PMComanchePeakPEm Resource

From: Conly, John [John.Conly@luminant.com]
Sent: Monday, October 11, 2010 2:42 PM
To: Aitken, Diane; Bell, Russ; Biggins, James; Bird, Bobby; Borsh, Gina; Buschbaum, Denny; Bywater, Russell; Caldwell, Jan; Carver, Ronald; Certrec; Ciocco, Jeff; Clouser, Tim; Collins, Elmo; Conly, John; Cosentino, Carolyn; Degeyter, Brock; Evans, Todd; Flores, Rafael; Frantz, Steve; Goldin, Laura; Hamzehee, Hossein; Hoshi, Masaya; Ishida, Mutsumi; Johnson, Michael; Kawai, Katsunori; Kawanago, Shinji; Keithline, Kimberley; Kellenberger, Nick; Koenig, Allan; Kramer, John; Lucas, Mitch; Madden, Fred; Matthews, David; Matthews, Tim; McConaghy, Bill; Monarque, Stephen; Monts, Ashley; Moore, Bill; ComanchePeakCOL Resource; Onozuka, Masanori; Paulson, Keith; Plisco, Loren; Reible, Robert; Rund, Jon; Simmons, Jeff; Singal, Balwant; Sirirat, Nan; Sprengel, Ryan; Takacs, Michael; Tapia, Joe; Tindell, Brian; Turner, Bruce; Volkening, David; Vrahoretis, Susan; Williamson, Alicia; Willingham, Michael; Woodlan, Don
Cc: Hill, Craig
Subject: Two Submittals to the NRC
Attachments: TXNB-10070 FSAR UTR R4.pdf; TXNB-10072 RAI 177, 178, 179.pdf

Luminant has submitted the following letters to the NRC:

TXNB-10070 FSAR Update Tracking Report Rev 4

TXNB-10072 Responses to RAIs 177, 178, and 179. The RAIs involve communications systems, ITAAC, and paleoliquifaction, respectively.

If there are any questions regarding these submittals, please contact me or contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com).

Thanks,

John Conly

Luminant
COLA Project Manager
(254) 897-5256

Hearing Identifier: ComanchePeak_COL_Public
Email Number: 1111

Mail Envelope Properties (D7A32D47A61872409CE74F57B83C8B011C756A5823)

Subject: Two Submittals to the NRC
Sent Date: 10/11/2010 2:41:43 PM
Received Date: 10/11/2010 2:42:02 PM
From: Conly, John

Created By: John.Conly@luminant.com

Recipients:
"Hill, Craig" <James.Hill@luminant.com>
Tracking Status: None
"Aitken, Diane" <diane.aitken@dom.com>
Tracking Status: None
"Bell, Russ" <rjb@nei.org>
Tracking Status: None
"Biggins, James" <James.Biggins@nrc.gov>
Tracking Status: None
"Bird, Bobby" <Robert.Bird@luminant.com>
Tracking Status: None
"Borsh, Gina" <regina.borsh@dom.com>
Tracking Status: None
"Buschbaum, Denny" <Dennis.Buschbaum@luminant.com>
Tracking Status: None
"Bywater, Russell" <russell_bywater@mnes-us.com>
Tracking Status: None
"Caldwell, Jan" <Janice.Caldwell@luminant.com>
Tracking Status: None
"Carver, Ronald" <Ronald.Carver@luminant.com>
Tracking Status: None
"Certrec" <cp34update@certrec.com>
Tracking Status: None
"Ciocco, Jeff" <Jeff.Ciocco@nrc.gov>
Tracking Status: None
"Clouser, Tim" <Timothy.Clouser@luminant.com>
Tracking Status: None
"Collins, Elmo" <Elmo.Collins@nrc.gov>
Tracking Status: None
"Conly, John" <John.Conly@luminant.com>
Tracking Status: None
"Cosentino, Carolyn" <Carolyn.Cosentino@luminant.com>
Tracking Status: None
"Degeyter, Brock" <Brock.Degeyter@energyfutureholdings.com>
Tracking Status: None
"Evans, Todd" <Eric.Evans@luminant.com>
Tracking Status: None
"Flores, Rafael" <Rafael.Flores@luminant.com>
Tracking Status: None
"Frantz, Steve" <sfrantz@morganlewis.com>
Tracking Status: None
"Goldin, Laura" <Laura.Goldin@nrc.gov>

Tracking Status: None
"Hamzehee, Hossein" <Hossein.Hamzehee@nrc.gov>
Tracking Status: None
"Hoshi, Masaya" <masaya_hoshi@mnes-us.com>
Tracking Status: None
"Ishida, Mutsumi" <mutsumi_ishida@mnes-us.com>
Tracking Status: None
"Johnson, Michael" <Michael.Johnson@nrc.gov>
Tracking Status: None
"Kawai, Katsunori" <katsunori_kawai@mnes-us.com>
Tracking Status: None
"Kawanago, Shinji" <shinji_kawanago@mnes-us.com>
Tracking Status: None
"Keithline, Kimberley" <kak@nei.org>
Tracking Status: None
"Kellenberger, Nick" <nicholas_kellenberger@mnes-us.com>
Tracking Status: None
"Koenig, Allan" <Allan.Koenig@luminant.com>
Tracking Status: None
"Kramer, John" <John.Kramer@nrc.gov>
Tracking Status: None
"Lucas, Mitch" <Mitchell.Lucas@energyfutureholdings.com>
Tracking Status: None
"Madden, Fred" <Fred.Madden@luminant.com>
Tracking Status: None
"Matthews, David" <David.Matthews@nrc.gov>
Tracking Status: None
"Matthews, Tim" <tmatthews@morganlewis.com>
Tracking Status: None
"McConaghy, Bill" <william_mcconaghy@mnes-us.com>
Tracking Status: None
"Monarque, Stephen" <Stephen.Monarque@nrc.gov>
Tracking Status: None
"Monts, Ashley" <Ashley.Monts@luminant.com>
Tracking Status: None
"Moore, Bill" <William.Moore4@luminant.com>
Tracking Status: None
"ComanchePeakCOL Resource" <ComanchePeakCOL.Resource@nrc.gov>
Tracking Status: None
"Onozuka, Masanori" <masanori_onozuka@mnes-us.com>
Tracking Status: None
"Paulson, Keith" <ck_paulson@mnes-us.com>
Tracking Status: None
"Plisco, Loren" <Loren.Plisco@nrc.gov>
Tracking Status: None
"Reible, Robert" <Robert.Reible@luminant.com>
Tracking Status: None
"Rund, Jon" <jrund@morganlewis.com>
Tracking Status: None
"Simmons, Jeff" <Jeffry.Simmons@luminant.com>
Tracking Status: None
"Singal, Balwant" <Balwant.Singal@nrc.gov>
Tracking Status: None
"Sirirat, Nan" <nan_sirirat@mnes-us.com>
Tracking Status: None
"Sprengel, Ryan" <ryan_sprengel@mnes-us.com>

Tracking Status: None
"Takacs, Michael" <Michael.Takacs@nrc.gov>
Tracking Status: None
"Tapia, Joe" <joseph_tapia@mnes-us.com>
Tracking Status: None
"Tindell, Brian" <Brian.Tindell@nrc.gov>
Tracking Status: None
"Turner, Bruce" <Bruce.Turner@luminant.com>
Tracking Status: None
"Volkening, David" <David.Volkening@luminant.com>
Tracking Status: None
"Vrahoretis, Susan" <Susan.Vrahoretis@nrc.gov>
Tracking Status: None
"Williamson, Alicia" <Alicia.Williamson@nrc.gov>
Tracking Status: None
"Willingham, Michael" <Michael.Willingham@nrc.gov>
Tracking Status: None
"Woodlan, Don" <Donald.Woodlan@luminant.com>
Tracking Status: None

Post Office: MDCEXMB01.tceh.net

Files	Size	Date & Time
MESSAGE	1090	10/11/2010 2:42:02 PM
TXNB-10070 FSAR UTR R4.pdf	2290413	
TXNB-10072 RAI 177, 178, 179.pdf	1515530	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Luminant

Rafael Flores
Senior Vice President &
Chief Nuclear Officer
rafael.flores@luminant.com

Luminant Power
P O Box 1002
6322 North FM 56
Glen Rose, TX 76043

T 254.897.5590
F 254.897.6652
C 817.559.0403

CP-201001352
Log # TXNB-10070

Ref. # 10 CFR 52

October 11, 2010

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
ATTN: David B. Matthews, Director
Division of New Reactor Licensing

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4
DOCKET NUMBERS 52-034 AND 52-035
FINAL SAFETY ANALYSIS REPORT UPDATE TRACKING REPORT REVISION 4

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein Update Tracking Report (UTR) Revision 4 for the Final Safety Analysis Report, which is part of the Combined License Application (COLA) for Comanche Peak Nuclear Power Plant Units 3 and 4. The UTR reflects standardization in the COLA as a result of Dominion Virginia Power adopting the US-APWR technology for North Anna Unit 3. The UTR also reflects changes in the US-APWR Design Control Document resulting from responses to requests for additional information (see Sections 1.8, 12.2, 12.3, 12.5, 19.1, and 19.3). The tracking report revision list provides a summary of and a reason for each change, and addresses any differences in page numbers between COLA Revision 1 and the UTR.

Should you have any questions regarding the UTR, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me. Addressees on the distribution list will receive the UTR via e-mail rather than on CD.

This letter completes Regulatory Commitment #7581 made in TXNB-10048 (ML101810388). There are no new commitments in this letter.

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

Executed on October 11, 2010.

Sincerely,

Luminant Generation Company LLC

RD Bird for

Rafael Flores

Attachment: COL Application Part 2, Final Safety Analysis Report Revision 1, Update Tracking Report Revision 4 (on CD)

Electronic distribution w/attachment:

Rafael.Flores@luminant.com
mlucas3@luminant.com
jeff.simmons@energyfutureholdings.com
Bill.Moore@luminant.com
Brock.Degeyter@energyfutureholdings.com
rbird1@luminant.com
Allan.Koenig@luminant.com
Timothy.Clouser@luminant.com
Ronald.Carver@luminant.com
David.Volkening@luminant.com
Bruce.Turner@luminant.com
Eric.Evans@luminant.com
Robert.Reible@luminant.com
donald.woodlan@luminant.com
John.Conly@luminant.com
JCaldwell@luminant.com
David.Beshear@txu.com
Ashley.Monts@luminant.com
Fred.Madden@luminant.com
Dennis.Buschbaum@luminant.com
Carolyn.Cosentino@luminant.com
NuBuild Licensing files
Luminant Records Management (.pdf files only)

shinji_kawanago@mnes-us.com
masanori_onozuka@mnes-us.com
ck_paulson@mnes-us.com
joseph_tapia@mnes-us.com
russell_bywater@mnes-us.com
william_mcconaghy@mnes-us.com
mutsumi_ishida@mnes-us.com
nan_sirirat@mnes-us.com
nicholas_kellenberger@mnes-us.com
ryan_sprengel@mnes-us.com
katsunori_kawai@mnes-us.com
masaya_hoshi@mnes-us.com
rjb@nei.org
kak@nei.org
michael.takacs@nrc.gov
cp34update@certrec.com
michael.johnson@nrc.gov
David.Matthews@nrc.gov
Balwant.Singal@nrc.gov
Hossein.Hamzehee@nrc.gov
Stephen.Monarque@nrc.gov
jeff.ciocco@nrc.gov
michael.willingham@nrc.gov
john.kramer@nrc.gov
Brian.Tindell@nrc.gov
Alicia.Williamson@nrc.gov
Elmo.Collins@nrc.gov
Loren.Plisco@nrc.com
Laura.Goldin@nrc.gov
James.Biggins@nrc.gov
Susan.Vrahoretis@nrc.gov
ComanchePeakCOL.Resource@nrc.gov
sfrantz@morganlewis.com
jrund@morganlewis.com
tmatthews@morganlewis.com
regina.borsh@dom.com
diane.aitken@dom.com

October 7, 2010

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

Part 2

FSAR Revision1

Update Tracking Report

Revision 4

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
-	6/7/2010	Updated Chapters: Ch. 2 See Luminant Letter no. TXNB-10042 Date 6/7/2010 Incorporated responses to following RAIs: No. 155, 157, 160
-	6/25/2010	Updated Chapters: Ch. 1, 2, 15 See Luminant Letter no. TXNB-10048 Date 6/25/2010 Incorporated responses to following RAIs: No. 156, 158, 163, 164
3	7/8/2010	Updated Chapters: Ch 2, 11
-	6/24/2010	Updated Chapters: Ch. 13 See Luminant Letter no. TXNB-10047 Date 6/24/2010 Incorporated responses to following RAIs: No. 161
-	6/24/2010	Updated Chapters: Ch. 2, 19 See Luminant Letter no. TXNB-10046 Date 6/24/2010 Incorporated responses to following RAIs: No. 165, 166

-	7/16/2010	Updated Chapters: Ch. 2 See Luminant Letter no. TXNB-10052 Date 7/16/2010 Incorporated responses to following RAIs: No. 138, 139, 140, 143
-	8/9/2010	Updated Chapters: Ch. 10 See Luminant Letter no. TXNB-10056 Date 8/9/2010 Incorporated responses to following RAIs: No. 169
-	8/9/2010	Updated Chapters: Ch. 2, 3 See Luminant Letter no. TXNB-10057 Date 8/9/2010 Incorporated responses to following RAIs: No. 162, 167
-	8/26/2010	Updated Chapters: Ch. 2 See Luminant Letter no. TXNB-10060 Date 8/26/2010 Incorporated responses to following RAIs: No. 144, 147
-	9/16/2010	Updated Chapters: Ch. 2 See Luminant Letter no. TXNB-10063 Date 9/16/2010 Incorporated responses to following RAIs: No. 145

-	9/22/2010	Updated Chapters: Ch. 1, 10, 11, 12 See Luminant Letter no. TXNB-10065 Date 9/22/2010 Incorporated responses to following RAIs: No. 135 Supplemental
-	9/29/2010	Updated Chapters: Ch. 2, 13 See Luminant Letter no. TXNB-10066 Date 9/29/2010 Incorporated responses to following RAIs: No. 71 Supplemental, 155 Supplemental, 156 Supplemental
4	10/7/2010	Updated Chapters: Ch 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 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

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
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
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
RCOL2_14.02-18	1.9	1.9-1	Response to RAI No.164 Luminant Letter no.TXNB-10048 Date 6/25/2010	Changed “operational aspect” to “operational aspects” in the first paragraph.	-
RCOL2_14.02-18	1.9.1	1.9-1	Response to RAI No.164 Luminant Letter no.TXNB-10048 Date 6/25/2010	Added “operational aspects and” in the first paragraph.	-
RCOL2_14.02-18	Table 1.9-201	1.9-4	Response to RAI No.164 Luminant Letter no.TXNB-10048 Date 6/25/2010	Changed “COLA FSAR Status” column for RG 1.16 to “Not applicable” because RG was withdrawn.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_14.02-18	Table 1.9-201	1.9-5	Response to RAI No.164 Luminant Letter no.TXNB-10048 Date 6/25/2010	Under RG 1.28 and RG 1.30 delete corresponding chapter/section “14.2.7” and add “17.3.” Under RG 1.37 delete “14.2.7.”	-
RCOL2_14.02-18	Table 1.9-201	1.9-9	Response to RAI No.164 Luminant Letter no.TXNB-10048 Date 6/25/2010	Under RG 1.116 delete corresponding chapter/section “14.2.7” and add “17.3.”	-
RCOL2-12.03-12.04-11	Table 1.9-202	1.9-16	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Added R. G. 4,21.	-
CTS-01140	1.2.1.5.4.4 1.2.1.6 1.2.1.7.1 1.2.2 1.6 1.7 1.8 1.8.1.1 1.8.1.3 1.8.1.4 1.8.2 Table 1.8-201 (Sheet 14 and 20 of 62)	1.2-1 1.2-2 1.2-3 1.2-4 1.6-1 1.7-1 1.8-1 1.8-3 1.8-23 1.8-29	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4
DCD_02-1	Table 1.8-201 (Sheet 1 of 62)	1.8-10	Reflect Response to DCD RAI No. 518	Revised the COL 2.1(1) description from “site parameters” to “site characteristics.”	4
MAP-03-030	Table 1.8-201 (Sheet 5 of 62)	1.8-14	Editorial corrections	Replaced typographical errors “Pritectuib” with “Protection” and “Low-Tragectory” with “Low-Trajectory” in row COL 3.5(2)	4
MAP-03-029	Table 1.8-201 (Sheet 11 of 62)	1.8-20	Revised COL information item to be consistent with DCD	Deleted “as free field outcrop motions on the uppermost in-situ competent material” from row COL 3.7(20)	4

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
DCD_19-426	Table 1.8-201 (Sheet 61 of 62)	1.8-70	Reflect Response to DCD RAI No. 564	Added the following after the last sentence in COL 19.3(1): "Peer reviews for the updated PRA will be performed prior to the use of PRA to risk-informed applications."	4
CTS-01144	Table 1.9-201 (Sheet 1 through 8, 10 and 12 of 12) Table 1.9-203	1.9-4 through 1.9-11 1.9-13 1.9-15 1.9-17 Through 1.9-19	Response to RAI No.164 Luminant Letter no.TXNB-10048 Date 6/25/2010	Made enhancements to Table 1.9-201, 1.9-202 and 1.9-203 per Regulatory Commitment 7581 made in RAI No.164	4

*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.

1.2 GENERAL PLANT DESCRIPTION

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

1.2.1.5.4.4 Water Systems

~~CP~~STD COL 1.8(1)

Add the following paragraph at the end of DCD Subsection 1.2.1.5.4.4. CTS-01140

Ultimate heat sink - The ultimate heat sink (UHS) is comprised of cooling towers (CTWs), basins, transfer pumps, piping, valves, and instrumentation. The system provides the capability to remove heat from the essential service water system (ESWS).

The UHS satisfies the following design requirements:

- The UHS is designed to perform safety-related functions assuming a single failure in one train, with another train out of service for maintenance.
- The UHS consists of four independent trains. Each train includes a mechanical draft cooling tower, a basin, and a transfer pump.
- The UHS is designed to cool the heated service water by the forced airflow in the mechanical draft cooling towers, and return the water to the basin.
- The UHS is designed to provide sufficient cooling capacity during normal, transient, and accident operating conditions, for the safe operation and orderly shutdown of the plant. The maximum supply water temperature from the UHS is 95 °F under the peak heat loads condition.
- Each basin provides 33-1/3 percent of the combined inventory for the 30-day storage capacity, to satisfy the recommendation of Regulatory Guide (RG) 1.27.
- A transfer pump is provided in each basin to allow transfer of water between basins and thus permit full utilization of the total water inventory in three basins, assuming the most limiting single active failure with another train out of service for maintenance.
- The mechanical draft cooling towers and the transfer pumps are powered from the safety buses so safety-related functions are maintained during a loss of offsite power (LOOP).

1.2.1.5.6 Electric Power

CP COL 1.8(1)

Replace the last sentence of the first paragraph in DCD Subsection 1.2.1.5.6 with the following.

Generator output voltage is stepped up to 345 kV and transmitted through overhead transmission lines to the plant switching station, where distribution to the transmission system is accomplished. Four 345 kV transmission lines connect the plant switching station to the transmission grid.

1.2.1.6 Site Characteristics

~~CP~~STD COL 1.2(1)

Replace the second paragraph in DCD Subsection 1.2.1.6 with the following. CTS-01140

The site characteristics ~~of CPNPP Units 3 and 4~~ are addressed in Chapter 2. The site plan ~~of CPNPP Units 3 and 4~~ is shown in Figure 1.2-1R.

CP COL 1.2(1)

Replace the fourth sentence of the third paragraph in DCD Subsection 1.2.1.6 with the following.

