12.04-6	12.4.1.9.4.3	12.4-5	Response to RAI No.119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add following paragraph after the first paragraph of Section 12.4.9.4.3; "The location for the Units 3 and 4 liquid waste management system (LWMS) connection to the Units 1 and 2 is an open pit near the existing Units 1 and 2 waste treatment ponds (Northeast corner of Units 1 and 2 radioactive waste treatment facility). The CPNPP Units 3 and 4 effluent tap will be made into CPNPP Units 1 and 2 at the pipe inside the	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				Unit 1 Turbine Building. In accordance with the Radiation Protection Program established (see FSAR Subsection 13.4 and Table 13.4-201), the construction worker dose for this connection tie-in will be ALARA and meet the limits established in 10 CFR 20.1301. Pre-staging of the connection, health physics surveys and other effective techniques will be utilized to ensure that worker doses are ALARA in accordance with an approved Radiation Work Permit."	
RCOL2_12.03-12.04-3	12.5	12.5-1	Response to RAI No.119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add following paragraphs after the fourth paragraph of Section 12.5; "Add the following information after the first paragraph in Subsection 12.5.3.2 of NEI 07-03A. The selection and calibration of this instrumentation and equipment is based on relevant industry standards such as ANSI N42.17A-1989, as it relates to the accuracy and overall performance of portable survey instrumentation, and ANSI N323A-1997, as it relates to the calibration and maintenance of portable radiation survey instruments."	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_12.05-4	12.5	12.5-1	Response to RAI No.117. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add following paragraphs after the sixth paragraph of Section 12.5; "Add the following information prior to the last paragraph in Subsection 12.5.4.1 of NEI 07-03A. Calibration of portable and non-portable radiation protection equipment is normally performed onsite by station personnel, although, calibration by a qualified vendor is allowed. Calibration is performed using written procedures and radioactive sources traceable to the National Institute of Standards (NIST) or using transfer instruments, such as electrometers, which have been calibrated using NIST traceable sources."	-
RCOL2_12.03-12.04-2	12.5	12.5-1	Response to RAI No.119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Change the tenth paragraph of Section 12.5 to read as follows; "The locations and radiological controls of the radiation zones on plant layout drawings are located in DCD Subsection 12.3.1.2. Administrative controls for restricting access to Very High Radiation Areas are incorporated into plant procedures which require approval by the Plant Manager (or designee) for each entry. Entry will be controlled through the Radiation Work Permit	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				(RWP) process. Physical access controls for Very High Radiation Areas are provided by physical barriers such as lockable gates or doors which prevent unauthorized access. It's not necessary to enter these areas periodically. DCD Subsection 12.3.1.2 includes detailed drawings of the very high radiation areas and indicates the physical access controls. Table 12.5-201 summarizes the plant areas with the potential to become very high radiation areas. Radiation monitor locations for each area are indicated in DCD Subsection 12.3.4."	
RCOL2_12.03-12.04-1 RCOL2_12.01-4 RCOL2_12.03-12.04-7	12.5	12.5-2	Response to RAI No.99. Luminant Letter No.TXNB-09064 Date 11/11/2009 Response to RAI No.118 and 119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add following paragraphs after the twelfth paragraph of Section 12.5; "Add the following information at the end of Subsection 12.5.4.8 of NEI 07-03A. In addition, NEI Template 08-08 Revision 3, "Generic FSAR Template Guidance for Life-Cycle Minimization of Contamination" is fully adopted. And also, the guidance provided in NEI 08-08 will be used at CPNPP Units 3 and 4 to minimize contamination during construction, operation and decommissioning. This will include the use of photographs and video	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				records during construction to facilitate updating the conceptual site model for groundwater movement and aid in revising the groundwater monitoring plan post-construction. Final layout drawings, photographs, global positioning survey information and video records will be used in assessing the proper location for groundwater monitoring wells, foundations, pipes, conduits and other below grade structures."	
RCOL2_12.03-12.04-2	12.5	12.5-2	Response to RAI No.119. Luminant Letter No.TXNB-09068 Date 11/16/2009	Add Table 12.5-201 "Summary of Comanche Peak Units 3 and 4 Very High Radiation Areas (VHRAs)"	-
RCOL2_14.02.01-1	12.5	12.5-1	Response to RAI No.129 Luminant Letter No.TXNB-10010 Date 2/22/2010	Changed describes the relevant industry standards, ANSI N42.17A-1989 and ANSI N323A-1997, as the bases for selection and calibration of instrumentation and equipment and calibration and maintenance of portable radiation survey instruments.	-
RCOL2_14.02.01-1	Table 12.5-202	12.5-5	Response to RAI No.129 Luminant Letter No.TXNB-10010 Date 2/22/2010	Added new Table 12.5-202 to identify the consensus standards used to define the calibration methods for personnel monitors,	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				radiation survey instruments, and laboratory equipment.	
RCOL2_12.03-12.04-9	12.2.1.1.10	12.2-1	Response to RAI No. 133 Luminant letter No. TXNB-10012 Date 2/24/2010	Added reference to Regulatory Issue Summary (RIS) 2007-03.	-
RCOL2_12.03-12.04-10	12.4.1.9.2.1	12.4-1	Response to RAI No. 133 Luminant letter No. TXNB-10012 Date 2/24/2010	Added applicability of the CPNPP Unit 1 and 2 Radiation Protection Program to the construction workers in the fourth paragraph.	-
RCOL2_12.05-6	12.5	12.5-1	Response to RAI No. 136 Luminant letter No. TXNB-10020 Date 3/9/2010	Added a new paragraph after the third paragraph of Section 12.5, titled "Source Term Reduction Strategy".	-
RCOL2_12.05-5	12.5.4.2	12.5-2	Response to RAI No. 136 Luminant letter No. TXNB-10020 Date 3/9/2010	Added a new paragraph after the fifth paragraph of Section 12.5, describing compliance of respiratory protection procedure.	-
CTS-01106	12.1.1.3.1 12.1.1.3.2 12.1.1.3.3 12.5	12.1-1 12.5-1	Update due to issuance of NEI 07-08A Rev0	NEI 07-08 Rev.3 was updated to NEI 07-08A Rev.0.	2
CTS-01128	12.4.1.9.4	12.4-4 [12.4-5]	Technical correction	Changed "A peak loading of 4300 construction workers per year" to "A peak loading of 4300 construction workers"	2
CTS-01107	12.5	12.5-3	Update due to issuance of NEI 08-08A Rev0	NEI 08-08 Rev.3 was updated to NEI 08-08A Rev.0.	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