The configuration of the ultimate heat sink and related structures is addressed in Subsections 1.2.1.5.4.4 and 1.2.1.7.2.8. Each UHS and related structure is located on the north side of the reactor building.

CP COL 1.2(1)

Replace the last sentence of the third paragraph in DCD Subsection 1.2.1.6 with the following.

The plant switching station is located approximately half a mile southwest of CPNPP Units 3 and 4, and the switchyard area is located on the south side of each turbine building as depicted in Subsection 8.2.1.2.1.

1.2.1.7.1 General Plant Arrangement

~~CP~~STD COL 1.8(1)

Add the following text at the end of first paragraph in DCD Subsection 1.2.1.7.1. CTS-01140

In addition, the UHS is the major ~~CPNPP Units 3 and 4~~ site-specific structure.

CP COL 1.2(1)

Replace the first sentence of the second paragraph in DCD Subsection 1.2.1.7.1 with the following.

The outline and the arrangement of CPNPP Units 3 and 4 are shown in Figure 1.2-1R.

~~CP~~STD COL 1.8(1)

Add the following text after the first sentence of the third paragraph in DCD Subsection 1.2.1.7.1. CTS-01140

The UHS is designed and constructed as a safety-related structure, to the requirements of seismic category I, as defined in RG 1.29.

CP COL 1.8(1)

Replace the last sentence in DCD Subsection 1.2.1.7.1 with the following.

The general arrangement drawings for the CPNPP Units 3 and 4 are provided in Figures 1.2-2R through 1.2-51, as well as Figures 1.2-201 through 1.2-210.

CP SUP 1.2(1)

The design plant grade in the DCD is 2’-7”, whereas the nominal plant grade elevation for CPNPP Units 3 and 4 is National Geodetic Vertical Datum of 1929 (NGVD 29) Elevation 822’-0”; therefore, DCD elevations are to be increased by 819’-5” to be actual site elevations. The nominal plant grade floor elevation for design is NGVD 29 Elevation 822’-0” and corresponds to DCD Elevation 2’-7”. The actual plant grade floor elevation varies to accommodate floor slope and layout requirements.

CP COL 1.8(1)

Add the following new subsection after DCD Subsection 1.2.1.7.2.7.

1.2.1.7.2.8 Ultimate Heat Sink Related Structures

The ultimate heat sink related structures (UHSRS) are seismic category I structures that connect to the essential service water pipe tunnel (ESWPT).

Each UHSRS consists of a cooling tower enclosure, UHS essential service water (ESW) pump house and a UHS basin.

Each UHS ESW pump house contains one safety-related pump and one UHS transfer pump. The UHS ESW pump house ventilation system maintains environmental conditions to UHS ESW pump house that meet the design requirements during normal, transient, and accident operating conditions, for the safe operation and orderly shutdown of the plant.

1.2.2 Combined License Information

Replace the content of DCD Subsection 1.2.2 with the following.

CP COL 1.2(1) STD COL 1.2(1) ***1.2(1)*** *Site-specific site plan* CTS-01140

This COL item is addressed in Subsections 1.2.1.6 and 1.2.1.7.1 and Figure 1.2-1R.

1.6 MATERIAL REFERENCED

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

~~CP~~STD SUP 1.6(1)

Add the following text after the last paragraph in DCD Subsection 1.6. CTS-01140

A list of topical reports incorporated by reference as part of the FSAR is shown in Table 1.6-201.

1.7 DRAWINGS AND OTHER DETAILED INFORMATION

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

~~CP~~STD SUP 1.7(1)

Add the following text after the last paragraph in DCD Section 1.7. CTS-01140

Table 1.7-201 contains a list of site-specific instrument and control functional diagrams and electrical one-line diagrams. A list of site-specific system drawings is shown in Table 1.7-202.

1.8 INTERFACES FOR STANDARD DESIGN

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

~~CP~~STD COL 1.8(1)

Replace the last sentence of the third paragraph and the first through third sentences of the fourth paragraph in DCD Section 1.8 with the following. CTS-01140

The ~~CPNPP Units 3 and 4~~ site plan is shown on Figure 1.2-1R. CTS-01140

Table 1.8-1R has been revised for the FSAR with a column indicating the summary of the site-specific significant interface description and the location in the FSAR. Items in the “Description” column of Table 1.8-1R are partially or entirely site-specific and are outside the scope of the US-APWR standard plant design. This table also includes a description of each interface and the location of the DCD in which it is discussed.

~~CP~~STD COL 1.8(1)

Add the following text after the last paragraph in DCD Section 1.8. CTS-01140

10 CFR 52.79 requires demonstration that interface requirements established for the certified standard design have been met. This section identifies the interfaces between the US-APWR standard plant design and the ~~CPNPP Units 3 and 4~~ site-specific design. ~~As a COL applicant referencing the certified US-APWR design, Luminant has provided design features and characteristics that comply with the interface requirements for the site-specific portion of the CPNPP Units 3 and 4 facility design in the FSAR.~~This COLA, which references the certified US-APWR design, provides design features and characteristics that comply with the interface requirements for the site-specific portion of the facility design in the FSAR. The following subsections describe the site-specific interfaces and the location where the design features for each interface are addressed. CTS-01140

1.8.1.1 Consolidated Combined License Items for the Entire Design Control Document

---

~~CP~~STD COL 1.8(2)
~~CP~~STD COL 1.8(3)

Replace the second and third paragraphs in DCD Subsection 1.8.1.1 with the following new subsections. CTS-01140

1.8.1.2 Resolution of Combined License Information Items

Table 1.8-201 lists the FSAR location where each COL information item from the change in accordance with the progress of design or construction. Such detailed schedule information is proposed as "regulatory commitments" of COL Applicant.

5. The inspections, tests, analyses, and acceptance criteria (ITAAC): Information that will be verified in the ITAAC.

The column entitled "Resolution Category" in Table 1.8-201 indicates the resolution status of each COL item categorized to 1a, 1b, 2, 3a, 3b, 3c, 4, or 5 as noted above.

CP COL 1.8(3)

1.8.1.3 Summary of Departures

CTS-01140

There are no departures from the US-APWR DCD in the FSAR.

STD COL 1.8(3)

1.8.1.4 Conformance with Site Parameters

CTS-01140

The site parameters assumed for the US-APWR design certification are found in Section 2.1 of Tier 1 of the referenced US-APWR DCD, and in Chapter 2.0 of Tier 2 of the referenced US-APWR DCD. Conformance ~~of the CPNPP Units 3 and 4 site~~ with these site parameters is evaluated in Chapter 2.0. CTS-01140

1.8.2 Combined License Information

Replace the content of DCD Subsection 1.8.2 with the following.

CP COL 1.8(1)
STD COL 1.8(1)

1.8(1) *Interface requirements* CTS-01140

This COL item is addressed in Section 1.8 and Table 1.8-1R.

CP COL 1.8(2)
STD COL 1.8(2)

1.8(2) *Resolution for COL information items* CTS-01140

This COL item is addressed in Subsection 1.8.1.2 and Table 1.8-201.

CP COL 1.8(3)
STD COL 1.8(3)

1.8(3) *Summary of departure and conformance with site parameter* CTS-01140

This COL item is addressed in Subsections 1.8.1.3 and 1.8.1.4.

CP COL 1.8(2)

Table 1.8-201 (Sheet 1 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 1.1(1)	The COL Applicant is to provide scheduled completion date and estimated commercial operation date of nuclear power plants referencing the US-APWR standard design.	1.1.5	3a
COL 1.1(2)	The Combined License (COL) Applicant is to identify the actual plant location.	1.1.1	3a
COL 1.2(1)	The COL Applicant is to develop a complete and detailed site plan in the site-specific licensing process.	1.2.1.6 1.2.1.7.1 Figure 1.2-1R	3a
COL 1.4(1)	The COL Applicant is to identify major agents, contractors, and participants for the COL application development, construction, and operation.	1.4.1 1.4.2.3 – 1.4.2.6	4
COL 1.8(1)	The COL Applicant is to demonstrate that the interface requirements established for the design have been met.	1.8 Table 1.8-1R	3a
COL 1.8(2)	The COL Applicant is to provide the cross-reference identifying specific FSAR sections that address each COL information item from the DCD	1.8.1.2 Table 1.8-201	3a
COL 1.8(3)	The COL Applicant is to provide a summary of plant specific departures from the DCD, and conformance with site parameters.	1.8.1.3 1.8.1.4	3a
COL 1.9(1)	The COL Applicant is to address an evaluation of the applicable RG, SRP, Generic Issues including Three Mile Island (TMI) requirements, and operational experience for the site-specific portion and operational aspect of the facility.	1.9 1.9.1-1.9.4 Table 1.9-201 - 220	3a
COL 2.1(1)	The COL Applicant is to describe the site geography and demography including the specified site ~~parameters~~characteristics.	2.0 2.1	3a

DCD_02-1

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~~Protection Against Low-Tra~~g~~jectory 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

MAP-03-030

CP COL 1.8(2)

Table 1.8-201 (Sheet 11 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.7(20)	The COL Applicant is to validate the site-independent seismic design of the standard plant for site-specific conditions, including geological, seismological, and geophysical characteristics, and to develop the site-specific GMRS ~~as free-field outcrop motions on the uppermost in-situ competent material~~.	3.7 Appendix 3NN	3a
COL 3.7(21)	The COL Applicant is responsible for the seismic design of those seismic category I and seismic category II SSCs that are not part of the US-APWR standard plant.	3.7	3a
COL 3.7(22)	The COL Applicant is required to perform site-specific seismic analyses, including SSI analysis which considers seismic wave transmission incoherence and analysis of the CAV of the seismic input motion, in order to determine if high-frequency exceedances of the CSDRS could be transmitted to SSCs in the plant superstructure with potentially damaging effects.	3.7.1.1	3a
COL 3.7(23)	The COL Applicant is to verify that the results of the site-specific SSI analysis for the broadened ISRS and basement walls lateral soil pressures are enveloped by the US-APWR standard design.	3.7.2.4.1 Appendix 3NN	3a
COL 3.7(24)	The COL Applicant is to verify that the site-specific ratios V/A and AD/V^2(A, V, D, are PGA, ground velocity, and ground displacement, respectively) are consistent with characteristic values for the magnitude and distance of the appropriate controlling events defining the site-specific uniform hazard response spectra.	3.7.1.1	3a

MAP-03-029

CP COL 1.8(2)

Table 1.8-201 (Sheet 14 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.8(7)	It is the responsibility of the COL Applicant to determine the site-specific aggressivity of the ground water/soil and accommodate this parameter into the concrete mix design as well as into the site-specific structural surveillance program.	3.8.1.6 3.8.4.7	3a
COL 3.8(8)	Deleted from the DCD.		
COL 3.8(9)	Deleted from the DCD.		
COL 3.8(10)	The prestressing system is designed as a strand system, however the system material may be switched to a wire system at the choice of the COL Applicant. If this is done, the COL Applicant is to adjust the US-APWR standard plant tendon system design and details on a site-specific basis.	3.8.1.6	3a
COL 3.8(11)	Deleted from the DCD.		
COL 3.8(12)	Deleted from the DCD.		
COL 3.8(13)	Deleted from the DCD.		
COL 3.8(14)	It is the responsibility of the COL Applicant to establish programs for testing and ISI of the PCCV, including periodic inservice surveillance and inspection of the PCCV liner and prestressing tendons in accordance with ASME Code Section XI, Subsection IWL.	3.8.1.7	1a

CTS-01140

CP COL 1.8(2)

Table 1.8-201 (Sheet 20 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.11(5)	The COL Applicant is to identify the site-specific equipment to be addressed in the EQ Program, including locations and environmental conditions.	3.11.1.1 Table 3D-201	3a
COL 3.11(6)	The COL Applicant is to qualify site-specific electrical and mechanical equipment (including instrumentation and control, and certain accident monitoring equipment) using an equivalent qualification process to that delineated for the US-APWR Standard Plant.	3.11.4	3a
COL 3.11(7)	The COL Applicant is to identify chemical and radiation environmental requirements for site-specific qualification of electrical and mechanical equipment (including instrumentation and control, and certain accident monitoring equipment).	3.11.5 ~~Table 3D-201~~	3a
COL 3.11(8)	The COL Applicant is to provide the site-specific mechanical equipment requirements.	3.11.6 Table 3D-201	3a
COL 3.11(9)	Optionally, the COL Applicant may revise the parameters based on site-specific considerations.	3.11.1.2	3a
COL 3.12(1)	Deleted from the DCD.		
COL 3.12(2)	If any piping is routed in tunnels or trenches in the yard, the COL Applicant is to generate site-specific seismic response spectra, which may be used for the design of these piping systems.	3.12.5.1	3a
COL 3.12(3)	If the COL Applicant finds it necessary to lay ASME Code, Section III (Reference 3.12-2), Class 2 or 3 piping exposed to wind or tornado loads, then such piping must be designed to the plant design basis loads.	3.12.5.3.6	3a
COL 3.12(4)	The COL Applicant is to screen piping systems that are sensitive to high frequency modes for further evaluation.	3.12.5.6	3a

CTS-01140

CP COL 1.8(2)

Table 1.8-201 (Sheet 61 of 62)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 19.3(1)	The COL Applicant who intends to implement risk-managed technical specifications continues to update Probabilistic Risk Assessment and Severe Accident Evaluation to provide PRA input for risk-managed technical specifications. Peer reviews for the updated PRA will be performed prior to the use of PRA to risk-informed applications.	19.1.7.6	4
COL 19.3(2)	Deleted from the DCD.		
COL 19.3(3)	Deleted from the DCD.		
COL 19.3(4)	The Probabilistic Risk Assessment and Severe Accident Evaluation is updated as necessary to assess specific site information and associated site-specific external events (high winds and tornadoes, external floods, transportation, and nearby facility accidents).	19.1.1.2.1 19.1.4.1.2 19.1.4.2.2 19.1.5 19.1.5.2.2 19.1.5.3.2 19.1.6.2 19.2.6.1 19.2.6.1.1 19.2.6.2 19.2.6.4 19.2.6.5 19.2.6.6 Table 19.1-201 Table 19.1-202 Table 19.1-203 Table 19.2-9R Figure 19.1-201	3a
COL 19.3(5)	Deleted from the DCD.		

DCD_19-426

CP COL 1.9(1)

Table 1.9-201 (Sheet 1 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
1.8	Qualification and Training of Personnel for Nuclear Power Plants	Revision 3 May 2000	Conformance with exceptions (Criterion 2: The minimum qualification requirement of the plant staff conforms to CPNPP Units 3 and 4 technical specification and Chapter 13. And QA conforms to quality assurance program description [QAPD].)	12.1.1.3.1 13.1 ~~13.2~~ ~~14.2~~ 17.5 COLA Part 4	CTS-01144
1.12	Nuclear Power Plant Instrumentation for Earthquakes	Revision 2 March 1997	Conformance	3.7.4 ~~13.4~~	CTS-01144
1.16	Reporting of Operating Information – Appendix A Technical Specifications	Revision 4 August 1975	~~Conformance with exceptions~~Not applicable ~~(CPNPP Units 3 and 4 conform to 10 CFR 50.72 and 50.73 and technical specification requirement.)~~(This RG was withdrawn on 8/11/2009.)	~~14.2.6~~ ~~14.2.7~~N/A ~~COLA Part 4~~N/A	RCOL2_14.02-18
1.21	Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants	Revision 1 June 1974	Conformance with exceptions (ANSI N13.1-1999 is applied in C.6.)	~~3.1.6~~ ~~11.5.1~~ 11.5.2 ~~12.3.4~~	CTS-01144 CTS-01144
1.23	Meteorological Monitoring Programs for Nuclear Power Plants	Second Proposed Revision 1 April 1986	Conformance; revision of record CPNPP Units 1 and 2	2.3.3 2.3.4	
1.24	Assumptions Used for Evaluating the Potential Radiological Consequences of a Pressurized Water Reactor Radioactive Gas Storage Tank Failure	Revision 0 March 1972	Conformance	~~11.3.3~~N/A	CTS-01144

Table 1.9-201 (Sheet 2 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
1.27	Ultimate Heat Sink for Nuclear Power Plants	Revision 2 January 1976	Conformance	2.4.2 - 2.4.4 2.4.11 9.2.1.3 9.2.5 COLA Part 4	
1.28	Quality Assurance Program Requirements (Design and Construction)	Revision 3 August 1985	Conformance with exception (QAPD conforms with SRP 17.5 and NQA-1 1994 Edition.)	~~14.2.7~~ ~~17.2~~ 17.3 17.5	RCOL2_14.02-18 CTS-01144
1.29	Seismic Design Classification	Revision 4 March 2007	Conformance	2.4.2 - 2.4.4 ~~3.2~~	CTS-01144
1.30	Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment	Revision 0 August 1972	Conformance with exception (QAPD conforms with SRP 17.5 and NQA-1 1994 Edition.)	~~14.2.7~~ 17.3 17.5	RCOL2_14.02-18
1.33	Quality Assurance Program Requirements (Operation)	Revision 2 February 1978	Conformance with exception (QAPD conforms with SRP 17.5 and NQA-1 1994 Edition.)	11.5.2 13.1 13.5 ~~17.2~~ 17.5 COLA Part 4	CTS-01144
1.35	In-Service Inspection (ISI) of Ungrouted Tendons in Prestressed Concrete Containments	Revision 3 July 1990	Conformance (Note: limited to design considerations; implementation of ISI physical inspection will be by COL holder)	~~3.8.1.2~~ 3.8.1.7	CTS-01144
1.37	Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants	Revision 1 March 2007	Conformance (Note: QAPD commits to RG 1.37, in accordance with SRP 17.5.)	~~14.2.7~~ ~~17.2~~ 17.5	RCOL2_14.02-18 CTS-01144

Table 1.9-201 (Sheet 3 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
1.38	Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants	Revision 2 May 1977	Conformance with exception (QAPD conforms with SRP 17.5 and Subpart 2.2 of NQA-1 1994 Edition.)	~~17.2~~ 17.5	CTS-01144
1.39	Housekeeping Requirements for Water-Cooled Nuclear Power Plants	Revision 2 September 1977	Conformance with exception (QAPD conforms with SRP 17.5 and NQA-1 1994 Edition.)	~~17.2~~ 17.5	CTS-01144
1.54	Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants	Revision 1 July 2000	Conformance	6.1.2	
1.59	Design Basis Floods for Nuclear Power Plants	Revision 2 August 1977	Conformance with exceptions (RG 1.59 Appendix A indicates use of ANSI N170-1976. In place of this standard, ANSI/ANS-2.8-1992 was used. ANSI/ANS-2.8-1992 was issued as a superseding document to ANSI N170-1976. ANSI/ANS-2.8-1992 was withdrawn on July 26, 2002. However, a replacement standard has not been issued. NUREG-0800 2.4.4 Revision 3, March 2007 includes ANSI/ANS-2.8-1992 as a reference.)	2.4.2 - 2.4.5 2.4.10 ~~3.4~~	CTS-01144
1.60	Design Response Spectra for Seismic Design of Nuclear Power Plants	Revision 1 December 1973	Conformance	2.5.2	
1.61	Damping Values for Seismic Design of Nuclear Power Plants	Revision 1 March 2007	Conformance	3.7.1.2 Appendix 3KK Appendix 3LL Appendix 3MM Appendix 3NN	

Table 1.9-201 (Sheet 4 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
1.68	Initial Test Programs for Water-Cooled Nuclear Power Plants	Revision 3 March 2007	Conformance	14.2 Appendix 14A	
1.76	Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants	Revision 1 March 2007	Conformance	2.3.1.2.3 3.3.2 3.5.1	
1.78	Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release	Revision 1 December 2001	Conformance	2.2.3 6.4.4	
1.82	Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident	Revision 3 November 2003	Conformance	6.2.2	
1.83	In-service Inspection of Pressurized Water Reactor Steam Generator Tubes	Revision 1 July 1975	Not applicable (This RG is considered for withdrawal by NRC.)	N/A	
1.84	Design, Fabrication, and Materials Code Case Acceptability, ASME Section III	Revision 34 October 2007	Conformance	~~3.12.2~~ ~~4.5.1.1~~ ~~4.5.2.1~~ N/A	CTS-01144
1.86	Termination of Operating Licenses for Nuclear Reactors	Revision 0 June 1974	Not applicable (This RG is outside the scope of the FSAR.)	N/A	
1.91	Evaluations of Explosions Postulated To Occur on Transportation Routes Near Nuclear Power Plants	Revision 1 February 1978	Conformance	2.2	