12.0 RADIATION PROTECTION

12.1 ENSURING THAT OCCUPATIONAL RADIATION EXPOSURES ARE AS LOW AS REASONABLY ACHIEVABLE

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

12.1.1.3.1 Compliance with Regulatory Guide 1.8

CP COL 12.1(1) Replace the paragraph in DCD Subsection 12.1.1.3.1 with the following.

The administrative programs and procedures demonstrate compliance with Regulatory Guide (RG) 1.8, including the operation policies activities conducted by management personnel who have plant operational responsibility for radiation protection, by utilizing NEI 07-08A ~~(Reference 12.1-2), in combination with existing or modified Comanche Peak Nuclear Power Plant (CPNPP) Units 1 and 2 site program information~~. These are addressed in the operational radiation protection program, described in Section 12.5.

CTS-01106
RCOL2_12.05-3

12.1.1.3.2 Compliance with Regulatory Guide 8.8

CP COL 12.1(1) Replace the second paragraph in DCD Subsection 12.1.1.3.2 with the following.

The administrative programs and procedures demonstrate compliance with RG 8.8, including the operation policies activities conducted by management personnel who have plant operational responsibility for radiation protection, by utilizing of NEI 07-08A ~~(Reference 12.1-2), in combination with existing or modified CPNPP Units 1 and 2 site program information~~. These are addressed in the operational radiation protection program, described in Section 12.5.

CTS-01106
RCOL2_12.05-3

12.1.1.3.3 Compliance with Regulatory Guide 8.10

CP COL 12.1(1) Replace the paragraph in DCD Subsection 12.1.1.3.3 with the following.

The administrative programs and procedures demonstrate compliance with RG 8.10, including the operation policies activities conducted by management personnel who have plant operational responsibility for radiation protection, by utilizing of NEI 07-08A ~~(Reference 12.1-2), in combination with existing or modified CPNPP Units 1 and 2 site program information~~. These are addressed in the operational radiation protection program, described in Section 12.5.

CTS-01106
RCOL2_12.05-3

- The estimated maximum dose rate for each pathway
- An exposure time of 2500 hr/yr (50 hr/week * 50 week/yr)
- A peak loading of 4300 construction workers ~~per year~~ CTS-01128

The estimated maximum annual dose for each pathway as well as the total dose is discussed below.

12.4.1.9.4.1 Direct Radiation

Using the protected area fence cumulative dose rate of 0.001 mrem/hr from Subsection 12.4.1.9.3.1, the annual dose due to direct radiation at the CPNPP Units 1 and 2 protected area fence would be 2.5 mrem based on an exposure of 2500 hr/yr. This is the dose at the CPNPP Units 1 and 2 protected area fence. Doses to the CPNPP Units 3 and 4 construction workers would be reduced due to the distance to the construction area.

12.4.1.9.4.2 Gaseous Effluents

The annual gaseous effluent doses to the maximally exposed member of the public are based on continuous occupancy. Adjusted for an exposure time of 2500 hr/yr, the estimated individual worker doses due to gaseous effluent releases from CPNPP Units 1 and 2 are 4.05E-03 mrem for the total body and 4.20E-03 mrem for the critical organ. Applying a weighting factor of 0.03 to the critical organ dose, as discussed in RG 1.183, page 1.183-9, and adding to the total body dose, a total effective dose equivalent (TEDE) of 4.18E-03 mrem is estimated.

12.4.1.9.4.3 Liquid Effluents

The annual liquid effluent doses to the maximally exposed member of the public are based on continuous occupancy and are adjusted for an exposure time of 2500 hr/yr. Although the liquid effluent dose rates to which the workers would be exposed are not expected to be as high as the dose to the maximally exposed member of the public, the doses calculated for the public are used. The resulting doses are 2.9E-02 mrem for the whole body and 2.9E-02 mrem for the critical organ. Applying a weighting factor of 0.03 to the organ dose and adding to the whole body dose, a TEDE of 3.0E-02 mrem is estimated.

The location for the Units 3 and 4 liquid waste management system (LWMS) connection to the Units 1 and 2 is an open pit near the existing Units 1 and 2 waste treatment ponds (Northeast corner of Units 1 and 2 radioactive waste treatment facility). The CPNPP Units 3 and 4 effluent tap will be made into CPNPP Units 1 and 2 at the pipe inside the Unit 1 Turbine Building. In accordance with the Radiation Protection Program established (see FSAR Subsection 13.4 and Table 13.4-201), the construction worker dose for this connection tie-in will be ALARA and meet the limits established in 10 CFR 20.1301. Pre-staging of the connection, health physics surveys and other effective techniques will be utilized to ensure RCOL2_12.03-12.04-6

12.5 OPERATIONAL RADIATION PROTECTION PROGRAM

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP COL 12.1(5) Replace the contents in DCD Section 12.5 with the following.

NEI 07-03A, Generic FSAR Template Guidance for Radiation Protection Program Description, Revision 0, is incorporated by reference. Site specific information in radiation protection program will be implemented in accordance with the milestones listed in Table 13.4-201, by utilizing of NEI 07-03A, and NEI 07-08A, Generic FSAR Template Guidance for Ensuring that Occupational Radiation Exposures are as Low as is Reasonably Achievable (ALARA), Revision ~~3~~0~~, in combination with existing or modified CPNPP Units 1 and 2 site program Information~~. CTS-01106 CTS-01106 RCOL2_12.05-3

Revise the contents of NEI 07-03A, with the following.

Add the following information after the first paragraph in Subsection 12.5.3.2 of NEI 07-03A. RCOL2_12.03-12.04-3

The selection and calibration of this instrumentation and equipment is based on relevant industry standards such as ANSI N42.17A-1989, as it relates to the accuracy and overall performance of portable survey instrumentation, and ANSI N323A-1997, as it relates to the calibration and maintenance of portable radiation survey instruments. Table 12.5-202 provides a list of personnel monitors, radiation survey instruments and laboratory equipment, with reference to consensus standards containing guidance for their calibration. Luminant will use the listed consensus standards in addition to vendor recommendations as part of the guidance for determining the method of calibration of the listed instrumentation. RCOL2_14.02.01-1

CP COL 12.2(2)
CP COL 12.3(1)
CP COL 12.3(5) Add the following information after the second paragraph in Subsection 12.5.3.3 of NEI 07-03A.

In case the National Institute for Occupational Safety and Health/Mine Safety and Health Administration certified equipments are not used, equipments are used to be compliance with 10 CFR 20.1703(b) and 20.1705.

Add the following information prior to the last paragraph in Subsection 12.5.4.1 of NEI 07-03A. RCOL2_12.05-4

Calibration of portable and non-portable radiation protection equipment is normally performed onsite by station personnel, although, calibration by a

procedures which require approval~~provided~~ by the Plant Manager~~'s~~ (or designee) ~~approval~~for each entry. Entry will be controlled through the Radiation Work Permit (RWP) process. Physical ~~A~~access controls for Very High Radiation Areas ~~is controlled~~are provided by physical barriers such as lockable~~the~~ gates or doors which prevent unauthorized access ~~and entry to these areas is allowed only through the issuance of a Radiation Work Permit~~. It's not necessary to enter these areas periodically. DCD Subsection 12.3.1.2 includes detailed drawings of the very high radiation areas and indicates the physical access controls. Table 12.5-201 summarizes the plant areas with the potential to become very high radiation areas. Radiation monitor locations for each area are indicated in DCD Subsection 12.3.4. RCOL2_12.03-12.04-2

Add the following information after the sixth paragraph in Subsection 12.5.4.4 of NEI 07-03A.

The gates provide access control of the fuel transfer tube inspection (Very High Radiation Area) and the area near the seismic gap below the transfer tube. Access control for these areas is controlled by the gates and entry to these areas is allowed only the issuance of a Radiation Work Permit.