Table 1.9-201 (Sheet 5 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
1.92	Combining Modal Responses and Spatial Components in Seismic Response Analysis	Revision 2 July 2006	Conformance	Appendix 3KK Appendix 3LL Appendix 3MM Appendix 3NN	
1.94	Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants	Revision 1 April 1976	Conformance with exception (QAPD conforms with SRP 17.5 and Subpart 2.5 of NQA-1 1994 Edition.)	~~17.2~~ 17.5	CTS-01144
1.100	Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants	Revision 2 June 1988	Conformance	~~3.10~~N/A	CTS-01144
1.101	Emergency Planning and Preparedness for Nuclear Power Reactors	Revision 5 June 2005	Not applicable (This RG is outside the scope of the FSAR. COLA Part 5 addresses the emergency planning.)	N/A	
1.102	Flood Protection for Nuclear Power Plants	Revision 1 September 1976	Conformance	2.4.2 - 2.4.4 2.4.10 ~~3.4~~	CTS-01144
1.109	Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I	Revision 1 October 1977	Conformance	11.2.3 11.3.3 11.4.3 11.5.2	
1.110	Cost-Benefit Analysis for Radwaste Systems for Light-Water-Cooled Nuclear Power Reactors	Revision 0 March 1976	Conformance	11.2.1 11.3.1 11.4.1 11.5.2	

Table 1.9-201 (Sheet 6 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
1.111	Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors	Revision 1 July 1977	Conformance	2.3.5 11.4.3 11.3.3 11.5.2	CTS-01144
1.113	Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I	Revision 1 April 1977	Conformance	11.2.3 11.4.3 11.5.2	
1.114	Guidance to Operators at the Controls and to Senior Operators in the Control Room of a Nuclear Power Unit	Revision 2 May 1989	Conformance	13.5	
1.115	Protection Against Low-Trajectory Turbine Missiles	Revision 1 July 1977	Conformance	~~3.5.1.3.1~~ 3.5.1.3.2	CTS-01144
1.116	Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems	Revision 0-R May 1977	Conformance with exception (QAPD conforms with SRP 17.5 and Subpart 2.8 of NQA-1 1994 Edition.)	~~14.2.7~~ 17.3 17.5	RCOL2_14.02-18
1.122	Development of Floor Design Response Spectra for Seismic Design of Floor-Supported Equipment or Components	Revision 1 February 1978	Conformance	Appendix 3KK Appendix 3LL Appendix 3MM	
1.127	Inspection of Water-Control Structures Associated with Nuclear Power Plants	Revision 1 March 1978	Conformance	2.4 2.5 3.8.4.7	
1.129	Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants	Revision 2 February 2007	Conformance	~~8.1.5.3~~ ~~8.3.2~~N/A	CTS-01144
1.132	Site Investigations for Foundations of Nuclear Power Plants	Revision 2 October 2003	Conformance	2.5.1 2.5.4	

Table 1.9-201 (Sheet 7 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
1.133	Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors	Revision 1 May 1981	Conformance with exceptions (C.3.a and C.6 are not applicable.)	~~4.4.6.3~~N/A	CTS-01144
1.134	Medical Evaluation of Licensed Personnel at Nuclear Power Plants	Revision 3 March 1998	Conformance	N/A	
1.135	Normal Water Level and Discharge at Nuclear Power Plants	Revision 0 September 1977	Conformance	2.4.2 - 2.4.7	
1.136	Design Limits, Loading Combinations, Materials, Construction, and Testing of Concrete Containments	Revision 3 March 2007	Conformance	3.8.1.6	
1.138	Laboratory Investigations of Soils and Rocks for Engineering Analysis and Design of Nuclear Power Plants	Revision 2 December 2003	Conformance	2.5.1 2.5.4	
1.139	Guidance for Residual Heat Removal (for Comment)	Revision 0 May 1978	Not applicable (This RG has been withdrawn by NRC.)	N/A	
1.145	Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants	Revision 1 November 1982	Conformance	2.3.4	
1.147	In-service Inspection Code Case Acceptability, ASME Section XI, Division 1	Revision 15 October 2007	Conformance	3.8.1.7 5.2.1.2 ~~5.2.4.8~~ ~~6.6.1~~ ~~6.6.3~~	CTS-01144

Table 1.9-201 (Sheet 8 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section
1.149	Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations	Revision 3 October 2001	Conformance	13.2
1.150	Ultrasonic Testing of Reactor Vessel Welds During Preservice and In-service Examinations	Revision 1 February 1983	Not applicable (This RG has been withdrawn by NRC.)	N/A
1.159	Assuring the Availability of Funds for Decommissioning Nuclear Reactors	Revision 1 October 2003	Not applicable (This RG is outside the scope of the FSAR. COLA Part 1 addresses this information.)	N/A
1.160	Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	Revision 2 March 1997	Conformance	3.8.4.7 17.6
1.161	Evaluation of Reactor Pressure Vessels with Charpy Upper-Shelf Energy Less Than 50 Ft-Lb	Revision 0 June 1995	Not applicable (Materials for new units are procured with specifications so that the expected USE will be greater than 50 ft-lb throughout the reactor pressure vessel life.)	N/A
1.162	Format and Content of Report for Thermal Annealing of Reactor Pressure Vessel	Revision 0 February 1996	Not applicable (RG applies to units in operation that require recovery of reactor pressure vessel material toughness properties by thermal annealing.)	N/A
1.165	Identification and Characterization of Seismic Sources and Determination of Safe Shutdown Earthquake Ground Motion	Revision 0 March 1997	Not applicable (CPNPP Units 3 and 4 conform to RG 1.208.)	NA
1.166	Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Post earthquake Actions	Revision 0 March 1997	Conformance	~~3.7.4~~N/A | CTS-01144

Table 1.9-201 (Sheet 10 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section
1.181	Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)	Revision 0 September 1999	Conformance (Note: This FSAR style meets the guidance of RG 1.206.)	N/A
1.182	Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants	Revision 0 May 2000	Conformance	17.6 COLA Part 4
1.183	Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors	Revision 0 July 2000	Conformance	~~12.2.1.3~~ ~~12.3.1.2.2~~ ~~12.3.2.2.7~~ ~~12.4.1.8~~ 12.4.1.9.4.2 15.0.3 ~~15.1.5.5~~ ~~15.3.3.5~~ ~~15.4.8.5~~ ~~15.6.2.5~~ ~~15.6.3.5~~ ~~15.6.5.5~~ ~~15.7.4~~ CTS-01144 CTS-01144
1.184	Decommissioning of Nuclear Power Reactors	Revision 0 July 2000	Not applicable (CPNPP Units 3 and 4 COLA is an application for new units. RG refers to decommissioning of an existing plant.)	N/A
1.185	Standard Format and Content for Post-Shutdown Decommissioning Activities Report	Revision 0 July 2000	Not applicable (CPNPP Units 3 and 4 COLA is an application for new units. RG refers to decommissioning activities for an existing plant.)	N/A

Table 1.9-201 (Sheet 12 of 12)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
1.196	Control Room Habitability at Light-Water Nuclear Power Reactors	Revision 1 January 2007	Conformance	2.3.4 6.4 ~~9.4.1~~ COLA Part 4	CTS-01144
1.197	Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors	Revision 0 May 2003	Conformance	~~6.4~~ COLA Part 4	CTS-01144
1.198	Procedures and Criteria for Assessing Seismic Soil Liquefaction at Nuclear Power Plant Sites	Revision 0 November 2003	Conformance	2.5.4	
1.202	Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors	Revision 0 February 2005	Not applicable (Application for CPNPP Units 3 and 4 is for new units. RG applies to activities that occur during decommissioning.)	N/A	
1.205	Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants	Revision 0 May 2006	Not applicable (Risk informed performance based fire protection is not used.)	N/A	
1.206	Combined License Applications for Nuclear Power Plants (LWR Edition)	Revision 0 June 2007	Conformance with exceptions (The guidance for referencing an early site permit and passive advanced light-water reactor [ALWR] plant is not applicable.)	All chapters and appendices	
1.208	A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion	Revision 0 March 2007	Conformance	2.5.2 3.7	

CP COL 1.9(1)

Table 1.9-203 (Sheet 1 of 3)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 8 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
8.2	Guide for Administrative Practices in Radiation Monitoring	Revision 0 February 1973	Conformance	12.1.3 ~~12.3.4~~	CTS-01144
8.4	Direct-Reading and Indirect-Reading Pocket Dosimeters	Revision 0 February 1973	Conformance	12.1.3	
8.5	Criticality and Other Interior Evacuation Signals	Revision 1 March 1981	Conformance	~~12.1~~N/A	CTS-01144
8.6	Standard Test Procedure for Geiger-Muller Counters	Revision 0 May 1973	Conformance	12.1.3	
8.7	Instructions for Recording and Reporting Occupational Radiation Exposure Data	Revision 2 November 2005	Conformance	12.1.3	
8.8	Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations Will Be as Low as Is Reasonably Achievable	Revision 3 June 1978	Conformance	~~3.7.4.2~~ 11.3.1 11.4.1 11.4.2 12.1.1.3.2 ~~12.1.2~~ 12.2.1.1.10 12.3.1 ~~12.3.2.1~~ 12.3.2.2 ~~12.3.3.3~~ ~~12.3.4~~	CTS-01144 CTS-01144 CTS-01144 CTS-01144

Table 1.9-203 (Sheet 2 of 3)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 8 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section	
8.9	Acceptable Concepts, Models, Equations, and Assumptions for a Bioassay Program	Revision 1 July 1993	Conformance	12.1.3	
8.10	Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Is Reasonably Achievable	Revision 1-R May 1977	Conformance	12.1.1.3.3 ~~12.2.1.1.10~~	CTS-01144
8.13	Instruction Concerning Prenatal Radiation Exposure	Revision 3 June 1999	Conformance	12.1.3	
8.15	Acceptable Programs for Respiratory Protection	Revision 1 October 1999	Conformance	12.1.3	
8.25	Air Sampling in the Workplace	Revision 1 June 1992	Conformance	12.1.3	
8.27	Radiation Protection Training for Personnel at Light-Water-Cooled Nuclear Power Plants	Revision 0 March 1981	Conformance	12.1.3	
8.28	Audible-Alarm Dosimeters	Revision 0 August 1981	Conformance	12.1.3	
8.29	Instruction Concerning Risks from Occupational Radiation Exposure	Revision 1 February 1996	Conformance	12.1.3	

Table 1.9-203 (Sheet 3 of 3)

Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 8 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/ Section
8.34	Monitoring Criteria and Methods To Calculate Occupational Radiation Doses	Revision 0 July 1992	Conformance	12.1.3
8.35	Planned Special Exposures	Revision 0 June 1992	Conformance	12.1.3
8.36	Radiation Dose to the Embryo/Fetus	Revision 0 July 1992	Conformance	12.1.3
8.38	Control of Access to High and Very High Radiation Areas of Nuclear Plants	Revision 1 May 2006	Conformance	12.1.3 ~~12.3.1.2.1.2~~

CTS-01144

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
RCOL2_02.03.01-9	Table 2.0-1R (Sheet 2 of 12)	2.0.3	Response to RAI No. 155 Luminant Letter no.TXNB-10042 Date 6/7/2010	Site specific wind speed information has been corrected from 90 mph to 96 mph	-
RCOL2_02.03.01-10	2.3.1.2.1	2.3-10 2.3-11	Response to RAI No. 155 Luminant Letter no.TXNB-10042 Date 6/7/2010	Information on extreme weather conditions was added to the text.	-
RCOL2_02.0 3.01-10	2.3.3.1	2.3-38 2.3-39	Response to RAI No. 157 Luminant Letter no.TXNB-10042 Date 6/7/2010	Added a discussion to clarify the humidity at the CPNPP site.	-
RCOL2_02.0 3.03-10	Table 2.3-351	2.3-300	Response to RAI No. 157 Luminant Letter no.TXNB-10042 Date 6/7/2010	Added table to summarize the Monthly average humidity.	-
RCOL2_02.0 3.03-10	Figure 2.3-383 Through 2.3-386	-	Response to RAI No. 157 Luminant Letter no.TXNB-10042 Date 6/7/2010	Added figures on humidity between different sites including CPNPP	-
RCOL2_02.0 3.03-11	Table 2.3-332	2.3-245	Response to RAI No. 157 Luminant Letter no.TXNB-10042 Date 6/7/2010	Corrected table value unit.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.03.03-12	2.3.3.1	2.3-39	Response to RAI No. 157 Luminant Letter no.TXNB-10042 Date 6/7/2010	Added information on Unit 1 and 2 meteorological program.	-
RCOL2_02.03.03-13	2.3.3.1	2.3-37	Response to RAI No. 157 Luminant Letter no.TXNB-10042 Date 6/7/2010	Added information on Meteorological instrumentation for Unit 1 and 2.	-
RCOL2_02.03.05-3	2.3.5.2.1	2.3-47 2.3-48	Response to RAI No. 160 Luminant Letter no.TXNB-10042 Date 6/7/2010	Added information on normal effluent release atmospheric dispersion evaluations at CPNPP.	-
RCOL2_02.03.05-4	2.3.5	2.3-51	Response to RAI No. 160 Luminant Letter no.TXNB-10042 Date 6/7/2010	Removed information on *x*/Q.	-
RCOL2_02.03.04-9	Table 2.0-1R	2.0-13 through 2.0-15	Response to RAI No 158 Luminant letter TXNB-10048 Date 6/25/2010	Added *x*/Q information for TSC HVAC intake and inleak	-
RCOL2_02.03.04-12	2.3.4.3	2.3-46	Response to RAI No 158 Luminant letter TXNB-10048 Date 6/25/2010	Added *x*/Q information for Control Room HVAC	-
RCOL2_02.03.04-10	Table 2.3-338	2.3-257	Response to RAI No 158 Luminant letter TXNB-10048 Date 6/25/2010	Revised table information on release heights	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.03.02-04	2.3.2.2.4	2.3-35 2.3-36	Response to RAI No 156 Luminant letter TXNB-10048 Date 6/25/2010	Revised text to be consistent with revisions and corrections made to TXUT-001-ER-5.3-CALC-005, Rev. 3.	-
RCOL2_02.03.02-04	Tables 2.3-319 through 2.3-331	2.3-215 2.3-216 2.3-227 2.3-231 2.3-232 2.3-233 2.3-237 2.3-238 2.3-239 2.3-243 2.3-244 2.3-245	Response to RAI No 156 Luminant letter TXNB-10048 Date 6/25/2010	Revised text to be consistent with revisions and corrections made to TXUT-001-ER-5.3-CALC-005, Rev. 3.	-
RCOL2_02.03.02-04	Figures 2.3-372 through 2.3-379	-	Response to RAI No 157 Luminant letter TXNB-10048 Date 6/25/2010	Revised text to be consistent with revisions and corrections made to TXUT-001-ER-5.3-CALC-005.	-
CTS-01105	2.3.5.2.1	2.3-46 [2.3-50]	Access change to SCR	Revised text to reflect the inclusion of receptor locations on Squaw Creek Reservoir (SCR).	3
CTS-01105	Table 2.3-336	2.3-237 [2.3-252]	Access change to SCR	Revised table to reflect the inclusion of receptor locations on SCR.	3
CTS-01105	Table 2.3-348 (Sheet 14 of 15) (Sheet 15 of 5)	2.3-281 [2.3-297] [2.3-298]	Access change to SCR	Revised table to reflect the inclusion of SCR.	3