Add the following information at the end of Subsection 12.5.4.8 of NEI 07-03A. RCOL2_12.03-12.04-1

In addition, NEI Template 08-08A Revision 0, "Generic FSAR Template Guidance for Life-Cycle Minimization of Contamination" is fully adopted. And also, the guidance provided in NEI 08-08A will be used at CPNPP Units 3 and 4 to minimize contamination during construction, operation and decommissioning. This will include the use of photographs and video records during construction to facilitate updating the conceptual site model for groundwater movement and aid in revising the groundwater monitoring plan post-construction. Final layout drawings, photographs, global positioning survey information and video records will be used in assessing the proper location for groundwater monitoring wells, foundations, pipes, conduits and other below grade structures. RCOL2_12.01-4 RCOL2_12.03-12.04-7 CTS-01107

Replace the first paragraph of Subsection 12.5.4.9 of NEI 07-03A with the following. RCOL2_12.05-5

Respiratory protection procedures assure compliance with 10 CFR Part 20, Subpart H, and are consistent with the guidance in Regulatory Guide 8.15 to assure protection against radiological hazards and the relevant portions of 29 CFR 1910.134 to assure protection against non-radiological hazards, such as fumes, dust, smoke, or oxygen deficiency.

Replace the first and second paragraph in Subsection 12.5.4.12 of NEI 07-03A with the following.

Chapter 13

Chapter 13 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL_13.05.02.01-1	13.5.2	13.5-3	Response to RAI No.37 Luminant Letter no.TXNB-09055 Date 10/19/2009	Change the subsection number to “DCD subsection 13.5.2”	-
RCOL_13.05.02.01-3, 4, 5, 6	13.5.2.1	13.5-4	Response to RAI No.37 Luminant Letter no.TXNB-09055 Date 10/19/2009	The descriptions have been revised to refer to plant-specific technical guidelines (P-STGs)	-
RCOL_13.05.02.01-6	13.5.2.1	13.5-4 13.5-5	Response to RAI No.37 Luminant Letter no.TXNB-09055 Date 10/19/2009	The descriptions regarding EOP V&V process have been added.	-
RCOL2_13.01.01-2	Appendix 13AA, Subsection 13AA.2	13AA-3	Response to RAI No. 68 Luminant Letter no.TXNB-09061 Date 11/5/2009	Deleted the reference to Appendix 14B which was incorrect.	-
RCOL2_13.01.01-3	13.1.3	13.1-12	Response to RAI No. 68 Luminant Letter no.TXNB-09061 Date 11/5/2009	Change indicates that RO and SRO candidates meet the requirements of ACAD 09-001 Section 6, “RO and SRO Candidate Education, Experience, and Training Requirements for Initial Startup and Operation of New Construction Plants (Cold Licensing)	-
RCOL2_13.01.01-3	13.2	13.2-1	Response to RAI No. 68 Luminant Letter no.TXNB-09061 Date 11/5/2009	Change describes the establishment of CPNPP partnerships in addition to the Industrial Technology Program.	-
RCOL2_13.01.01-3	13.2.1.1	13.2-1 13.2-2	Response to RAI No. 68 Luminant Letter	Change describes the Training Program accreditation time	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			no.TXNB-09061 Date 11/5/2009	frame using the guidance provided by ACAD 08-001.	
RCOL2_13.01.01-3	Figure 13.1-205	13.1-31	Response to RAI No. 68 Luminant Letter no.TXNB-09061 Date 11/5/2009	Change adds Figure to show relative timeline of hiring and training milestones for various types of personnel.	-
RCOL_13.01.02-13.01.03-2	13.1.1.1.1	13.1-2	Response to RAI No. 69 Luminant Letter no.TXNB-09061 Date 11/5/2009	Added responsibilities of Technical Supervisors.	-
RCOL_13.01.02-13.01.03-2	13.1.1.2.2	13.1-5	Response to RAI No. 69 Luminant Letter no.TXNB-09061 Date 11/5/2009	Added reporting line and duties of the System Engineering Supervisors.	-
RCOL_13.01.02-13.01.03-5	13.1.2.1	13.1-8	Response to RAI No. 69 Luminant Letter no.TXNB-09061 Date 11/5/2009	Added statement that Shift Operations Manager position requires meeting ANSI/ANS 3.1-1993 qualification requirements.	-
RCOL_13.01.02-13.01.03-2	13.1.2.2	13.1-10	Response to RAI No. 69 Luminant Letter no.TXNB-09061 Date 11/5/2009	Added reporting line and duties of the Maintenance Team Supervisors.	-
RCOL_13.01.02-13.01.03-2	13.1.2.3	13.1-11	Response to RAI No. 69 Luminant Letter no.TXNB-09061 Date 11/5/2009	Added reporting line and duties of the Radiation Protection Supervisors.	-
RCOL_13.01.02-13.01.03-2	Table 13.1-201 (Sheet 4 of 7)	13.1-18	Response to RAI No. 69 Luminant Letter no.TXNB-09061 Date 11/5/2009	Added the position of technical supervisor as System Engineering Supervisor to the table.	-
RCOL_13.04-2	Table 13.4-201 (Sheet 1 of	13.4-2	Response to RAI No. 71 Luminant Letter	Items 1 and 2 have been revised to reference the FSAR,	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
	7)		no.TXNB-09061 Date 11/5/2009	Program Source, and milestones for the Primary- to-Secondary Leakage Monitoring Program.	
RCOL_13.04-3	Table 13.4-201 (Sheets 1 and 2 of 7)	13.4-2 and 13.4-3	Response to RAI No. 71 Luminant Letter no.TXNB-09061 Date 11/5/2009	Items 1, 2, and 6 have been revised to reference 10CFR50.34.f (2) (xxvi) and FSAR Subsections that describe the Highly Radioactive Fluid Systems Outside Containment monitoring program requirements.	-
RCOL_13.04-1	Table 13.4-201 (Sheet 4 of 7)	13.4-5	Response to RAI No. 71 Luminant Letter no.TXNB-09061 Date 11/5/2009	Revised Item 9 to include Ground Water Monitoring Program implementation milestone.	-
RCOL2_NONE-1	13.7	13.7-1 13.7-2	Response to RAI No. 130 Luminant Letter no. TXNB-10010 Date 2/22/10	Revised Section 13.7 to provide more clarification for Fitness for Duty Program.	-
RCOL2_NONE-1	13.7.2	13.7-2	Response to RAI No. 130 Luminant Letter no.TXNB-10010 Date 2/22/10	Revised Reference 13.7-201 to correct the date and to add ML number. Added Reference 13.7-202	-
RCOL2_NONE-2	Table 13.4-201 (Sheet 7 and 8 of 8)	13.4-8 13.4-9	Response to RAI No. 131 Luminant Letter no.TXNB-10010 Date 2/22/10	Revised Table 13.4-201 to provide additional detail per NRC letter to NEI dated 12/2/09.	-
RCOL2_13.04-4	Table 13.4-201 (Sheet 1 of 9)	13.4-2	Response to RAI No. 151 Luminant Letter no.TXNB-10030 Date 04/12/2010	Revised Table 13.4-201 to include the inservice inspection element applicable to the steam generators.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_13.04-4	Table 13.4-201 (Sheet 2 of 9)	13.4-3	Response to RAI No. 151 Luminant Letter no.TXNB-10030 Date 04/12/2010	Revised Table 13.4-201 to include the preservice inspection element applicable to the steam generators.	-
DCD_09.03.02-13	13.4	13.4-1	Reflect response to DCD RAI No.526	Added COL Item 13.4 (2)	2
DCD_09.03.02-13	Table 13.4-201 (Sheet 1,2 and 3 of 9)	13.4-2 13.4-3 13.4-4	Reflect response to DCD RAI No.526	Added LMA to Items 1, 2 and 6.	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

13.4 OPERATIONAL PROGRAM IMPLEMENTATION

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

STD COL 13.4(1) Replace the sentence in the DCD Section 13.4 with the following.

Table 13.4-201 identifies the required Operational Programs including the associated FSAR Sections and committed Milestones for implementation. Each operational programs is "fully described" in the associated FSAR Sections.

13.4.1 Combined License Information

Replace the content of DCD Subsection 13.4.1 with the following.

STD COL 13.4(1) ***13.4(1)*** *Operational programs as defined in SECY-05-0197 (Ref. 13.4-1)*
This COL item is addressed in Section 13.4, including Table 13.4-201.

STD COL 13.4(2) ***13.4(2) Leakage monitoring program and prevention program as defined in NUREG-0737 Item III.D.1.1 (Ref. 13.4-2)***
This COL item is addressed in Table 13.4-201.

DCD_09.03.02-13

STD COL 13.4(1)

Table 13.4-201 (Sheet 1 of 9)

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation		
				Milestone	Requirement	
1.	Inservice Inspection Program	10 CFR 50.55a(g)	5.2.4 6.1 6.6	Prior to Commercial service	10 CFR 50.55a(g) ASME Section XI IWA 2430(b)	
	• Primary-to-Secondary Leakage Monitoring Program	10 CFR 50.55a(b)(2)(iii)	5.4.2.2	After steam generator on-line on nuclear heat	License Condition	RCOL_13.04-2
STD COL 13.4(2)	• Highly Radioactive Fluid Systems Outside Containment Monitoring Program	10 CFR 50.34.f(2)(xxvi)	Part 4 Technical Specification Subsection 5.5.2	After generator on-line on nuclear heat	License Condition	RCOL_13.04-3 DCD_09.03.02-13
	• Steam Generator Program	10 CFR 50.55a(g)	5.4.2.2	Prior to Commercial service	10 CFR 50.55a(g) ASME Section XI IWA 2430(b) Technical Specification 5.5.9	RCOL2_13.04-4