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSA R T/R
CTS-01105	Table 2.3-350	2.3-283 [2.3-299]	Access change to SCR	Revised table to reflect the inclusion of SCR.	3
RCOL2_19-13	2.3.1.2.2	2.3- 11 [2.3-13]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added the formula provided by Kaplan and Demaria on calculating the tropical cyclone wind speed after landfall with a correction factor accounting for inland distance and a prediction for the upper bound of possible hurricane wind speed at the CPNPP site.	-
RCOL2_03 .08.04-72	Table 2.0-1R (Sheet 10 and 11 of 14)	2.0-11 2.0-12	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised site Specific FIRS information due to RAI response	-
RCOL2_03 .08.04-63	2.5.1.2.5.2 2.5.2.5 2.5.2.6.2 2.5.4 2.5.4.3 2.5.4.4.2.1 2.5.4.7.4 2.5.4.8	2.5-56 2.5-118 2.5-129 2.5-140 2.5-179 2.5-186 2.5-207 2.5-208 2.5-209	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Deleted any mention of Seismic Category I shallow embedded duct banks	-
RCOL2_03 .08.04-72	2.5.2.6.1.1 2.5.2.6.1.2 2.5.2.6.2	2.5-126 2.5-127 2.5-128 2.5-130 2.5-131	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised site Specific FIRS information due to RAI response	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03 .08.04-72	Table 2.5.2-236	2.5-355	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised site Specific FIRS information due to RAI response	-
RCOL2_03 .08.04-72	Table 2.5.2-237	2.5-356 2.5-357 2.5-358	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised GMRS information due to RAI response	-
RCOL2_03 .08.04-72	Figure 2.5.2-247 Through 2.5.2-252 Figure 2.5.2-257 and 2.5.2-258	-	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised site Specific FIRS information due to RAI response	-
RCOL2_02.04.01-6	2.4.1.1	2.4-3	Response to RAI No 138 Luminant letter TXNB-10052 Date 7/16/2010	Revised FSAR to clarify how flooding at the site and Brazos river were factored into the site flooding conditions.	-
RCOL2_02.04.01-6	2.4.1.2	2.4-4 2.4-5 2.4-6	Response to RAI No 138 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to elaborate on contributing and non-contributing watersheds.	-
RCOL2_02.04.01-6	2.4.1.2	2.4-6 2.4-7	Response to RAI No 138 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to elaborate on dam failures	-
RCOL2_02.04.01-7	2.4.1.2	2.4-7 2.4-8	Response to RAI No 138 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to elaborate on dam failures	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.01-6	2.4.1.2.2	2.4-12	Response to RAI No 138 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to elaborate on dam failures	-
RCOL2_02.04.04-5	2.4.4	2.4-34 2.4-35	Response to RAI No 140 Luminant letter TXNB-10052 Date 7/16/2010	Revised to provide clarification on how upstream dams are evaluated.	-
RCOL2_02.04.04-5	2.4.4.1	2.4-35 Through 2.4-42	Response to RAI No 140 Luminant letter TXNB-10052 Date 7/16/2010	Revised to provide qualitative assessment of dam failure.	-
RCOL2_02.04.04-6 RCOL2_02.04.04-7	2.4.4.1	2.4-42	Response to RAI No 140 Luminant letter TXNB-10052 Date 7/16/2010	Revised to provide wind set up analysis.	-
RCOL2_02.04.04-7	2.4.4.1	2.4-43 Through 2.4-50	Response to RAI No 140 Luminant letter TXNB-10052 Date 7/16/2010	Revised to provide wind set up analysis.	-
RCOL2_02.04.04-5	2.4.4.1	2.4-50 2.4-51 2.4-106 2.4-107	Response to RAI No 140 Luminant letter TXNB-10052 Date 7/16/2010	Removed former assumptions for the dam failure analysis and added appropriate references.	-
RCOL2_02.04.04-7	2.4.4.3	2.4-53 2.4-54 2.4-106 2.4-107	Response to RAI No 140 Luminant letter TXNB-10052 Date 7/16/2010	Revised to provide wind set up analysis and added appropriate references.	-
RCOL2_02.04.04-7	Figure 2.4-202 Figure 2.4-203	2.4-53 2.4-54 2.4-106 2.4-107	Response to RAI No 140 Luminant letter TXNB-10052 Date 7/16/2010	Revised figures to reflect clarification and revisions provided in the RAI response.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.04-5	Table 2.4-201	2.4-149 Through 2.4-156	Response to RAI No 140 Luminant letter TXNB-10052 Date 7/16/2010	Added a table to summarize dam information.	-
RCOL2_02.04.02-2	2.4.1.2.4	2.0-10	Response to RAI No 139 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to describe the conservative and bounding nature of the probable maximum flood analysis.	-
RCOL2_02.04.02-2	2.4.2.3	2.4-15 2.4-16 2.4-17 2.4-19 2.4-20 2.4-21	Response to RAI No 139 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to describe the conservative and bounding nature of the probable maximum flood analysis.	-
RCOL2_02.04.02-2	Table 2.4.11-202	2.4-111	Response to RAI No 139 Luminant letter TXNB-10052 Date 7/16/2010	Revised table to reflect the revised analysis.	-
RCOL2_02.04.03-5	Table 2.0-1R	2.0-10	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised maximum flood (or tsunami) level for SCR to 793.66 ft msl and to 820.90 ft msl for local intense precipitation at Units 3 and 4.	-
RCOL2_02.04.03-5	2.4.3	2.4-25	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to address the RAI response.	-
RCOL2_02.04.03-5	2.4.3.1	2.4-25 2.4-26 2.4-27	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to describe Basins as described in the RAI response.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.03-5	2.4.3.2	2.4-27	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to describe Basins as described in the RAI response.	-
RCOL2_02.04.03-5	2.4.3.3	2.4-28 2.4-29 2.4-30	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to describe flooding conditions as described in the RAI response.	-
RCOL2_02.04.03-5	2.4.3.4	2.4-31	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to describe flooding conditions as described in the RAI response.	-
RCOL2_02.04.03-5	2.4.3.5	2.4-31 2.4-32	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to describe flooding conditions as described in the RAI response.	-
RCOL2_02.04.03-5	2.4.3.6	2.4-32 2.4-33	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised subsection to describe flooding conditions as described in the RAI response.	-
RCOL2_02.04.03-5	2.4.16	2.4-107	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Added reference for revisions made to FSAR to support RAI response.	-
RCOL2_02.04.03-5	Table 2.4.3-203	2.4-137 2.4 -138 2.4-139	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised table to reflect Basin 2 incremental PMP estimates.	-
RCOL2_02.04.03-5	Table 2.4.3-205	2.4-141 2.4-142 2.4-143	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised table to reflect incremental PMP estimates for Paluxy River Watershed Subbasin.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.03-5	Table 2.4.3-206	2.4-144	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Removed table as the information is no longer used/supported in the text.	-
RCOL2_02.04.03-5	Table 2.4.3-207	2.4-145	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised watershed subbasin characteristics to support the RAI response.	-
RCOL2_02.04.03-5	Table 2.4.3-208	2.4-146	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Added new table to summarize SCR Watershed basin 1.6 hour to support RAI response.	-
RCOL2_02.04.03-5	Table 2.4.3-209	2.4-147	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Added new table to summarize SCR Sub-basin 1 hour to support RAI response.	-
RCOL2_02.04.03-5	Table 2.4.3-210	2.4-147	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Added new table to summarize Synder's Unit Hydrograph results to support RAI response.	-
RCOL2_02.04.03-5	Figures 2.4.3-203 through 2.4.3-209	-	Response to RAI No 143 Luminant letter TXNB-10052 Date 7/16/2010	Revised figure to reflect revisions to the PMF analysis.	-
RCOL2_02.04.05-6	2.4.5	2.4-56 2.4-57	Response to RAI No 144 Luminant letter TXNB-10060 Date 8/26/2010	Revised subsection to describe the mechanisms that could result in a conservative estimate of landslide induced seiches.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.05-6	Figures 2.5.4-201 2.5.4-202	-	Response to RAI No 144 Luminant letter TXNB-10060 Date 8/26/2010	Added figures to depict the conceptual model used to show mechanisms that could result in a conservative estimate of landslide induced seiches.	-
RCOL2_02.04.05-6	Table 2.4.5-201	2.4-165	Response to RAI No 144 Luminant letter TXNB-10060 Date 8/26/2010	Added table to describe the slope geometry for SCR shoreline.	-
RCOL2_02.04.05-6	Table 2.4.5-202	2.4-166 2.4-167	Response to RAI No 144 Luminant letter TXNB-10060 Date 8/26/2010	Added table to describe the SCR slope line shoreline analysis.	-
RCOL2_02.04.05-6	Table 2.4.5-203	2.4-168 2.4-169	Response to RAI No 144 Luminant letter TXNB-10060 Date 8/26/2010	Added table summarize the SCR slope stability analysis for extreme worse case.	-
RCOL2_02.04.05-7	2.4.5	2.4-55	Response to RAI No 144 Luminant letter TXNB-10060 Date 8/26/2010	Revised subsection to describe conservative comparison to Barberopoulou’s publication.	-
RCOL2_02.04.05-7	2.4.16	2.4-107	Response to RAI No 144 Luminant letter TXNB-10060 Date 8/26/2010	Added references for new sources cited in revision for Subsection 2.4.5.	-
RCOL2_02.04.12-9, 13, 14, and 15	2.4.12.2.4	2.4-75 2.4-76 2.4-77 2.4-78	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised subsection to clarify monitoring well information and groundwater elevation data.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.12-9, 13, 14, and 15	2.4.12.3	2.4-80 2.4-81	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised subsection to describe conservative groundwater pathway travel time assumption.	-
RCOL2_02.04.12-9, 13, 14, and 15	2.4.12.3.1	2.4-82 2.4-83 2.4-84 2.4-85 2.4-87	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised subsection to describe the possible pathway scenarios and site specific factors considered.	-
RCOL2_02.04.12-9, 13, 14, and 15	Table 2.4.12-211	2.4-216 2.4-217 2.4-218 2.4-219 2.4-220	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised table to provide summary of pathway conditions as described in the revised model.	-
RCOL2_02.04.12-9, 13, 14, and 15	Figure 2.4.12-210 (sheet 1 through 4 of 12)	-	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised figure sheet numbers to show only the potentiometric surface for groundwater in the hydrogeologic Zone A.	-
RCOL2_02.04.12-9, 13, 14, and 15	Figure 2.4.12-210 (Sheet 1 through 12 of 12)	-	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Removed groundwater gradient maps depicting the potentiometric surface in the hydrogeologic zones B and C.	-
RCOL2_02.04.12-9, 13, 14, and 15	Figure 2.4.12-212	-	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised figure to depict the possible flow pathways.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.12-9, 13, 14, and 15	Figure 2.4.12-213	-	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised figure to depict post construction release flow path #1 described in the 2.4.12 conceptual model.	-
RCOL2_02.04.12-9, 13, 14, and 15	Figure 2.4.12-214	-	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised figure to depict post construction release flow path #2 described in the 2.4.12 conceptual model.	-
RCOL2_02.04.12-9	2.5.1.2.5.5	2.5-58	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised subsection to describe groundwater consistent with the model described in revised subsection 2.4.12.	-
RCOL2_02.04.12-9	Figure 2.5.5-204	-	Response to RAI No 147 Luminant letter TXNB-10060 Date 8/26/2010	Revised figure to depict the current grading and drainage plan.	-
RCOL2_02.04.13-7	2.4.13.1	2.4-89	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Clarified that the source term concentrations utilized in the tank failure analysis are from the BTP 11-6 guidance.	-
CTS-01142	2.4.13.1	2.4-89	Erratum	Deleted dash between reactor and coolant.	-
RCOL2_02.04.13-7	2.4.13.1	2.4-90	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Revised the discussion to indicate that the source term concentration was generated using the RATAF code and deleted the reference to	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				dilution factor of 4.4E10 gal.	
RCOL2_02.04.13-7	2.4.13.1	2.4-91	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Revised text to indicate that all radionuclides generated from the RATAF code were evaluated in the analysis, not only Cs-134 and Cs-137.	-
RCOL2_02.04.12-7	2.4.13.2	2.4-91	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Revised subsection to reflect elimination of vertical pathway to Twin Mountains formation.	-
RCOL2_02.04.12-7	2.4.13.2	2.4-92	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Revised text to reflect RAI 147 changes on alternate pathways considered in analysis and to be consistent with 2.4.12.	-
CTS-01157	2.4.13.3	2.4-94	Erratum	Revised to reflect correct Figure number.	-
CTS-01158	2.4.13.3	2.4-94	Erratum	Removed the word ‘see’ from the figure reference to be consistent with the COLA format.	-
RCOL2_02.04.12-5	2.4.13.4	2.4-94	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Changed title of section for clarity.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.13-5	2.4.13.4	2.4-95	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added additional information to substantiate elimination of vertical pathway to Twin Mountains Formation.	-
CTS-01154	2.4.13.4	2.4-95	Erratum	Corrected reference to Subsection.	-
RCOL2_02.04.13-5	2.4.13.4	2.4-96	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added additional information to substantiate elimination of vertical pathway to Twin Mountains Formation.	-
RCOL2_02.04.13-7	2.4.13.5	2.4-96 2.4-97 2.4-98 2.4-99 2.4-100 2.4-101	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Revised subsection title and subsection to remove the previous discussion and add a new discussion regarding the tank failure anlaysis.	-
RCOL2_02.04.13-7	2.4.13.5.1	2.4-101 2.4-102 2.4-103	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added new subsection entitled Bounding Unit 3 Pathway Scenario.	-
RCOL2_02.04.13-7	2.4.13.5.2	2.4-103 2.4-104 2.4-105	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added new subsection entitled Modeling Equations Used in Tank Failure Analysis.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.13-7	2.4.13.5.3	2.4-105 2.4-106	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added new subsection entitled Infiltration Area of Existing Fill Groundwater and Effect on Volumetric Flow Rate into SCR.	-
RCOL2_02.04.13-7	2.4.13.5.4	2.4-107	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added new subsection entitled Dilution Effect of the Existing Fill Groundwater.	-
RCOL2_02.04.13-7	2.4.13.5.5	2.4-107 2.4-108	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added new subsection entitled Effects of Circulating Water Pump Operation on Mixing and Dilution.	-
RCOL2_02.04.13-7	2.4.13.5.6	2.4-108 2.4-109 2.4-110	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added new subsection entitled Dilution Effect and Mixing of SCR	-
RCOL2_02.04.13-7	2.4.13.5.7	2.4-110 2.4-111	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added new subsection entitled Summary to summarize the overall tank failure analysis.	-
RCOL2_02.04.13-7	2.4.13.6	2.4-111	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Deleted subsection to reflect new analysis and results.	-
RCOL2_02.04.13-7	2.4.13.7	2.4.112 2.4.113	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Deleted subsection to reflect new analysis and results.	-
RCOL2_02.04.13-7	References	2.4-123	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added references used in the new analysis described in the revised text.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.04.13-7	Tables 2.4.13-202 2.4.13-203 2.4.13-204 2.4.13-205 2.4.13-206 2.4.13-207 2.4.13-208 2.4.13-209	2.4-223 through 2.4-237	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Added new tables to reflect new tank failure analysis.	-
RCOL2_02.04.13-7	Figures 2.4-12-212 2.4-12-213	-	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	Revised figures eliminate previous analysis cross sections and show stormwater pond east of Unit 3.	-
RCOL2_02.04.13-7	Figures 2.4.13-201 2.4.13-202 2.4.13-203 2.4.13-204 2.4.13-205 2.4.13-206 2.4.13-207	-	Response to RAI No 145 Luminant letter TXNB-10063 Date 9/16/2010	New figures added to reflect new subsection 2.4.13.5 discussion.	-
RCOL2_02 .03.01-6 S01	Table 2.0-1R (Sheet 2 of 15) Table 2.3-202 (Sheet 4 of 4)	2.0-3 2.3-61	Supplemental Response to RAI No. 155 Luminant letter TXNB-10066 Date 9/29/2010	100 yr temperatures were added to the tables	-
RCOL2_02 .03.01-6 S01	2.3.7	2.3-55	Supplemental Response to RAI No. 155 Luminant letter TXNB-10066 Date 9/29/2010	New reference added	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_02.03.02-04 S01	2.3.2.2.4	2.3-35 2.3-36	Supplemental Response to RAI No 156 Luminant letter TXNB-10066 Date 9/29/2010	Revised text to be consistent with revisions and corrections made to TXUT-001-ER-5.3-CALC-005, Rev. 4.	-
RCOL2_02.03.02-04 S01	Tables 2.3-319 through Table 2.3-331	2.3-215 through 2.3-227 2.3-231 through 2.3-233 2.3-237 through 2.3-239 2.3-243 through 2.3-245 2.3-249 through 2.3-252	Supplemental Response to RAI No 156 Luminant letter TXNB-10066 Date 9/29/2010	Revised text to be consistent with revisions and corrections made to TXUT-001-ER-5.3-CALC-005, Rev. 4.	-
RCOL2_02.03.02-04 S01	Figures 2.3-372 through Figure 2.3-379	-	Supplemental Response to RAI No 156 Luminant letter TXNB-10066 Date 9/29/2010	Revised text to be consistent with revisions and corrections made to TXUT-001-ER-5.3-CALC-005, Rev. 3.	-
CTS-01140	2.1 2.1.4	2.1-1 2.1-11	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4
CTS-01143	2.5.3.4	2.5-130 [2.5-136]	Erratum	Added reference to Subsection 2.5.1.2.4.2	4

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01143	Table 2.5.4-202	2.5-367 [2.5-369]	Erratum	Corrected Pit A dimension of 68 ft. to 55 ft.	4

*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.

2.1 GEOGRAPHY AND DEMOGRAPHY

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

~~CP~~STD COL 2.1(1) Replace the content of DCD Section 2.1 with the following. CTS-01140

This section of the Final Safety Analysis Report (FSAR) provides information regarding the site location and description including the distribution of infrastructure, natural features, and population in the ~~Comanche Peak Nuclear Power Plant (CPNPP)~~plant area. The discussion below is provided to address the guidance in NUREG-0800 (Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants) and Regulatory Guide 1.206 (Combined License Applications for Nuclear Power Plants [LWR Edition]). Radius distances defined by NUREG-1555 (Standard Review Plans for Environmental Reviews for Nuclear Power Plants) are used for the population analysis, rather than the distances described in RG 1.206 as an alternative method. The alternative method is used to ensure consistency of the population data between the FSAR and Environmental Report (ER). No other exceptions to the regulatory documents noted or alternative methods are used in the development of this section. CTS-01140

2.1.1 Site Location and Description

CP COL 2.1(1) Replace the content of DCD Subsection 2.1.1 with the following.

The following subsection presents site location and description information, including a site map and a boundary for establishing effluent release limits.

2.1.1.1 Specification of Location

Luminant Generation Company LLC (Luminant) proposes to construct and operate two MHI US-APWR reactors at their 7950-ac CPNPP site. The two reactors are referred to as CPNPP Units 3 and 4. The units and supporting infrastructure are sited in the area delineated in Figure 2.1-201.

The CPNPP site is located in Hood and Somervell counties, approximately 15 km (9.6 mi) south of the City of Granbury (Figure 2.1-202). The entire 80-km (50-mi) region is within the State of Texas. The CPNPP site is approximately 39 km (24 mi) west of Cleburne, 52 km (32 mi) west of Burleson, and 65 km (40 mi) southwest of downtown Fort Worth (Figure 2.1-203). The CPNPP site is situated on a peninsula located on the southwestern bank of the Squaw Creek Reservoir (SCR). Prominent natural and manmade features, including rivers and lakes, state and county lines, and military and transportation facilities are illustrated in Figures 2.1-201, 202, 203, and 204. Industrial facilities within 5 mi of CPNPP are illustrated in Figure 2.2-201. There are no military facilities located in the CPNPP vicinity. Figure 2.1-202 illustrates the features within a 10-km (6-mi) radius of the distance from the reactor center point to the boundary of the LPZ, as required by NUREG-0800.

The transient population is not considered in these calculations because 10 CFR 100.3 defines a population center as “the distance from the reactor to the nearest boundary of a densely populated center containing more than about 25,000 residents.” Transient populations by nature are not considered to be a part of the resident population.

2.1.3.6 Population Density

The projected permanent population of the CPNPP region is added to the projected transient population producing the total population. These values are plotted as a function of distance from the center point on Figure 2.1-210 and Figure 2.1-211 for the first year of operation (2016) and about five years after the first year of operation (2021), respectively. Illustrated on Figure 2.1-210 and Figure 2.1-211 is the cumulative population that would result from a uniform population density of 190 people per sq km (500 people per sq mi). The figures show that the total population density for both 2016 and 2021 does not exceed 190 people per sq km (500 people per sq mi).

The projected permanent population for 2016 is approximately 1.8 million and the projected transient population is 387,631. Transient population is projected using a ratio generated from transient sector population divided by the U.S. Census 2000 population. The projected permanent population for both 2016 and 2056 are multiplied by this ratio to calculate projected transient population. Thus, the projected total population within an 80-km (50-mi) radius in 2016 is approximately 2.2 million. The total population density for the startup year is 106 people per sq km (274 people per sq mi).

The projected total population within an 80-km (50-mi) radius in 2021, about five years after the first year of operations for the plant, is approximately 2.5 million. This is the sum of the projected permanent population (2,012,825 people) and the projected transient population (440,453 people). The total population density is projected to be 121 people per sq km (312 people per sq mi).

2.1.4 Combined Licence Information

Replace the content of DCD Subsection 2.1.4 with the following.

CP COL 2.1(1)
STD COL 2.1(1)

2.1(1) *Geography and demography* CTS-01140

This COL item is addressed in Subsections 2.1.1, 2.1.2, and 2.1.3 and the associated tables and figures.

2.1.5 References

2.5.3.3 Correlation of Earthquakes with Capable Tectonic Sources

There is no seismicity within the 25-mi-radius site vicinity and therefore there is no spatial correlation of earthquake epicenters with known or postulated faults, other tectonic features, or other geomorphic features (Figure 2.5.2-201). As part of this COL application, the EPRI earthquake catalog was updated to incorporate southern United States earthquakes that occurred between 1985 and 2006 (see Subsection 2.5.2.1.2. The updated earthquake catalog contains no earthquakes with body wave magnitude (m_b) ≥3.0 with more than 50 mi of the CPNPP Units 3 and 4 site.

2.5.3.4 Ages of Most Recent Deformation

No faults or tectonic deformation has been identified at the surface within 25 mi of the CPNPP Units 3 and 4 site. The region in fact has experienced only sedimentation and erosion since the Permian Period, the last time of faulting or uplift in the area. The only disruptions to completely planar bedding are the two localized, probably sedimentary, features described in Subsection 2.5.1.2.4.1 and Subsection 2.5.1.2.4.2. These features were most likely developed in the Cretaceous Period. CTS-01143

2.5.3.5 Relationship of Tectonic Structures in the Site Area to Regional Tectonic Sources

There are no tectonic bedrock faults within the 5-mi-radius site area. Consequently, it is concluded that there is no correlation of geologic structures in the site area to regional, capable tectonic sources.

2.5.3.6 Characterization of Capable Tectonic Sources

On the basis of data presented in Subsection 2.5.1 and previous discussions in Subsection 2.5.3.4, there are no capable tectonic sources within 5 mi of the CPNPP Units 3 and 4 site.

2.5.3.7 Designation of Zones of Quaternary Deformation in the Site Region

There are no zones of Quaternary deformation associated with tectonic faults requiring detailed investigation within the 5-mi-radius site area. A review and interpretation of aerial photography and available geotechnical boring logs, coupled with aerial and field reconnaissance, identified no possible Quaternary deformation in the site area.