STD COL 13.4(1)

Table 13.4-201 (Sheet 2 of 9)

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation		
				Milestone	Requirement	
2.	Inservice Testing Program	10 CFR 50.55a(f) 10 CFR 50, Appendix A	3.9.6 5.2.4	After generator on-line on nuclear heat	10 CFR 50.55a(f) ASME OM Code	
	• Primary-to-Secondary Leakage Monitoring Program	10 CFR 50.55a(b)(2)(iii)	5.4.2.2	After steam generator on-line nuclear heat	License Condition	RCOL_13.04-2
STD COL 13.4(2)	• Highly Radioactive Fluid Systems Outside Containment Monitoring Program	10 CFR 50.34.f(2)(xxvi)	Part 4 Technical Specification Subsection 5.5.2	After generator on-line on nuclear heat	License Condition	RCOL_13.04-3 DCD_09.03.02-13
3.	Environmental Qualification Program	10 CFR 50.49(a)	3.11	Prior to Initial fuel load	License Condition	
4.	Preservice Inspection Program	10 CFR 50.55a(g)	5.2.4 6.6	Completion prior to initial plant start-up	10 CFR 50.55a(g) ASME Code Section XI IWB-2200(a)	
	• Steam Generator Tube Preservice Inspection	10 CFR 50.55a(g)	5.4.2.2	Prior to initial entry into Mode 4, Hot Shutdown	10 CFR 50.55a(g) ASME Code Section XI IWB-2200(c)	RCOL2_13.04-4
5.	Reactor Vessel Material Surveillance Program	10 CFR 50.60 10 CFR 50, Appendix H	5.3.1	Prior to initial criticality	License Condition	

STD COL 13.4(1)

Table 13.4-201 (Sheet 3 of 9)

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation	
				Milestone	Requirement
6.	Preservice Testing Program	10 CFR 50.55a(f)	3.9.6 5.2.4	Prior to initial fuel load	License Condition
STD COL 13.4(2)	• Highly Radioactive Fluid Systems Outside Containment Monitoring Program	10 CFR 50.34.f(2)(xxvi)	Part 4 Technical Specification Subsection 5.5.2	After generator on-line on nuclear heat	License Condition
7.	Containment Leakage Rate Testing Program	10 CFR 50.54(o) 10 CFR 50, Appendix A (GDC 32) 10 CFR 50, Appendix J 10 CFR 52.47(a)(1)	6.2.6	Prior to Initial fuel load	10 CFR 50, Appendix J Option A-Section III Option B-Section III.A
8.	Fire Protection Program	10 CFR 50.48	9.5.1	Prior to fuel receipt for elements of the Fire Protection Program necessary to support receipt and storage of fuel on-site. Prior to initial fuel load for elements or the Fire Protection Program necessary to support fuel load and plant operation.	License Condition
9.	Process and Effluent Monitoring and Sampling Program				