2.5.3.8 Potential for Tectonic or Non-Tectonic Deformation at the Site

The potential for surface deformation aside from faulting was also investigated at the CPNPP site. This included tectonic non-fault deformation, such as folding, and non-tectonic deformation such as glacial rebound, ground collapse, volcanic

CP COL 2.5(1)

Table 2.5.4-202
Summary of Test Pits

Test Pit No.	East and West Coordinates			Orientation	Depth (ft)	Dimensions (ft)
	Northing	Easting	Elevation (ft)			
Test Pit A	6,793,760	2,187,762	822.48	N86W	5	~~68~~55 x 26
	6,793,773	2,187,695	825.83			
Test Pit B	6,793,618	2,187,691	826.65	N71W	9.5	41 x 9
	6,793,631	2,187,646	828.55			
Test Pit C	6,793,417	2,187,625	826.14	N75W	12	42.4 x 4
	6,793,427	2,187,585	828.14			

CTS-01143

Notes: Coordinate System: US State Plane 1983
Zone: Texas North Central 4202
Vertical Datum: NAVD88

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
RCOL2_03.08.04-61	3.8.4.1.3 3.8.4.1.3.2	3.8-3 3.8-5	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added description to provide an alternate option to use waterproof joint sealants in lieu of expansion joints.	-
RCOL2_03.08.04-62	3MM.2	3MM-5	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added description to clarify acceleration applied to the PSFSV fuel tank for base slab design.	-
RCOL2_03.08.04-62	Table 3MM-5	3MM-12	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised note 2 to describe the method of calculating acceleration applied to the tanks for basemat design.	-
RCOL2_03.08.04-62	Table 3MM-6	3MM-13	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised values of maximum component forces and moments in the “basemat” row of Table 3MM-6.	-
RCOL2_03.08.04-63	3.3.1.2 3.3.2.2.2 3.3.2.2.4 3.7.2.4.1 3.8.4.1.3.4	3.3-2 3.3-3 3.7-9 3.8-7	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Deleted any mention of Seismic Category I shallow embedded duct banks.	-
RCOL2_03.08.04-64	3.7.1.1	3.7-3	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised to clarify the description of site-specific SSE.	-
RCOL2_03.08.04-64	Table 3.7-201 Table 3.7-202 Figure 3.7-202 Figure 3.7-203	3.7-19 3.7-20 3.7-24 3.7-25	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised Table and Figure titles to include SSE in addition to FIRS.	-
RCOL2_03.08.04-65	3.8.4.4.3.1	3.8-9	Response to RAI No. 167 Luminant Letter	Deleted statement from 2nd paragraph “Since the support below the	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			no.TXNB-10057 Date 8/9/2010	structure (fill concrete and rock) will not exhibit long term settlement effects,"	
RCOL2_03.08.04-66	3KK.3	3KK-9	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added sentence to 7th paragraph confirming the seismic demands calculated using the ANSYS model exceed the seismic demands calculated using the SASSI analysis.	-
RCOL2_03.08.04-68	3.8.4.4.3.2	3.8-10	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Revised 2nd paragraph to change "two step" to "multi-step" analysis.	-
RCOL2_03.08.04-69	3.8.4.4.3.1 3.8.4.4.3.2 3.8.4.4.3.3	3.8-9 3.8-11 3.8-12	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added explanation "the same stiffness is applied to all springs" to each applicable section.	-
RCOL2_03.08.04-70	Table 3KK-9	3KK-19	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added Note 4 in Table 3KK-9 to address modal participation factors.	-
RCOL2_03.08.04-72	Table 3.7-201 Table 3.7-202	3.7-19 3.7-20	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added control point rows "E" to both tables which correspond to a frequency of 0.1 Hz.	-
RCOL2_03.08.04-72	Figure 3.7-201 (Sheet 1 of 2)	3.7-22	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Replaced the GMRS and FIRS spectra which consisted of 7 frequencies with smooth GMRS and FIRS spectra consisting of 39 frequencies. Extended plot of nominal horizontal GMRS and FIRS to intercept the frequency axis at corresponding min points.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_03.08.04-72	Figure 3.7-202 Figure 3.7-203	3.7-24 3.7-25	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added control point “E” to the plot of each site-specific SSE and FIRS.	-
RCOL2_03.08.04-78	3LL.1	3LL-1	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added statement to address wave passage effects on the seismic design of the tunnel.	-
RCOL2_03.08.04-81	3MM.2	3MM-5	Response to RAI No. 167 Luminant Letter no.TXNB-10057 Date 8/9/2010	Added paragraph to describe how fuel tank flexibility is accounted for in the base slab design.	-
CTS-01148	3.1.4.16.1	3.1-1	Correction	Changed description of location from “fourth and fifth” sentences to “third, fourth, and fifth” sentences	4
CTS-01153	Table 3.2-201 (Sheet 1 of 3) Table 3D-201 (Sheet 10 of 10)	3.2-3 3D-11	Consistency Corrections	Changed valve Tag Number to “ESW-HCV-010” “ESW-HCV-011” “ESW-HCV-012” “ESW-HCV-013”	4
CTS-01149	Table 3.2-201 (Sheet 2 of 3)	3.2-4	Editorial and Clarification	Removed “sink” from description “UHS sink transfer…” in 1st column, 6th row; added comma to 3rd column, 6th row; and added “ESWPT” with a comma to 3rd column, 7th row	4
CTS-01140	3.3.2.3 3.3.3 3.4.1.2 3.4.1.4 3.4.2 3.4.3 3.5.1.1.4 3.5.4 3.6.1.3	3.3-2 [3.3-3] 3.4-1 3.4-2 3.4-3 3.5-1 [3.5-2] 3.5-4 [3.5-5] 3.6-1	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
	3.6.2.1 3.7.2.8 3.7.5 3.8.1.6 3.8.4.3.7.1 3.8.4.7 3.8.5.1 3.8.5.4.4 3.8.6 3.9.3.3.1 3.9.6.2 3.9.9 3.10.4.1 3.10.5 3.11.1.1 3.11.1.2 3.11.3 Through 3.11.7 Appendix 3D Table 3D-201	3.6-2 3.7-10 [3.7-11] 3.7-13 [3.7-14] 3.8-1 3.8-6 [3.8-8] 3.8-9 [3.8-13] 3.8-10 [3.8-14] 3.8-11 [3.8-15] 3.8-13 [3.8-16 through 3.8-18] 3.9-1 3.9-2 3.9-4 3.10-2 3.11-2 3.11-3 3.11-4 3D-1 through 3D-11			
CTS-01161	3.6.1.3	3.6-1	Clarification	Added the statement of “within the protective walls of the ESWPT and UHSRSs,” and “within these protective walls.” Also added a comma for punctuation.	4
CTS-01161	3.6.2.1	3.6-2	Clarification	Added the statement of “within the protective walls of the ESWPT and UHSRSs.” Also added descriptive clarifying statements	4

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				"As noted in Subsection 3.6.1.3, there", "moderate-energy piping", and replaced "failure" with "crack" in the 1st paragraph.	
MAP-03-028	Table 3.7.1-3R	3.7-15 [3.7-16]	Clarification	Clarified dimensions as distances between column lines of exterior wall and corrected Note 3.	4
CTS-01150	3.9.3.4.2.5 3.9.6.2 3.9.6.3	3.9-2	Editorial	Deleted "that" in 1st sentence on page 3.9-2 "…to assure that snubber functionality…"; replaced "frequency is" with "frequencies are" in 1st sentence of Section 3.9.6.2; replaced "type of testing and frequency…is" with "types of testing and frequencies…are" in 1st sentence of Section 3.9.6.	4
MAP-03-031	3.10	3.10-1	Clarification	Replaced "safety related and important to safety" with "seismic category I and II" in 3rd sentence; deleted period and added "the duration of" to 4th sentence; added "operational" to 5th sentence to improve sentence clarity	4
MAP-03-031	3.10.4.1	3.10-2	Consistency with MUAP-08015 Rev1. US-APWR Equipment Qualification Program	Deleted "Environmental" and added DCD reference "(DCD Reference 3.11-3)" to 1st sentence	4
CTS-01151	3.12.5.6	3.12-1	Clarification	Added "second sentence of the" to the description of location	4

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
MAP-03-031	3D	3D-1	Clarification	Deleted “US-APWR” from title “US-APWR EQUIPMENT QUALIFICATION…”	4
CTS-01152	3D	3D-1	Correction	Deleted “Add the following new table in DCD Appendix 3D” and added wording to correctly state the relationship between Table 3D-201 and DCD Table 3D-2	4

*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.

3.0 DESIGN OF STRUCTURES, SYSTEMS, COMPONENTS, AND EQUIPMENT

3.1 CONFORMANCE WITH NRC GENERAL DESIGN CRITERIA

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

3.1.4.16.1 Discussion

STD COL 3.1(1) Replace the third, fourth, and fifth sentences of the first paragraph in DCD Subsection 3.1.4.16.1 with the following. CTS-01148

These components have suitable inspection capability enhanced with appropriate layout features, as discussed in Section 9.2. The essential service water system (ESWS) and component cooling water system (CCWS) piping is arranged to permit access for inspection. Manholes, handholes, or inspection ports are provided for periodic inspection of system components. The integrity of underground piping is demonstrated by pressure and functional tests.

3.1.7 Combined License Information

Replace the content of DCD Subsection 3.1.7 with the following.

STD COL 3.1(1) ***3.1(1)*** *Design provisions for inspections*

This Combined License (COL) item is addressed in Subsection 3.1.4.16.1.

Table 3.2-201 (Sheet 1 of 3)

CP COL 3.2(4)
CP COL 3.2(5)

Classification of Site-Specific Mechanical and Fluid Systems, Components, and Equipment

System and Components	Equipment Class	Location	Quality Group	10 CFR 50 Appendix B (Reference 3.2-8)	Code and Standards[3]	Seismic Category	Notes
1. ESWS							
Basin blowdown line piping and valves from and excluding essential service water supply header piping up to the following valves: Ultimate heat sink (UHS) basin blowdown control valves ESW-H~~VC~~CV-~~2000~~010, ~~2001~~011, ~~2002~~012, ~~2003~~013 UHS basin blowdown control bypass valves ESW-VLV-544A, B, C, D	3	ultimate heat sink related structures (UHSRS)	C	YES	3	I	RCOL2_03.02.01-2 CTS-01153
Essential service water (ESW) supply line piping connected to the fire protection system in the UHSRS, and valves from and excluding ESW supply header piping up to the following isolation valves: ESW-VLV-551A, B, C, D	3	UHSRS	C	YES	3	I	
ESW supply line piping connected to the fire protection system in the reactor building (R/B), and valves from and excluding ESW supply header piping up to the following isolation valves: ESW-VLV-552A, B, C, D	3	R/B	C	YES	3	I	

CP COL 3.2(4)
CP COL 3.2(5)

Table 3.2-201 (Sheet 2 of 3)

Classification of Site-Specific Mechanical and Fluid Systems, Components, and Equipment

System and Components	Equipment Class	Location	Quality Group	10 CFR 50 Appendix B (Reference 3.2-8)	Code and Standards(3)	Seismic Category	Notes
2. UHS							
UHS transfer pumps	3	UHSRS	C	YES	3	I	
UHS cooling tower fans	3	UHSRS	C	YES	5	I	
UHS basins	3	UHSRS	C	YES	3	I	
Transfer line piping and valves from UHS ~~sink~~ transfer pumps to basins	3	UHSRS, essential service water pipe tunnel (ESWPT)	C	YES	3	I	
ESW return line piping	3	UHSRS, ESWPT	C	YES	3	I	
UHS basin makeup piping and valves	9	UHSRS	NA	NA	5	Non-seismic (NS)	
3. UHS ESW pump house ventilation system							
ESW pump room exhaust fans	3	UHSRS	C	YES	5	I	
UHS transfer pump room exhaust fans	3	UHSRS	C	YES	5	I	
UHS ESW pump house supply and exhaust backdraft dampers	3	UHSRS	C	YES	5	I	
ESW pump room unit heaters	3	UHSRS	C	YES	5	I	
UHS transfer pump room unit heaters	3	UHSRS	C	YES	5	I	

CTS-01149
CTS-01149
RCOL2_09.02.05-2

of chases, which are unvented, are assessed for the full effects of tornado atmospheric differential pressure. RCOL2_03.03.02-4

3.3.2.2.4 Combined Tornado Effects

CP COL 3.3(2) Replace the first and second sentences of the last paragraph in DCD Subsection 3.3.2.2.4 with the following.

Site-specific seismic category I structures, i.e., the UHSRS and exposed portions of chases the ESWPT and PSFSVs, are designed for the same tornado loadings and combined tornado effects using the same methods for qualification described for standard plant SSCs. RCOL2_03.03.02-4 RCOL2_03.08.04-63

3.3.2.3 Effect of Failure of Structures or Components Not Designed for Tornado Loads

~~CP~~STD COL 3.3(3) Replace the last paragraph of DCD Subsection 3.3.2.3 with the following. CTS-01140

Other miscellaneous NS buildings and structures in the plant yard are located and/or anchored such that their failure will neither jeopardize safety-related SSCs nor generate missiles not bounded by those discussed in Subsection 3.5.1.4. Further, any site-specific or field routed safety-related SSCs in the plant yard are evaluated prior to their installation to determine if structural reinforcement and/or missile barriers are required to ensure their function and integrity.

3.3.3 Combined License Information

Replace the content of DCD Subsection 3.3.3 with the following.

CP COL 3.3(1) ***3.3(1)*** *Wind speed requirements*

This COL item is addressed in Subsection 3.3.1.1.

CP COL 3.3(2) ***3.3(2)*** *Tornado loadings and combined tornado effects*

This COL item is addressed in Subsection 3.3.2.2.4.

~~CP~~STD COL 3.3(3) ***3.3(3)*** *Structures not designed for tornado loads* CTS-01140

This COL item is addressed in Subsection 3.3.2.3.

CP COL 3.3(4) ***3.3(4)*** *Wind load design methods and importance factors*

3.4 WATER LEVEL (FLOOD) DESIGN

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

3.4.1.2 Flood Protection from External Sources

~~CP~~STD COL 3.4(1)

Replace the first sentence of the third paragraph in DCD Subsection 3.4.1.2 with the following. CTS-01140

Entrances to all ~~Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4~~ safety-related structures ~~on site~~ are above the design-basis flooding level (DBFL) listed in Section 2.4, and adequate sloped site grading and drainage prevents flooding caused by probable maximum precipitation (PMP) or postulated failure of non safety-related, non seismic storage tanks located on site. CTS-01140

CP COL 3.4(5)

Replace the fourth paragraph in DCD Subsection 3.4.1.2 with the following.

No site-specific flood protection measures such as levees, seawalls, floodwalls, site bulkheads, revetments, or breakwaters are applicable at CPNPP Units 3 and 4, since the plant is built above the DBFL and has adequate site grading. The lowest point of the structure foundation is above the groundwater elevation identified in Section 2.4, and therefore no permanent dewatering system is required.

CP COL 3.4(4)

Replace the seventh paragraph in DCD Subsection 3.4.1.2 with the following.

The lowest point of the structure foundation is above the groundwater elevation identified in Section 2.4. In addition, no intermittent head of water occurs from surface precipitation or groundwater due to the placement of course aggregate wrapped in geotextile filter fabric with perforated drainage pipe sloped to daylight to Squaw Creek Reservoir. Construction joints in the exterior walls and base mats are provided with water stops to prevent seepage of ground water. A dampproofing barrier treatment that resists the passage of ground water in the absence of hydrostatic pressure is therefore applied to all subgrade outer foundation walls in accordance with American Concrete Institute (ACI) 515.1R-79 (Reference 3.4-201). A cementitious membrane waterproofing is provided on the inside face of the UHS basin walls and foundation slab, including the UHS sump pit, to prevent water migration from the UHS basin into the subgrade.

~~CP~~STD COL 3.4(3)

Replace the last sentence in the ninth paragraph in DCD Subsection 3.4.1.2 with the following. CTS-01140

Site-specific potential sources of external flooding such as the cooling tower, service water piping, or circulating water piping are not located near structures containing safety-related SSCs, with the exception of piping entering plant structures. The CWS enters only within the T/B, and any postulated pipe break is prevented from back-flowing into the safety-related R/B by watertight separation. Postulated pipe breaks near structures are prevented from entering the structures by adequate sloped site grading and drainage.

3.4.1.4 Evaluation of External Flooding

~~CP~~STD COL 3.4(2)

Replace the last sentence in the last paragraph of DCD Subsection 3.4.1.4 with the following. CTS-01140

As discussed in ~~Chapter 2~~Section 2.4, the site-specific DBFL does not exceed the maximum flood level for the standard plant design. Therefore, there are no static and/or dynamic flooding forces beyond those considered in the standard plant design. CTS-01089

3.4.2 Analysis Procedures

~~CP~~STD COL 3.4(6)

Replace the last paragraph of DCD Subsection 3.4.2 with the following. CTS-01140

No site-specific physical models are used to predict prototype performance of hydraulic structures and systems, since there are no unusual design or configuration or design or operating bases involving thermal and erosion problems.

3.4.3 Combined License Information

Replace the content of DCD Subsection 3.4.3 with the following.

~~CP~~STD COL 3.4(1)

3.4(1) *Site-specific design of plant grading and drainage* CTS-01140

This COL item is addressed in Subsection 3.4.1.2.

~~CP~~STD COL 3.4(2)

3.4(2) *DBFL applicability to site* CTS-01140

This COL item is addressed in Subsection 3.4.1.4.

~~CP~~STD COL 3.4(3)

3.4(3) *Site-specific flooding hazards from engineered features* CTS-01140

This COL item is addressed in Subsection 3.4.1.2.

CP COL 3.4(4) ***3.4(4)*** *Additional ground water protection*

This COL item is addressed in Subsection 3.4.1.2.

CP COL 3.4(5) ***3.4(5)*** *DBFL and site-specific conditions*

This COL item is addressed in Subsection 3.4.1.2.

~~CP~~STD COL 3.4(6) ***3.4(6)*** *Physical models for performance of hydraulic structures and systems* CTS-01140

This COL item is addressed in Subsection 3.4.2.

3.4.4 References

Add the following reference after the last reference in DCD Subsection 3.4.4.

3.4-201 *A Guide to the Use of Waterproofing, Dampproofing, Protective, and Decorative Barrier Systems for Concrete,* ACI 515.1R-79, American Concrete Institute, Revised 1985.

3.5.1.1.4 Gravitational Missiles

~~CP~~STD COL 3.5(1) Replace the paragraph of DCD Subsection 3.5.1.1.4 with the following. CTS-01140

~~CPNPP Unit 3 and 4 p~~Procedures will be issued prior to fuel load in accordance with Subsection 13.5.2.2 to require unsecured equipment including portable pressurized gas cylinders, located inside or outside containment for maintenance or undergoing maintenance 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.

3.5.1.3.1 Geometry

CP COL 3.5(6) Replace the third paragraph of DCD Subsection 3.5.1.3.1.

The CPNPP site plan (Figure 1.2-1R) reflects the placement of CPNPP Units 3 and 4 in relation to existing Units 1 and 2. The location of CPNPP Units 3 and 4 is such that CPNPP Units 1 and 2 are outside the low-trajectory turbine missile strike zone inclined at 25 degrees to the turbine, and therefore no postulated low-trajectory turbine missiles affect CPNPP Units 1 and 2. Similarly, no postulated low trajectory turbine missiles from CPNPP Units 1 and 2 will affect CPNPP Units 3 and 4. The placement of CPNPP Units 3 and 4, however, does generate an unfavorable orientation, as defined in NUREG-0800, Section 3.5.1, of the turbine generator (T/G) in relationship with safety-related SSCs of the adjacent US-APWR Unit. (See Subsection 3.5.1.3.2 for impact to P_4).