RCOL_13.04-3
DCD_09.03.02-13

Chapter 14

Chapter 14 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_14.02-9	14.2.12.1.112	14.2-6	Response to RAI No. 86 Luminant Letter no. TXNB-09062 Date 11/5/2009	COLA FSAR Subsection 14.2.12.1.112, "Personnel Monitors and Radiation Survey Instruments Preoperational Test", has been revised to specify that calibration be performed in accordance with the radiation protection program	-
RCOL2_14.02-12	14.2	14.2-6	Response to RAI No. 86 Luminant Letter no. TXNB-09062 Date 11/5/2009	FSAR Subsection 14.2.12.1.112 has been revised to include laboratory equipment consistent with RG 1.68 Appendix A, item 1.k(3).	-
RCOL2_14.02-13	14.2	14.2-6	Response to RAI No. 86 Luminant Letter no. TXNB-09062 Date 11/5/2009	FSAR Subsection 14.2.12.1.112 has been revised to specify that calibration be performed in accordance with the radiation protection program.	-
RCOL2_14.02-14	14.2.12.1.112	14.2-6	Response to RAI No. 86 Luminant Letter no. TXNB-09062 Date 11/5/2009	Subsection 14.2.12.1.112 has been revised to include reference to the radiation protection program for calibration requirements.	-
RCOL2_14.02-4	14.2	14.2-2	Response to RAI No. 75 Luminant Letter no. TXNB-09063 Date 11/11/2009	Incorporated ANS-3.1 Requirements for test personnel qualifications in 14.2.2.	-
RCOL2_14.02-4	14.2	14.2-18	Response to RAI No. 75	Added Table 14.2-203 "Comparison with the Qualification	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			Luminant Letter no. TXNB-09063 Date 11/11/2009	Requirements of the Staffing in ANS-3.1"	
RCOL2_14.02-6	14.2.11	14.2-5	Response to RAI No. 75 Luminant Letter no. TXNB-09063 Date 11/11/2009	Added statement the periodic reviews will be done to ensure test program schedules do not affect one another	-
RCOL2_14.02-15	14.2.12.1.113	14.2-7 14.2- 8	Response to RAI No. 98 Luminant Letter no. TXNB-09064 Date 11/11/2009	FSAR Subsection 14.2.12.1.113 has been revised to include testing of the ESWS valves to the FSS at the required flow rates to the hose stations located in the RB and ESWS pump house.	-
RCOL2_14.02-16	14.2.12.1.113	14.2-7 14.2- 8	Response to RAI No. 98 Luminant Letter no. TXNB-09064 Date 11/11/2009	Performance testing of basin water level logic has been specified in item A.4. The phrase mentioning the UHS transfer pump interlocks in C.1 and D.2 has been deleted. Performance testing of the UHS transfer pumps has been added as specified in item C.2 and in the acceptance criteria described in D.1. "Interlocks" in Objective 3 has been deleted.	-
RCOL2_14.02.01-1	14.2.12.1.112	14.2-5	Response to RAI No.129 Luminant Letter no.TXNB-10010 Date 2/22/10	Deleted Subsection 14.2.12.1.112 as testing of personnel monitors, survey instruments, and laboratory equipment is performed as part of	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				the Radiation Protection Program.	
RCOL2_14.02.01-1	Appendix 14A Table 14A-201	14A-2	Response to RAI No.129 Luminant Letter no.TXNB-10010 Date 2/22/10	Deleted Subsection 14.2.12.1.112 from table for consistency and stated that personnel monitors and radiation survey instruments are tested as part of the Radiation Protection Program.	-
DCD_14.02-120	14.2.8.2	14.2-3	Reflect response to DCD RAI No. 521	Revised "First –plant-only test" to "First-plant-only tests" on the Subsection 14.2.8.2	2
DCD_14.02-120	14.2.13	14.2-8	Reflect response to DCD RAI No. 521	Revised COL item 14.2(11) from "First-plant only test" to "First-plant only tests"	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

First-plant-only and prototype tests are either performed in accordance with Subection 14.2.8 or a justification is provided prior to initial fuel loading that the results of the First-plant-only tests and prototype test are applicable to a subsequent plant and are not required to be repeated. DCD_14.02-120

14.2.8.2.1 Natural Circulation Testing

STD COL 14.2(11) Add the following text at the end of DCD Subsection 14.2.8.2.1.

Natural circulation test is performed in accordance with Subsection 14.2.12.2.3.9 or a justification is provided based on Subsection 14.2.8.2.1 prior to initial fuel load that the results of the US-APWR prototype test are applicable to a subsequent plant and are not required to be repeated.

14.2.9 Trial Testing of Plant Operating and Emergency Procedures

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CP COL 14.2(7) Replace the last paragraph in DCD Subsection 14.2.9 with the following.

A schedule for the development of plant procedures required for use during preoperational testing will be provided to the U.S. Nuclear Regulatory Commission (NRC) 12 months prior to the start of the corresponding preoperational tests. A schedule for the development of plant procedures required for use during startup testing is provided to the NRC 12 months prior to the start of fuel loading. The schedules provide sufficient detail to assure that the procedures required to support testing are available for test procedure preparation, review and performance.

14.2.11 Test Program Schedule

CP COL 14.2(7) Replace the first and second sentences of the last paragraph in DCD Subsection 14.2.11 with the following.

An event-based schedule for conducting each major phase of the test program for the Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4, relative to the start of fuel loading, will be provided to the NRC six months prior to the start of preoperational testing. The schedule will be periodically updated to reflect actual

2. All alarms annunciate properly.

14.2.13 Combined License Information

Replace the content of DCD Subsection 14.2.13 with the following.

14.2(1) *Deleted from the DCD.*

CP COL 14.2(2) ***14.2(2)*** *Organization and staffing*

This COL item is addressed in Subsection 14.2.2.

14.2(3) *Deleted from the DCD.*

14.2(4) *Deleted from the DCD.*

14.2(5) *Deleted from the DCD.*

14.2(6) *Deleted from the DCD.*

CP COL 14.2(7) ***14.2(7)*** *Initial test program schedule and cross-reference of test abstracts with ITAAC*

This COL item is addressed in Subsections 14.2.9, 14.2.11 and Table 14.2-202

14.2(8) *Deleted from the DCD.*

14.2(9) *Deleted from the DCD.*

CP COL 14.2(10)
STD COL 14.2(10) ***14.2(10)*** *Site-specific test abstracts*

This *COL item is addressed in Subsections 14.2.12.1.90.C.8, 14.2.12.1.112, 14.2.12.1.113, and 14.2.12.1.114*, *Table 14.2-201*, and *Appendix 14A*.