3.5.1.3.2 Evaluation

CP COL 3.5(2) Replace the third paragraph of DCD Subsection 3.5.1.3.2 with the following.

Mathematically, $P_4 = P_1 \times P_2 \times P_3$, where RG 1.115 (Reference 3.5-6) considers an acceptable risk rate for P_4 as less than 10^{-7} per year. For unfavorably oriented T/Gs determined in Subsection 3.5.1.3, the product of P_2 and P_3 is estimated as 10^{-2} per year, which is a more conservative estimate than for a favorably oriented single unit. CPNPP Unit 3 and 4 procedures will be implemented 6 months prior to delivery of the T/G to require inspection intervals established in Technical Report, MUAP-07028-NP, “Probability of Missile Generation From Low Pressure Turbines” (Reference 3.5-17), and to require a turbine valve test frequency per Technical Report, MUAP-07029-NP, “Probabilistic Evaluation of Turbine Valve Test Frequency” (Reference 3.5-18), and other actions to maintain P_1 within

3.5.2 Structures, Systems, and Components to be Protected from Externally Generated Missiles

---

CP COL 3.5(5) Replace the second sentence in the second paragraph of DCD Subsection 3.5.2 with the following.

~~No~~As determined in FSAR Section 2.2, Subsection 3.5.1.5 and Subsection 3.5.1.6, no site-specific hazards for external events ~~are shown to~~ produce missiles more energetic than tornado missiles identified for the US-APWR standard plant design. The design basis for externally generated missiles is therefore bounded by the standard plant design criteria for tornado-generated missiles in DCD Subsection 3.5.1.4. RCOL2_03.05.02-1 RCOL2_03.05.02-1

3.5.4 Combined License Information

Replace the content of DCD Subsection 3.5.4 with the following.

~~CP~~STD COL 3.5(1) ***3.5(1)*** *Prevent unsecured equipment from becoming potential hazard* CTS-01140

This COL item is addressed in Subsection 3.5.1.1.4.

CP COL 3.5(2) ***3.5(2)*** *Maintain P_1 within acceptable limit*

This COL item is addressed in Subsection 3.5.1.3.2.

CP COL 3.5(3) ***3.5(3)*** *Presence of potential hazards and effects in vicinity of site, except aircraft*

This COL item is addressed in Subsection 3.5.1.5.

CP COL 3.5(4) ***3.5(4)*** *Site interface parameters for aircraft crashes and air transportation accidents*

This COL item is addressed in Subsection 3.5.1.6.

CP COL 3.5(5) ***3.5(5)*** *Other potential site-specific missiles*

This COL item is addressed in Subsection 3.5.2.

CP COL 3.5(6) ***3.5(6)*** *Orientation of T/G of other unit(s)*

This COL item is addressed in Subsection 3.5.1.3.1.

3.6 PROTECTION AGAINST DYNAMIC EFFECTS ASSOCIATED WITH POSTULATED RUPTURE OF PIPING

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

3.6.1.3 Postulated Failures Associated with Site-Specific Piping

STD COL 3.6(1) Replace the paragraph in DCD Subsection 3.6.1.3 with the following.

The site-specific systems or components that are safety-related or required for safe shutdown ~~in CPNPP Units 3 and 4~~ are limited to the essential service water system (ESWS) and the ultimate heat sink (UHS) system. There is no site-specific high-energy piping within the protective walls of the ESWPT and UHSRSs~~in CPNPP Units 3 and 4,~~ and therefore, high-energy pipe breaks are not postulated for site-specific piping within these protective walls. The site-specific moderate-energy piping systems ~~in CPNPP Units 3 and 4~~ are the ESWS and the fire protection water supply system (FSS). CTS-01140 CTS-01140 CTS-01161

A qualitative evaluation of site-specific moderate-energy piping systems to assess environmental and flooding impacts is provided below.

The ESWS and the UHS consist of four independent trains with each train providing fifty percent (50%) of the cooling capacity required for a design basis accident and subsequent placement of the plant in the safe shutdown condition. Each train of the ESWS in the ESWPT is physically separated from the other trains by concrete walls and floors, and piping penetrations to other buildings are sealed. The failure in the piping of one ESWS train will not affect the other trains of the ESWS from an environmental and flooding perspective. Therefore, the consequences of failures in site-specific ESWS piping does not affect the ability to safely shut down the plant.

The failure in the FSS piping will not affect the safety function of the ESWS and the UHS from an environmental perspective because the FSS water temperature is approximately room temperature. From a flooding perspective, the ESWS is safe from a FSS pipe failure because FSS piping does not exist in the ESWPT, and the ESWPT piping penetrations prevent intrusion from any postulated FSS spillage in other buildings. Therefore, the consequences of the failure in site-specific FSS piping does not affect the ability to safely shut down the plant.

3.6.2.1 Criteria used to Define Break and Crack Location and Configuration

---

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

~~There~~As noted in Subsection 3.6.1.3, there is no site-specific high-energy piping ~~in CPNPP Units 3 and 4~~within the protective walls of the ESWPT and UHSRSs. The site-specific moderate energy piping systems ~~in CPNPP Units 3 and 4~~ are the ESWS and the FSS. A ~~failure~~crack in the moderate-energy piping 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. CTS-01140 CTS-01161

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.*

3.7.2.8 Interaction of Non-Seismic Category I Structures with Seismic Category I Structures

---

CP COL 3.7(10) Replace the last sentence of the fifth paragraph in DCD Subsection 3.7.2.8 with the following.

Structure-to-structure interactions, which could potentially influence the measured seismic response levels, will not occur because the R/B and PS/B are both founded on the same very stiff limestone layer and are separated by expansion joints which prevent seismic interaction.

Site-specific conditions at CPNPP Units 3 and 4 do not result in exceedance of the assumed pressure distributions used for the US-APWR standard plant design.

~~CP~~STD COL 3.7(9) Replace the seventh paragraph in DCD Subsection 3.7.2.8 with the following. CTS-01140

The site-specific Category I SSCs are the ~~Ultimate Heat Sink Related Structure (~~UHSRS~~)~~, the ~~Essential Service Water Pipe Tunnel (~~ESWPT~~)~~, and the ~~Power Source Fuel Storage Vault (~~PSFSV~~)~~. The layout design of the site-specific seismic Category I SSCs ensures that there are no adjacent non-seismic Category I structures which may adversely affect these structures, to protect them from structural failure of non-seismic Category I structures. CTS-01140

3.7.2.13 Methods for Seismic Analysis of Dams

CP COL 3.7(27) Replace the paragraph in DCD Subsection 3.7.2.13 with the following.

Neither the US-APWR standard plant design nor the CPNPP Units 3 and 4 plant design include the use of dams.

3.7.3.8 Methods for Seismic Analysis of Category I Concrete Dams

CP COL 3.7(27) Replace the paragraph in DCD Subsection 3.7.3.8 with the following.

Neither the US-APWR standard plant design nor the CPNPP Units 3 and 4 plant design include the use of dams.

3.7.3.9 Methods for Seismic Analysis of Aboveground Tanks

CP COL 3.7(12) Replace the first paragraph in DCD Subsection 3.7.3.9 with the following.

This COL item is addressed in Subsection 3.7.1.1 , Tables 3.7-201, 3.7-202, and Figures 3.7-201, 3.7-202, and 3.7-203.

CP COL 3.7(6) ***3.7(6)*** *Site-specific GMRS and FIRS*

This COL item is addressed in Section 3.7 and Figure 3.7-201.

CP COL 3.7(7) ***3.7(7)*** *Allowable dynamic bearing capacity*

This COL item is addressed in Subsection 3.7.1.3, Table 3.7-203, and Table 3.8-202.

CP COL 3.7(8) ***3.7(8)*** *Strain-dependent variation of material dynamic properties*

This COL item is addressed in Subsection 3.7.2.4.1.

~~CP~~STD COL 3.7(9) ***3.7(9)*** *Failure or collapse of non-seismic category I structures* CTS-01140

This COL item is addressed in Subsection 3.7.2.8.

CP COL 3.7(10) ***3.7(10)*** *Structure-to-structure interaction*

This COL item is addressed in Subsection 3.7.2.8.

3.7(11) *Deleted from the DCD.*

CP COL 3.7(12) ***3.7(12)*** *Liquid-retaining metal tanks*

This COL item is addressed in Subsection 3.7.3.9 and Appendix 3MM.

CP COL 3.7(13) ***3.7(13)*** *Value of OBE to define criteria for shutdown*

This COL item is addressed in Subsection 3.7.1.1.

CP COL 3.7(14) ***3.7(14)*** *Seismic instrumentation at multiple-unit site*

This COL item is addressed in Subsection 3.7.4.3.

3.7(15) *Deleted from the DCD.*

CP COL 3.7(16) ***3.7(16)*** *Seismic monitors and need for free-field motion sensors*

The COL item is addressed in Subsection 3.7.4.1.

3.7(17) *Deleted from the DCD.*

3.7(18) *Deleted from the DCD.*

CP COL 3.7(19) ***3.7(19)*** *Site-specific details of seismic instrumentation program*

Table 3.7.1-3R

Major Dimensions of Seismic Category I Structures(1)

	Structure	Basemat Embedment Depth Below Grade (ft)	Basemat Width and Length (ft)	Max. Structure Height	
	R/B	~~26' 8"/~~38'-10"	210' x 309'(3)	190' - 9"	MAP-03-028
	PCCV	See note 2.	See note 2.	268' - 3"	
	Containment Internal Structure	See note 2.	See note 2.	~~139' - 6"~~175'-9" (top of pressurizer compartment)	MAP-03-028
	PS/B	~~37' 3"~~38'-10"	~~71' x 117'~~(66'-0") x (111'-6")(3)	~~51' 11"~~87'-4"	MAP-03-028
CP COL 3.7(28)	PSFSV	40'-0" (nominal)	88'-6" x 78'-6"	42'-7" (+/-) (4),(6)	
CP COL 3.7(28)	UHSRS	47'-0"/35'-0"	131'-6" x 131'-6" (5)	112'-0" (4)	
CP COL 3.7(28)	ESWPT	30'-11" (typical) 31'-5" (maximum) (7)	26' (typical) / 35' (maximum) (7) x length connecting R/B to UHSRS	18'-8" (typical) (4) 51'-5" (maximum) (7)	

Notes:

1) The dimensions shown are approximate and are based on the general arrangement drawings in Section 1.2.
2) The R/B, PCCV, and containment internal structure rest on a common basemat as shown on the general arrangement drawings in Section 1.2.
3) Width and ~~height~~length are the distances between column lines of exterior walls. MAP-03-028
4) The maximum structure height indicated for these structures is from bottom of mat to top of structure. The shear key dimensions of the ESWPT and PSFSVs are not included.
5) CP COL 3.7(28) Each mat foundation supports one UHS basin with ~~two pools~~one pool. RCOL2_09.02.05-4
6) This includes height of curb at the high point on the roof slab.
7) The maximum dimensions occur at the UHS air intake missile shields mounted on the ESWPT adjacent to the UHSRS.

3.8 DESIGN OF CATEGORY I STRUCTURES

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

3.8.1.6 Material, Quality Control, and Special Construction Techniques

---

STD COL 3.8(3) Replace the second sentence of the first paragraph in DCD Subsection 3.8.1.6 with the following.

Any material changes to the site-specific materials for construction of the PCCV will meet the requirements specified in ASME Code, Section III (Reference 3.8-2), Article CC-2000, and supplementary requirements of RG 1.136 (Reference 3.8-3), as well as SRP 3.8.1 (Reference 3.8-7).

~~CP~~STD COL 3.8(7) Replace the first sentence of the thirteenth paragraph in DCD Subsection 3.8.1.6 with the following. CTS-01140

Site-specific ~~aggressivity of the~~ ground water/soil at the ~~CPNPP~~ site is not aggressive~~applicable~~, as discussed in Subsection 2.5.4. As part of inservice inspection programs discussed in Subsection 3.8.4.7, exposed portions of below-grade concrete of seismic category I structures, including the PCCV, will be examined for signs of degradation when below-grade concrete walls and basemats are excavated for any reason, and periodic site monitoring of ground water chemistry will be performed to confirm that the ground water/soil remains nonaggressive. CTS-01140 RCOL2_03.08.01-5

~~CP~~STD COL 3.8(10) Replace the second and third sentences of the twenty-third paragraph in DCD Subsection 3.8.1.6 with the following. CTS-01140

The prestressing system is designed as a strand system.

3.8.1.7 Testing and Inservice Inspection Requirements

STD COL 3.8(14) Replace the third paragraph in DCD Subsection 3.8.1.7 with the following.

A preservice inspection (PSI) program for the PCCV will be completed at least 12 months prior to initial fuel load. The PSI requirements will conform to the provisions of ASME Section XI Division 1 Articles IWA-2000, IWE-2000, and RCOL2_03.08.01-6

- Subsection 3.5.1.6 concludes no loads from non-terrorism related aircraft crashes are applicable.
- Subsection 2.2.3.1.1 concludes no explosive hazards in proximity to the site are applicable, and
- Subsection 3.5.1.6 concludes no projectiles and missiles generated from activities of nearby military installations are applicable.
- Subsection 3.7.1.1 provides the safe-shutdown earthquake response spectra used in the site-specific seismic design. RCOL2_03.08.04-6
- Subsection 3.3.1.1 provides the site-specific design wind speed.

3.8.4.3.4.2 Roof Snow Loads and Roof Live Loads

Add the following paragraph as the last paragraph in DCD Subsection 3.8.4.3.4.2:

The extreme winter precipitation roof load considered for site-specific seismic category I buildings and structures is 37.8 psf as given in Table 2.0-1R. The roof live load used for design of site-specific seismic category I buildings and structures is 100 psf minimum.

3.8.4.3.7.1 Operating Thermal Loads (To)

~~CP~~STD COL 3.8(27) Replace the second paragraph in DCD Subsection 3.8.4.3.7.1 with the following. CTS-01140

The UHSRS, PSFSVs, and ESWPT structures experience only small ranges of operating temperatures and loads which do not require explicit analysis. The designs of the UHSRS, PSFSVs and ESWPT accommodate normal operating thermal loads and environmental thermal gradients such as those identified in Table 3.8-201.

3.8.4.4.3 Other Seismic Category I Structures

CP COL 3.8(29) Replace the last paragraph in DCD Subsection 3.8.4.4.3 with the following.

stiffness that matches the ASCE 4-98 vertical or rocking stiffness is used. Matching of the torsional stiffness is not considered since significant torsional response is not expected (or observed) in any of the structures. RCOL2_03.08.04-15

Vertical loads present on the roof of the PSFSVs are carried by the perimeter and interior walls. The roof acts as a two-way slab based on its aspect ratio with a single span in the north-south direction and a 3-span continuous slab with two-way action in the east-west direction. The vertical wall loads are transmitted to the mat slab and into the bedrock. The exterior walls are also designed for static and dynamic soil pressure. The static soil pressures are calculated using at-rest pressures with K_o = 0.47. This is the same as the at-rest pressure coefficient given in Figure 2.5.4-243. The design also considers the load from the overburden pressure and the soil compaction pressure. Application of the dynamic soil pressure is described in Appendix 3MM. ~~in accordance with ASCE 4-98 (Reference 3.8-34).~~ The exterior walls are designed with and without the roof slab for lateral static soil pressure, and with the roof slab for all other loading including seismic. Walls loaded laterally by earth pressure act as two-way plate members, spreading load to the mat slab and perpendicular shear walls. For seismic load cases, the shear walls are designed to resist 100% of the applied lateral load. The shear walls transmit load to the foundation mat along their length. The load in the foundation mat is then transferred to the bedrock via friction and shear keys. RCOL2_03.08.04-16 RCOL2_03.08.04-16

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~~STD COL 3.8(22)
STD COL 3.8(7)

Replace the second through last paragraph of DCD Subsection 3.8.4.7 with the following. CTS-01122 CTS-01140

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) conducting periodic site monitoring of ground water chemistry, to confirm that the ground water remains nonaggressive. CTS-01140 RCOL2_03.08.01-5

3.8.5.1 Description of the Foundations

~~CP~~STD COL 3.8(23) Replace the second sentence of the second paragraph in DCD Subsection 3.8.5.1 with the following. CTS-01140

The 4 ft. depth exceeds the maximum depth of frost penetration~~ at CPNPP~~. CTS-01140

3.8.5.1.3 Site-Specific Structures

CP COL 3.8(24) Replace the paragraph in DCD Subsection 3.8.5.1.3 with the following new subsections.

3.8.5.1.3.1 ESWPT

The ESPWT is an underground structure supported by a monolithic reinforced concrete basemat. The basemat is a 2 ft. thick concrete slab in Segments 1 and 3 as shown in Figures 3.8-203 and 3.8-204, respectively, and is 2'-6" thick adjacent to the UHSRS in Segment 2 as shown in Figure 3.8-202, with top and bottom reinforcement in each direction arranged in a rectangular grid. RCOL2_03.08.04-1

The bottom of the basemat is at elevation 791.08 ft. (elevation 790.58 ft. adjacent to the UHSRS), and is founded on structural concrete fill placed directly on RCOL2_03.08.04-1 limestone. The basemat has a shear key which extends into the fill concrete in the portion of ESWPT adjacent to the UHSRS as shown in Figure 3.8-202. The fill concrete at this portion also has a shear key which extends into the limestone as shown in Figure 3.8-202. Except at this portion where the fill concrete is locally reinforced, the fill concrete is generally designed as unreinforced concrete. RCOL2_03.08.05-1

3.8.5.1.3.2 UHSRS

The UHS basins, ESWS pump house, and the cooling towers are free-standing structures supported on a reinforced concrete basemat. Each basin, including its pump house and cooling towers, rests on a 4 ft. thick mat with top and bottom reinforcement in each direction arranged in a rectangular grid.

The bottom of the UHS basemat is at elevation 787 ft., except the pump house sump mat is at elevation 775 ft. The pump house basemat is founded directly on limestone, whereas the rest of the UHS mat is founded on structural concrete fill placed directly on limestone.

3.8.5.1.3.3 PSFSVs

PSFSVs are underground structures supported by a monolithic reinforced concrete basemat. The basemat is a 6’-6” thick concrete slab with top and bottom reinforcement in each direction arranged in a rectangular grid.

The bottom of the basemat is at elevation 782 ft., and is founded directly on limestone. Shear keys are provided which extend into the limestone as shown in Figures 3.8-213 and 3.8-214.

3.8.5.4.4 Analyses of Settlement

~~CP~~STD COL Replace the last sentence of the first paragraph in DCD Subsection 3.8.5.4.4 with the following. CTS-01140

As discussed in Section 2.5.4.10.2, maximum and differential ~~CPNPP~~ settlements of all the ~~major~~ seismic category I buildings and structures at the ~~CPNPP Units 3 and 4~~ site, including R/B, PS/Bs, ESWPT, UHSRS, and PSFSVs are estimated to be less than ½ inch, including long-term settlements. CTS-01140 RCOL2_03.08.04-8

3.8.5.5 Structural Acceptance Criteria

CP COL 3.8(25) Replace the second sentence of the first paragraph in DCD Subsection 3.8.5.5 with the following.

All ~~major~~ seismic category I buildings and structures at the CPNPP Units 3 and 4 site, including R/B, PS/Bs, ESWPT, UHSRS, and PSFSVs, are founded either directly on a limestone layer or structural concrete fill which is placed directly on the limestone. The ultimate bearing capacity of the limestone is 146,000 psf. Table 3.8-202 shows the actual bearing pressure during static and seismic load cases with minimum factor of safety. The allowable static bearing capacity is calculated as 1/3 of the ultimate bearing capacity. The allowable dynamic bearing capacity is calculated as 1/2 of the ultimate bearing capacity. Table 2.8-203 shows the load combinations and factors of safety against overturning, sliding and flotation for site-specific buildings and structures. RCOL2_03.08.05-4 RCOL2_03.08.05-5 RCOL2_03.08.05-3

3.8.6 Combined License Information

Replace the content of DCD Subsection 3.8.6 with the following.