STD COL 14.2(11) ***14.2(11)*** *First-plant only ~~test~~tests and prototype test* DCD_14.02-120

This COL item is addressed in Subsections 14.2.8.1 and 14.2.8.2.1.

STD COL 14.2(12) ***14.2(12)*** *Approved Test procedures*

This COL item is addressed in Subsection 14.2.3

Chapter 15

Chapter 15 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01127	15.0.3.3	15.0-1	Consistency with DCD Rev2	Changed “15A-18 through 15A-23” to “15A-18 through 15A-24”	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

15.0 TRANSIENT AND ACCIDENT ANALYSES

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

15.0.3.3 Atmospheric Dispersion Factors

CP COL 15.0(1) Replace the last paragraph in DCD Subsection 15.0.3.3 with the following.

The site-specific χ/Q values in Subsection 2.3.4 are bounded by the χ/Q values in Tables 15.0-13 and 15A-18 through 15A-~~23~~24 of the DCD. CTS-01127

15.0.4 Combined License Information

Replace the content of DCD Subsection 15.0.4 with the following.

CP COL 15.0(1) ***15.0(1)*** *Site-specific χ/Q values*

This Combined License (COL) item is addressed in Subsection 15.0.3.3.

Chapter 16

Chapter 16 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01130	16.2	16.2-1	Editorial Correction	Replaced instructions.	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

16.2 COMBINED LICENSE INFORMATION

CTS-01130

~~Replace the content of DCD Section 16.2 with the following.~~

~~The following COL Items are addressed in Subection 16.1.1.2 and/or Part 4 of the COLA.~~

Insert the following sentence at the beginning of DCD Section 16.2.

The following COL Items are addressed in Subsection 16.1.1.2 and/or Part 4 of the COLA.

Chapter 17

Chapter 17 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_17.05-3 RCOL2_17.05-8	17.3.1	17.3-2	Response to RAI No. 79 Luminant Letter no.TXNB-09065 Date 11/13/2009	17.3-202 NuBuild Quality Assurance Project Plan, Revision 1, Luminant, October 2008. 17.3-203 Comanche Peak Steam Electric Station Final Safety Analysis Report, Chapter 17, Amendment 101, Luminant, 2007. 17.3-204 US-APWR Quality Assurance Program Description, SQ-QD-070001, Revision 3, MNES, October 2008. 17.3-205 Quality Assurance Program Requirements for Nuclear Facilities, N45.2-1971, ANSI/ASME, 1971. 17.3-206 Quality Assurance Requirements for Nuclear Facility Applications, NQA-1-1994, ANSI/ASME, 1994.	-
RCOL2_17.05-8	17.5.3	17.5-1	Response to RAI No. 79 Luminant Letter no.TXNB-09065 Date 11/13/2009	Deleted “of this Final Safety Analysis Report (FSAR), for design, construction and operation phases” and “utilize” Added “initially use” and “for the engineering, procurement, and construction (EPC) phase.”	-
RCOL2_17.04-4	17.4.3	17.4-1	Response to RAI No. 92 Luminant Letter no.TXNB-09077 Date 12/9/2009	Clarifying text to state the O-RAP objectives	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_17.04-2	17.4.5	17.4-3	Response to RAI No. 92 Luminant Letter no.TXNB-09077 Date 12/9/2009	Added text to list other operational programs	-
RCOL2-17.04-3	Table 17.4-201	17.4-5	Response to RAI No. 92 Luminant Letter no.TXNB-09077 Date 12/9/2009	Revised table to list all cooling tower fans.	-
RCOL2-17.04-4	17.4.3	17.4-1	Response to RAI No. 92 Luminant Letter no.TXNB-09077 Date 12/9/2009	Revised text to emphasize the continuity of the basic RAP established during the design phase of the project.	-

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Chapter 18

Chapter 18 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

Chapter 19

Chapter 19 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01116	APPENDIX 19A	- 19A-i 19A-1	Consistency with DCD Rev.2	Added Appendix 19A	2

*Page numbers for the attached marked-up pages may differ from the revision 1 page numbers due to text additions and deletions. When the page numbers for the attached pages do differ, the page number for the attached page is shown in brackets.

APPENDIX 19A

CTS-01116

US-APWR BEYOND DESIGN BASIS AIRCRAFT IMPACT ASSESSMENT

TABLE OF CONTENTS

CTS-01116

19A US-APWR BEYOND DESIGN BASIS AIRCRAFT IMPACT ASSESSMENT

CTS-01116

This section of the referenced DCD is incorporated by reference with no departures or supplements.