3.8(1) *Deleted from the DCD.*

3.8(2) *Deleted from the DCD.*

~~CP~~STD COL 3.8(3) ***3.8(3)*** *Material changes for PCCV* CTS-01140

This COL item is addressed in Subsection 3.8.1.6.

3.8(4) *Deleted from the DCD.*

3.8(5) *Deleted from the DCD.*

3.8(6) *Deleted from the DCD.*

~~CP~~STD COL 3.8(7) ***3.8(7)*** *Aggressivity of ground water/soil* CTS-01140

This COL item is addressed in Subsections 3.8.1.6 and 3.8.4.7.

3.8(8) *Deleted from the DCD.*

3.8(9) *Deleted from the DCD.*

~~CP~~STD COL 3.8(10) ***3.8(10)*** *Alternate wire prestressing system* CTS-01140

This COL item is addressed in Subsection 3.8.1.6.

3.8(11) *Deleted from the DCD.*

3.8(12) *Deleted from the DCD.*

3.8(13) *Deleted from the DCD.*

STD COL 3.8(14) ***3.8(14)*** *PCCV testing and ISI*

This COL item is addressed in Subsection 3.8.1.7.

CP COL 3.8(15) ***3.8(15)*** *Seismic design of SSCs not part of standard plant*

This COL item is addressed in Subsection 3.8.4.

3.8(16) *Deleted from the DCD.*

3.8(17) *Deleted from the DCD.*

3.8(18) *Deleted from the DCD.*

CP COL 3.8(19) ***3.8(19)*** *Design and analysis of ESWPT, UHSRS, PSFSVs, and other site-specific structures*

This COL item is addressed in Subsection 3.8.4.1.3, and Figures 3.8-201 through 3.8-214.

CP COL 3.8(20) ***3.8(20)*** *Externally generated loads*

This COL item is addressed in Subsection 3.8.4.3.

3.8(21) *Deleted from the DCD.*

~~CP~~STD COL 3.8(22) ***3.8(22)*** *Monitoring of seismic category I structures* CTS-01140

This COL item is addressed in Subsection 3.8.4.7.

~~CP~~STD COL 3.8(23) ***3.8(23)*** *Maximum frost penetration level* CTS-01140

This COL item is addressed in Subsection 3.8.5.1.

CP COL 3.8(24) ***3.8(24)*** *Design of other non-standard seismic category I buildings and structures*

This COL item is addressed in Subsection 3.8.5.1.3, and Figures 3.8-202, 3.8-213, and 3.8-214.

CP COL 3.8(25) ***3.8(25)*** *Design soil conditions*

This COL item is addressed in Subsection 3.8.5.5 and Table 3.8-202.

~~CP~~STD COL 3.8(26) ***3.8(26)*** *Subsidence and differential displacement* CTS-01140

This COL item is addressed in Subsection 3.8.5.4.4.

STD COL 3.8(27)
CP COL 3.8(27) ***3.8(27)*** *Normal operating thermal loads* CTS-01140

This COL item is addressed in Subsection 3.8.4.3.7.1, and Table 3.8-201.

CP COL 3.8(28) ***3.8(28)*** *Concrete strength in non-standard plant seismic category I structures*

This COL item is addressed in Subsection 3.8.4.6.1.1.

CP COL 3.8(29) ***3.8(29)*** *Design and analysis procedures for ESWPT, UHSRS, and PSFSVs*

This COL item is addressed in Subsection 3.8.4.4.3, and Appendices 3KK, 3LL, and 3MM

3.9 MECHANICAL SYSTEMS AND COMPONENTS

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

3.9.2.4.1 Background

CP COL 3.9(2) Replace the first, second and third paragraphs in DCD Subsection 3.9.2.4.1 with the following.

The CPNPP Unit 3 reactor internals are classified as a prototype in accordance with RG 1.20 (Reference 3.9-21). Upon qualification of the CPNPP Unit 3 as a valid prototype, the CPNPP Unit 4 reactor internals will be classified as non-prototype category I based on the designation of RG 1.20 (Reference 3.9-21).

Following the recommendation of RG 1.20 (Reference 3.9-21), a pre-operational vibration measurement program is developed for the CPNPP Unit 3 as the first operational US-APWR reactor internals. Data will be acquired only during the hot functional test, before core loading. This is in accordance with RG 1.20. Analysis (Subsection 3.9.2.3) shows that the responses under normal operating conditions with fuel assemblies in the core are almost the same or slightly smaller than those under hot functional test conditions without the core. The final report of the results of the vibration assessment program is submitted to the NRC within 180 days following completion of vibration testing.

Subsequent to the completion of the vibration assessment program for the CPNPP Unit 3 reactor internals, the vibration analysis program will be used to qualify the CPNPP Unit 4 under the criteria for non-prototype category I.

3.9.3.3.1 Pump Operability

~~CP~~STD COL 3.9(10) Replace the last sentence of the first paragraph in DCD Subsection 3.9.3.3.1 with the following. CTS-01140

The site-specific list of active pumps is provided in Table 3.9-201.

3.9.3.4.2.5 Design Specifications

STD COL 3.9(1) Replace the second paragraph of DCD Subsection 3.9.3.4.2.5 with the following.

The design specification for snubbers installed in harsh service conditions (e.g., high humidity, temperature, radiation levels) is evaluated for the projected life of the snubber to assure ~~that~~ snubber functionality including snubber materials (e.g., lubricants, hydraulic fluids, seals). CTS-01150

3.9.6 Functional Design, Qualification, and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints

---

STD COL 3.9(8) Replace the second sentence of the third paragraph in DCD Subsection 3.9.6 with the following.

The inservice testing (IST) program for pumps, valves, and dynamic restraints is administratively controlled to ensure that the equipment will be capable of performing its safety function throughout the life of the plant.

3.9.6.2 IST Program for Pumps

~~CP~~STD COL 3.9(11) Replace the third paragraph in DCD Subsection 3.9.6.2 with the following. CTS-01140

The site-specific safety-related pump IST parameters and ~~frequency is~~frequencies are provided in Table 3.9-202. CTS-01150

3.9.6.3 IST Program for Valves

STD COL 3.9(12) Replace the fifth paragraph in DCD Subsection 3.9.6.3 with the following.

The types of testing and ~~frequency~~frequencies of site-specific valves subject to IST in accordance with the ASME Code ~~is~~are provided in Table 3.9-203. CTS-01150

~~3.9.6.3.1 IST Program for MOVs~~ DCD-3.9.6-13

~~STD COL 3.9(9) Replace the second sentence of the third paragraph in DCD Subsection 3.9.6.3.1 with the following.~~

~~*This COL item is addressed in Subsection 3.9.6.3.1.*~~ DCD-3.9.6-13 CTS-01140

STD COL 3.9(10) CP COL 3.9(10) ***3.9(10)*** *Site-specific active pumps*

This COL item is addressed in Subsection 3.9.3.3.1, and Table 3.9-201.

STD COL 3.9(11) CP COL 3.9(11) ***3.9(11)*** *Site-specific, safety-related pump IST parameters and frequency* CTS-01140

This COL item is addressed in Subsection 3.9.6.2, and Table 3.9-202.

STD COL 3.9(12) CP COL 3.9(12) ***3.9(12)*** *Testing and frequency of site-specific valves subject to IST* CTS-01140

This COL item is addressed in Subsection 3.9.6.3, and Table 3.9-203.

3.10 SEISMIC AND DYNAMIC QUALIFICATION OF MECHANICAL AND ELECTRICAL EQUIPMENT

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

STD COL 3.10(3) Replace the second sentence of the fifth paragraph in DCD Section 3.10 with the following.

The files generated by the environmental qualification (EQ) Program referenced in Subsection 3.10.4.1 include provisions for recording seismic qualification information including test results. The records that form the equipment qualification files include provisions for recording seismic qualification information and are sometimes referred to as equipment qualification summary data sheets (EQSDS). The qualification records for each ~~safety-related and important to safety~~seismic category I and II piece of equipment are updated for individual components as new information becomes available. Information is recorded during the analysis, design, procurement (including testing information), construction, and preoperational testing phases of the project~~.~~ and will be available for review throughout the duration of the project. The implementation of the Operational EQ Program prior to fuel load is a license condition in accordance with Table 13.4-201. MAP-03-031 MAP-03-031

3.10.1 Seismic Qualification Criteria

CP COL 3.10(8) Replace the last sentence of third paragraph in DCD Subsection 3.10.1 with the following.

For design of seismic category I and seismic category II SSCs that are site-specific (not part of the standard plant), the OBE is set at 1/3 of the site-specific SSE, as discussed in Subsection 3.7.1.1, and is therefore eliminated from explicit design analysis, except for fatigue effects as explained below.

3.10.2 Methods and Procedures for Qualifying Mechanical and Electrical Equipment and Instrumentation

---

CP COL 3.10(9) Replace the last two sentences of the fourth paragraph in DCD Subsection 3.10.2 with the following.

However, the site-specific GMRS and FIRS as reported in Section 3.7 do not exceed the CSDRS. Therefore, high frequency exceedances of in-structure response spectra and subsequent potential effects on the functional performance of vibration-sensitive components, such as relays and other instrument and control devices, whose output could be affected by high frequency excitation, are not applicable.

CP COL 3.10(5) Replace the twenty-sixth paragraph (starts with "Components that have been previously tested …") in DCD Subsection 3.10.2 with the following.

Components that have been previously tested to IEEE Std 344-1971 prior to submittal of the DCD will be reevaluated six months prior to procurement of equipment to justify the appropriateness of the input motion and requalify the components using biaxial test input motion, except when a single-axis test input motion is justified. Results of the reevaluation and requalification of the above described components are incorporated into the equipment environmental qualification program.

3.10.4.1 Implementation Program and Milestones

~~CP~~STD COL 3.10(1) Replace the second sentence in DCD Subsection 3.10.4.1 with the following. CTS-01140

Technical Report MUAP-08015, "US-APWR Equipment ~~Environmental~~ Qualification Program" (DCD Reference 3.11-3) describes the EQ Program, as defined in DCD Tier 2 Section 3.11, for all COL applicants using the US-APWR technology. The Technical Report was submitted to the NRC as part of the US-APWR Design Certification application. Figure 2.1 of MUAP-08015 established the overall framework for implementing the EQ Program including seismic qualification. The seismic qualification program implementation schedule is part of the EQ Program implementation milestone schedule provided in FSAR Section 3.11. The seismic qualification program is implemented during the design, procurement, construction and preoperational testing phases of the project as described in MUAP-08015. The project-specific implementation milestone for the seismic qualification program is consistent with the EQ Program implementation milestone identified in FSAR Table 13.4-201. Project-specific implementation of the US-APWR EQ Program provides for the turnover of all EQ Program records to ~~CPNPP~~the licensee. The EQ Program is the basis for the seismic qualification program applicable to replacement parts and components during plant operation. MAP-03-031 CTS-01140

3.10.5 Combined License Information

Replace the content of DCD Subsection 3.10.5 with the following.

~~CP~~STD COL 3.10(1) ***3.10(1)*** *Equipment seismic qualification program* CTS-01140 features of the US-APWR Equipment Qualification Program Technical Report MUAP-08015 (Reference 3.11-3) are included in the CPNPP Units 3 and 4 EQ Program. RCOL2_03.11-15 RCOL2_03.11-12 S01

3.11.1.1 Equipment Identification

~~CP~~STD COL 3.11(5)

Replace the last sentence of the first paragraph in DCD Subsection 3.11.1.1 with the following. CTS-01140

Table 3D-201 identifies ~~CPNPP Units 3 and 4~~ site-specific electrical and mechanical equipment locations and environmental conditions (both normal and accident) to be addressed in the EQ program. This table lists information on site-specific safety-related equipment ~~or~~and non-safety-related equipment which is important to safety ~~equipment~~. The provisions in the US-APWR DCD for the environmental qualification of mechanical equipment are applied to the plant-specific systems. CTS-01140 RCOL2_03.11-16 S01 RCOL2_03.11-3

3.11.1.2 Definition of Environmental Conditions

~~CP~~STD COL 3.11(9)

Replace the fourth sentence of the first paragraph in DCD Subsection 3.11.1.2 with the following. CTS-01140

Plant-specific EQ parameters are documented in the corresponding equipment specifications, drawings, procedures, instructions, and qualification packages. ~~Any parameters based on site-specific considerations are identified in the environmental qualification documentation described in Section 3.11.~~ RCOL2_03.11-12 S01 RCOL2_03.11-6

3.11.3 Qualification Test Results

~~CP~~STD COL 3.11(2)

Replace the fifth paragraph in DCD Subsection 3.11.3 with the following. CTS-01140

Test results for ~~site-specific~~ electrical and mechanical equipment are maintained with the project records as auditable files. Such records are maintained from the time of initial receipt through the entire period during which the subject equipment remains installed in the plant~~,~~ or is stored for future use~~, or is held for permit verification~~. ~~The license holder for CPNPP Units 3 and 4 assumes full~~ RCOL2_03.11-13 RCOL2_03.11-13 S01

~~responsibility for the EQ program at time of license issuance.~~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. The EQ records are maintained for the life of plant to fulfill the records retention requirements delineated in 10 CFR 50.49 (Reference 3.11-2) and in compliance with the QAP described in Chapter 17. RCOL2_03.11-13 S01

3.11.4 Loss of Ventilation

~~CP~~STD COL 3.11(6) Replace the second paragraph in DCD Subsection 3.11.4 with the following. CTS-01140

Site-specific electrical and mechanical equipment (including instrumentation and control and certain accident monitoring equipment), subject to environmental stress associated with loss of ventilation or other environmental control systems including heat tracing, heating, and air conditioning, is qualified using the process ~~an equivalent qualification process to that delineated for the US-APWR standard plant~~ described in MUAP-08015 (Reference 3.11-3). RCOL2_03.11-17 S01 RCOL2_03.11-8

3.11.5 Estimated Chemical and Radiation Environment

~~CP~~STD COL 3.11(7) Replace paragraph in DCD, Subsection 3.11.5 with the following. CTS-01140

Chemical and radiation environmental requirements for site-specific electrical and mechanical equipment (including instrumentation and control and certain accident monitoring equipment) are~~ to be~~ included in ~~the Equipment EQ Technical Report~~MUAP-08015 (Reference 3.11-3). This equipment is qualified using the process~~an equivalent qualification process to that delineated for the US-APWR standard plant~~ described in MUAP-08015 (Reference 3.11-3). RCOL2_03.11-17 S01 RCOL2_03.11-8

3.11.6 Qualification of Mechanical Equipment

~~CP~~STD COL 3.11(8) Replace the second paragraph in DCD, Subsection 3.11.6 with the following. CTS-01140

Site-specific mechanical equipment requirements are to be included in Table 3D-201 by completion of detailed design. This equipment is qualified using the process~~an equivalent qualification process to that delineated for the US-APWR standard plant~~ described in MUAP-08015 (Reference 3.11-3). RCOL2_03.11-17 S01 RCOL2_03.11-8

3.11.7 Combined License Information

Replace the content of DCD Subsection 3.11.7 with the following.

CP COL 3.11(1) ***3.11(1)*** *Environmental qualification document assembly and maintenance*

This COL item is addressed in Section 3.11.

~~CP~~STD COL 3.11(2) ***3.11(2)*** *Qualification tests results recorded* CTS-01140

This COL item is addressed in Subsection 3.11.3.

CP COL 3.11(3) ***3.11(3)*** *Schedule for EQ program implementation milestones*

This COL item is addressed in Section 3.11.

CP COL 3.11(4) ***3.11(4)*** *Periodic tests, calibrations, and inspections*

This COL item is addressed in Section 3.11.

STD COL 3.11(5) CP COL 3.11(5) ***3.11(5)*** *Site-specific equipment addressed in EQ program* CTS-01140

This COL item is addressed in Subsection 3.11.1.1 and Table 3D-201.

~~CP~~STD COL 3.11(6) ***3.11(6)*** *Site-specific equipment, equivalent qualification process* CTS-01140

This COL item is addressed in Subsection 3.11.4.

~~CP~~STD COL 3.11(7) ***3.11(7)*** *Site-specific chemical and radiation environmental requirements* CTS-01140

This COL item is addressed in Subsection 3.11.5~~ and Table 3D-201~~.

STD COL 3.11(8) CP COL 3.11(8) ***3.11(8)*** *Site-specific mechanical equipment requirements*

This COL item is addressed in Subsection 3.11.6 and Table 3D-201.

~~CP~~STD COL 3.11(9) ***3.11(9)*** *Parameters based on site-specific considerations* CTS-01140

This COL item is addressed in Subsection 3.11.1.2.

3.12 PIPING DESIGN REVIEW

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

3.12.5.1 Seismic Input Envelope vs. Site-Specific Spectra

STD COL 3.12(2) Replace the second paragraph in DCD Subsection 3.12.5.1 with the following.

For piping located in the yard that is not part of the US-APWR standard design, site specific response spectra described in Subsection 3.7.1 are used for piping analysis.

3.12.5.3.6 Wind/Tornado Loads

CP COL 3.12(3) Replace the paragraph in DCD Subsection 3.12.5.3.6 with the following.

There is no ASME Code, Section III (Reference 3.12-2) Class 2 or 3 piping exposed to wind or tornado loading. Non-ASME piping, such as B31.1 (Reference 3.12-1) exposed to wind or tornado loading, is evaluated to the wind and tornado loading identified in Section 3.3, in conjunction with the applicable piping code load combinations.

3.12.5.6 High-Frequency Modes

CP COL 3.12(4) Replace the second sentence of the second paragraph in DCD Subsection 3.12.5.6 with the following. CTS-01151

For the site-specific ground motion response spectra, there are no high frequency exceedances of the CSDRS. Therefore, high frequency screening of the piping system for high frequency sensitivity is not required.

3.12.7 Combined License Information

Replace the content of DCD Subsection 3.12.7 with the following.

3.12(1) *Deleted from the DCD.*

STD COL 3.12(2) ***3.12(2)*** *Site-specific seismic response spectra for design of piping*

3D ~~US-APWR~~ EQUIPMENT QUALIFICATION LIST SAFETY AND IMPORTANT TO SAFETY ELECTRICAL AND MECHANICAL EQUIPMENT

MAP-03-031

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

~~CP~~STD COL 3.11(5)
~~CP COL 3.11(7)~~
~~CP~~STD COL 3.11(8)

~~Add the following new table in DCD Appendix 3D.~~

CTS-01140
CTS-01152

3D.1.6 Determination of Seismic Requirements

Replace the third and fourth sentences of DCD Appendix 3D, Subsection 3D.1.6 with the following.

The seismic class of safety-related mechanical, electrical, and Instrumentation and Control are shown in Table 3D-201 and DCD Table 3D-2. 10 CFR 50, Appendix B requirements will be applied to seismic category I electrical, instrumentation and control (I&C), and mechanical equipment contained in Table 3D-201 and DCD Table 3D-2, as discussed in DCD Subsections 3.2.1.1.1 and 3.2.1.1.2.

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

Table 3D-201 (Sheet 1 of 10)

CTS-01140

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose Engineered Safety Feature (ESF), Post Accident Monitoring (PAM), Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
1	UHS-LT-~~2070~~010 A	A - UHS Basin Water Level	UHSRS	PAM, Other	2 wks	Mild	E	I	
2	UHS-LT-~~2070~~010 B	A – UHS Basin Water Level	UHSRS	PAM, Other	2 wks	Mild	E	I	
3	UHS-LT-~~2071~~011 A	B – UHS Basin Water Level	UHSRS	PAM, Other	2 wks	Mild	E	I	
4	UHS-LT-~~2071~~011 B	B - UHS Basin Water Level	UHSRS	PAM, Other	2 wks	Mild	E	I	
5	UHS-LT-~~2072~~012 A	C - UHS Basin Water Level	UHSRS	PAM, Other	2 wks	Mild	E	I	
6	UHS-LT-~~2072~~012 B	C - UHS Basin Water Level	UHSRS	PAM, Other	2 wks	Mild	E	I	
7	UHS-LT-~~2073~~013 A	D - UHS Basin Water Level	UHSRS	PAM, Other	2 wks	Mild	E	I	
8	UHS-LT-~~2073~~013 B	D – UHS Basin Water Level	UHSRS	PAM, Other	2 wks	Mild	E	I	
9	UHS-TE-~~2070~~010	A - UHS Basin Temperature	UHSRS	PAM, Other	2 wks	Mild	E	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

CTS-01140

Table 3D-201 (Sheet 2 of 10)

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose ESF, PAM, Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
10	UHS-TE-~~2071~~011	B - UHS Basin Temperature	UHSRS	PAM, Other	2 wks	Mild	E	I	
11	UHS-TE-~~2072~~012	C - UHS Basin Temperature	UHSRS	PAM, Other	2 wks	Mild	E	I	
12	UHS-TE-~~2073~~013	D - UHS Basin Temperature	UHSRS	PAM, Other	2 wks	Mild	E	I	
13	VRS-~~OFN~~MFN-601A	A - ESW Pump Room Exhaust Fan	UHSRS	ESF	1 yr	Mild	M	I	
14	VRS-~~OFN~~MFN-601B	B - ESW Pump Room Exhaust Fan	UHSRS	ESF	1 yr	Mild	M	I	
15	VRS-~~OFN~~MFN-601C	C - ESW Pump Room Exhaust Fan	UHSRS	ESF	1 yr	Mild	M	I	
16	VRS-~~OFN~~MFN-601D	D - ESW Pump Room Exhaust Fan	UHSRS	ESF	1 yr	Mild	M	I	
17	VRS-~~OFN~~MFN-602A	A - UHS Transfer Pump Room Exhaust Fan	UHSRS	ESF	1 yr	Mild	M	I	
18	VRS-~~OFN~~MFN-602B	B - UHS Transfer Pump Room Exhaust Fan	UHSRS	ESF	1 yr	Mild	M	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

Table 3D-201 (Sheet 3 of 10)

CTS-01140

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose ESF, PAM, Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
19	VRS-~~O~~MFN-602C	C - UHS Transfer Pump Room Exhaust Fan	UHSRS	ESF	1 yr	Mild	M	I	
20	VRS-~~O~~MFN-602D	D - UHS Transfer Pump Room Exhaust Fan	UHSRS	ESF	1 yr	Mild	M	I	
21	VRS-~~OEQ~~MEH-601A	A - ESW Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
22	VRS-~~OEQ~~MEH-601B	B - ESW Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
23	VRS-~~OEQ~~MEH-601C	C - ESW Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
24	VRS-~~OEQ~~MEH-601D	D - ESW Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
25	VRS-~~OEQ~~MEH-602A	A - ESW Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
26	VRS-~~OEQ~~MEH-602B	B - ESW Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
27	VRS-~~OEQ~~MEH-602C	C - ESW Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
28	VRS-~~OEQ~~MEH-602D	D - ESW Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
29	VRS-~~OEQ~~MEH-603A	A - UHS Transfer Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

CTS-01140

Table 3D-201 (Sheet 4 of 10)
Site-Specific Environmental Qualification Equipment List

			Location	Purpose		Environmental Conditions	Qualification Process	Seismic Category	
Item Num	Equipment Tag	Description	PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	ESF, PAM, Other	Operational Duration	Harsh or Mild	E=Electrical M=Mechanical	I, II, Non	Comments
30	VRS-~~OEQ~~MEH-603B	B - UHS Transfer Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
31	VRS-~~OEQ~~MEH-603C	C - UHS Transfer Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
32	VRS-~~OEQ~~MEH-603D	D - UHS Transfer Pump Room Unit Heater	UHSRS	ESF	1 yr	Mild	M	I	
33	VRS-TS-~~2610C~~803	A - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
34	VRS-TS-~~2610D~~804	A - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
35	VRS-TS-~~2610E~~805	A - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
36	VRS-TS-~~2610F~~806	A - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
37	VRS-TS-~~2615C~~812	A - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
38	VRS-TS-~~2615D~~813	A - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

CTS-01140

Table 3D-201 (Sheet 5 of 10)

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose ESF, PAM, Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
39	VRS-TS-~~2615E~~814	A - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
40	VRS-TS-~~2615F~~815	A - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
41	VRS-TS-~~2620C~~823	B - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
42	VRS-TS-~~2620D~~824	B - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
43	VRS-TS-~~2620E~~825	B - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
44	VRS-TS-~~2620F~~826	B - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
45	VRS-TS-~~2625C~~832	B - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
46	VRS-TS-~~2625D~~833	B - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

CTS-01140

Table 3D-201 (Sheet 6 of 10)

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose ESF, PAM, Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
47	VRS-TS-~~2625E~~834	B - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
48	VRS-TS-~~2625F~~835	B - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
49	VRS-TS-~~2630C~~843	C - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
50	VRS-TS-~~2630D~~844	C - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
51	VRS-TS-~~2630E~~845	C - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
52	VRS-TS-~~2630F~~846	C - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
53	VRS-TS-~~2635C~~852	C -UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
54	VRS-TS-~~2635D~~853	C - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

CTS-01140

Table 3D-201 (Sheet 7 of 10)

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose ESF, PAM, Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
55	VRS-TS-~~2635E~~854	C - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
56	VRS-TS-~~2635F~~855	C - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
57	VRS-TS-~~2640C~~863	D - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
58	VRS-TS-~~2640D~~864	D - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
59	VRS-TS-~~2640E~~865	D - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
60	VRS-TS-~~2640F~~866	D - ESW Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
61	VRS-TS-~~2645C~~872	D - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
62	VRS-TS-~~2645D~~873	D - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

CTS-01140

Table 3D-201 (Sheet 8 of 10)

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose ESF, PAM, Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
63	VRS-TS-~~2645E~~874	D - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
64	VRS-TS-~~2645F~~875	D - UHS Transfer Pump Room Temperature	UHSRS	Other	2 wks	Mild	E	I	
65	UHS-~~OPP~~MPP-001A	A - UHS Transfer Pump	UHSRS	ESF	1 yr	Mild	M	I	
66	UHS-~~OPP~~MPP-001B	B - UHS Transfer Pump	UHSRS	ESF	1 yr	Mild	M	I	
67	UHS-~~OPP~~MPP-001C	C - UHS Transfer Pump	UHSRS	ESF	1 yr	Mild	M	I	
68	UHS-~~OPP~~MPP-001D	D - UHS Transfer Pump	UHSRS	ESF	1 yr	Mild	M	I	
69	UHS-~~OEQ~~MFN-001A	A – UHS Cooling Tower Fan No.1	UHSRS	ESF	1 yr	Mild	M	I	
70	UHS-~~OEQ~~MFN-001B	B – UHS Cooling Tower Fan NO.1	UHSRS	ESF	1 yr	Mild	M	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

CTS-01140

Table 3D-201 (Sheet 9 of 10)

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose ESF, PAM, Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
71	UHS-~~OEQ~~MFN-001C	C - UHS Cooling Tower Fan NO.1	UHSRS	ESF	1 yr	Mild	M	I	
72	UHS-~~OEQ~~MFN-001D	D - UHS Cooling Tower Fan No.1	UHSRS	ESF	1 yr	Mild	M	I	
73	UHS-~~OEQ~~MFN-002A	A – UHS Cooling Tower Fan No.2	UHSRS	ESF	1 yr	Mild	M	I	
74	UHS-~~OEQ~~MFN-002B	B – UHS Cooling Tower Fan NO.2	UHSRS	ESF	1 yr	Mild	M	I	
75	UHS-~~OEQ~~MFN-002C	C - UHS Cooling Tower Fan NO.2	UHSRS	ESF	1 yr	Mild	M	I	
76	UHS-~~OEQ~~MFN-002D	D - UHS Cooling Tower Fan No.2	UHSRS	ESF	1 yr	Mild	M	I	
77	UHS-MOV-503A	A - UHS Transfer Pump Discharge Valve	UHSRS	ESF	1 yr	Mild	M	I	
78	UHS-MOV-503B	B – UHS Transfer Pump Discharge Valve	UHSRS	ESF	1 yr	Mild	M	I	
79	UHS-MOV-503C	C – UHS Transfer Pump Discharge Valve	UHSRS	ESF	1 yr	Mild	M	I	
80	UHS-MOV-503D	D – UHS Transfer Pump Discharge Valve	UHSRS	ESF	1 yr	Mild	M	I	

MAP-00-201

CP COL 3.11(5)
~~CP COL 3.11(7)~~
CP COL 3.11(8)

Table 3D-201 (Sheet 10 of 10)

CTS-01140

Site-Specific Environmental Qualification Equipment List

Item Num	Equipment Tag	Description	Location PCCV, R/B, A/B, O/B, T/B, UHSRS, ESWPT	Purpose ESF, PAM, Other	Operational Duration	Environmental Conditions Harsh or Mild	Qualification Process E=Electrical M=Mechanical	Seismic Category I, II, Non	Comments
81	UHS-MOV-506A	A - UHS Transfer Line Basin Inlet Valve	UHSRS	ESF	1 yr	Mild	M	I	
82	UHS-MOV-506B	B - UHS Transfer Line Basin Inlet Valve	UHSRS	ESF	1 yr	Mild	M	I	
83	UHS-MOV-506C	C - UHS Transfer Line Basin Inlet Valve	UHSRS	ESF	1 yr	Mild	M	I	
84	UHS-MOV-506D	D - UHS Transfer Line Basin Inlet Valve	UHSRS	ESF	1 yr	Mild	M	I	
85	~~UHS~~EWS-HCV-~~2~~ ~~000~~010	A - UHS Basin Blowdown Control Valve	UHSRS	ESF	1 yr	Mild	M	I	
86	~~UHS~~EWS-HCV-~~2~~ ~~001~~011	B - UHS Basin Blowdown Control Valve	UHSRS	ESF	1 yr	Mild	M	I	
87	~~UHS~~EWS-HCV-~~2~~ ~~002~~012	C - UHS Basin Blowdown Control Valve	UHSRS	ESF	1 yr	Mild	M	I	
88	~~UHS~~EWS-HCV-~~2~~ ~~003~~013	D - UHS Basin Blowdown Control Valve	UHSRS	ESF	1 yr	Mild	M	I	

MAP-00-201
CTS-01153

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.	-
CTS-01140	5.2.1.1 5.2.1.2 5.2.4.1 5.2.6 5.3.1.6.1 5.3.1.6.3 5.3.2.3 5.3.2.4 5.3.3.7 5.3.4	5.2-1 5.2-2 5.2-3 5.2-4 [5.2-5] 5.3-1 5.3-2 5.3-3 5.3-4	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

5.2 INTEGRITY OF REACTOR COOLANT PRESSURE BOUNDARY

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

5.2.1.1 Compliance with 10 CFR 50, Section 50.55a

~~CP~~STD COL 5.2(11)

Replace the third sentence of the second paragraph in DCD Subsection 5.2.1.1 with the following. RCOL2_05.02.01.01-1 CTS-01140

~~Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4~~The licensee uses ASME Code editions and addenda that is the same as those specified in the US-APWR DCD Table 5.2.1-1 and DCD Subsection 3.9.10, Reference 3.9-13. CTS-01140 RCOL2_05.02.01.01-1

5.2.1.2 Compliance with Applicable Code Cases

Replace the third paragraph in DCD Subsection 5.2.1.2 with the following.

~~CP~~STD COL 5.2(1)
~~CP~~STD COL 5.2(2)
~~CP~~STD COL 5.2(3)

~~Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4~~The licensee uses no Code Cases listed in Regulatory Guide (RG) 1.84 beyond those listed in the referenced DCD. The use of Code Cases including those listed in RG 1.147 is identified in the inservice inspection (ISI) program (Subsection 5.2.4 and Section 6.6). The use of Code Cases including those listed in RG 1.192 is identified in the inservice testing (IST) program (Subsection 3.9.6 and 5.2.4). CTS-01140

5.2.3.2.1 Chemistry with Reactor Coolant

STD COL 5.2(12) Replace the second sentence of the third paragraph with the following.

Water chemistry of the US-APWR reactor coolant will meet the latest version of the EPRI Water Chemistry Guidelines in effect at the time of COLA submittal.

5.2.4.1 Inservice Inspection and Testing Program

STD COL 5.2(4) Replace the first sentence of the fourth paragraph in DCD Subsection 5.2.4.1 with the following.

The implementation milestones for the ISI program and the IST program are provided in Table 13.4-201.

Add the following text after the first sentence of the fifth paragraph in DCD Subsection 5.2.4.1.

~~The boric acid corrosion control program consists of visual inspection of component surfaces for evidence of leakage, removal of any boric acid residue found, assessment of the corrosion, and inspection follow-up.~~The boric acid corrosion control program (BACCP) includes procedures for determining the principal locations where leakage may cause degradation of the primary pressure boundary by boric acid corrosion. Procedures for controlling leakage include provisions to detect and locate small leaks using on-line leakage monitoring and/or visual inspection. Leakage that is below allowable Technical Specification limits is detected by indication and trending of on-line leakage detection data gathered from containment sump level and flow monitoring, containment air cooler condensate flow rate monitoring, containment airborne particulate radioactivity monitoring, humidity, temperature, and pressure monitoring of the containment atmosphere, and observing gross leakage from changes in the reactor coolant inventory. If a trend indicates reactor coolant leakage, operators are trained to take action to identify possible leak locations. RCOL2_05.02.04-1 CTS-01140 RCOL2_05.02.04-1

In addition, the following visual inspections are routinely conducted in order to identify leakage.

- Visual inspection of accessible and observable components during system walkdowns (including walkdowns conducted early in the outage to ensure evidence of RCS leakage, such as boric acid deposits at the leakage sites, is not disturbed prior to engineering evaluation).
- Visual inspections during plant outages (including bare metal inspection of specific components that have higher risk of corrosion).

The BACCP also contains methods for conducting examinations, performing engineering evaluations to establish the impact on the reactor coolant pressure boundary when leakage is located, and establishing corrective actions to prevent recurrences of this type of corrosion.

- Condensate flow rate from air coolers RCOL2_05.02.05-3
- Equivalent leak rate conversion

Establishing alarm setpoints to provide operators an early warning signal so they can take corrective actions in response to leakage rates less than Technical Specification limits including:

- Facilitation of stepwise operator action levels
- Response to administrative limits
- Allowance for individual instrument sensitivity and response times.

Actions in response to unexpected leakage rates less than Technical Specification Limits including:

- A validated computer program consistent with procedures and technical data to perform water inventory balance calculations
- Action levels to provide Operators guidance based on escalating administrative leakage limits below that are below Technical Specification limits
- Leak rate determination
- System walk downs
- Limits on continued operation
- Contingency plans

Guidance to recognize and respond to a prolonged low-level leakage condition including:

- Trending that includes action requirements based on deviations from the mean
- Outage and maintenance practices
- Corrective Action Program practices

5.2.6 Combined License Information

Replace the content of DCD Subsection 5.2.6 with the following.

~~CP~~STD COL 5.2(1) ***5.2(1)*** *ASME Code Cases that are approved in Regulatory Guide 1.84* CTS-01140

This Combined License (COL) item is addressed in Subsection 5.2.1.2.

~~CP~~STD COL 5.2(2) | ***5.2(2)** ASME Code Cases that are approved in Regulatory Guide 1.147* | CTS-01140

This COL item is addressed in Subsection 5.2.1.2.

~~CP~~STD COL 5.2(3) | ***5.2(3)** ASME Code Cases that are approved in Regulatory Guide 1.192* | CTS-01140

This COL item is addressed in Subsection 5.2.1.2.

STD COL 5.2(4)
CP COL 5.2(4) | ***5.2(4)** Inservice inspection and testing program for the Reactor Coolant Pressure Boundary (RCPB)* | CTS-01140

This COL item is addressed in Subsection 5.2.4.1 and Table 13.4-201.

STD COL 5.2(5) | ***5.2(5)** Preservice inspection and testing program for the RCPB*

This COL item is addressed in Subsection 5.2.4.2 and Table 13.4-201.

***5.2(6)** Deleted from the DCD.*

***5.2(7)** Deleted from the DCD.*

***5.2(8)** Deleted from the DCD.*

***5.2(9)** Deleted from the DCD.*

***5.2(10)** Deleted from the DCD.*

~~CP~~STD COL 5.2(11) | ***5.2(11)** ASME Code Edition and Addenda* | CTS-01140

This COL item is addressed in Subsection 5.2.1.1.

STD COL 5.2(12) | ***5.2(12)** EPRI Primary Water Chemistry Guideline*

This COL item is addressed in Subsection 5.2.3.2.1.

STD COL 5.2(13) | ***5.2(13)** ISI Accessibility*

This COL item is addressed in Subsection 5.2.4.1.1.

STD COL 5.2(14) | ***5.2(14)** Procedure for conversation into common leakage rate*

This COL item is addressed in Subsection 5.2.5.9.

STD COL 5.2(15) | ***5.2(15)** Procedure for operator response to prolonged low-level leakage*

This COL item is addressed in Subsection 5.2.5.9.

5.3 REACTOR VESSEL

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

5.3.1.6 Material Surveillance

STD COL 5.3(2) Replace the second paragraph with the following in DCD Subsection 5.3.1.6.

The reactor vessel material surveillance program is implemented as an operational program. As the reactor vessel materials do not begin to be affected by neutron fluence until the reactor begins critical operation, this program is implemented prior to initial criticality, as identified in Table 13.4-201.

5.3.1.6.1 Surveillance Capsules

STD SUP 5.3(1) Insert the following at the end of the second paragraph in DCD Subsection 5.3.1.6.1. RCOL2_05.03.01-2

Test specimens are taken from material used for the reactor vessel beltline.

STD SUP 5.3(2) Insert the following after the first sentence in the fifth paragraph in DCD Subsection 5.3.1.6.1.

The capsules are sealed in an inert environment.

~~CP~~STD COL 5.3(3) Replace the last sentence in the fifth paragraph with the following in DCD Subsection 5.3.1.6.1. CTS-01140

These lead factors and the capsule orientation are shown in DCD Figure 5.3-1 ~~are applicable for CPNPP Units 3 and 4~~. CTS-01140

~~CP~~STD COL 5.3(2) Replace the last sentence in the sixth paragraph with the following in DCD Subsection 5.3.1.6.1. CTS-01140

The recommended general capsule withdrawal schedule is applied and the use of ~~these~~the standby surveillance capsules is incorporated by updating the surveillance program once sufficient data are retrieved to determine the withdrawal schedule for these capsules. RCOL2_05.03.01-3

~~CP~~STD COL 5.3(2) Replace the last paragraph with the following in DCD Subsection 5.3.1.6.1. CTS-01140

Accelerated irradiation capsules as defined in American Society for Testing and Materials (ASTM) E-185 (Ref. 5.3-24) and integrated surveillance program for multiple reactors at a single site, are not applicable ~~at CPNPP Units 3 and 4~~. CTS-01140

5.3.1.6.3 Predicted Effects of Radiation on Beltline Region Materials

---

~~CP~~STD COL 5.3(2) Add the following text after the last paragraph in DCD Subsection 5.3.1.6.3. CTS-01140

A summary technical report, including test results, is submitted as specified in 10 CFR 50.4, for the contents of each capsule withdrawn, within one year of the date of capsule withdrawal unless an extension is granted by the Director, Office of Nuclear Reactor Regulation.

The report includes the data required by ASTM E-185-82, as specified in paragraph III.B.1 of 10 CFR 50, Appendix H, and includes the results of the fracture toughness tests conducted on the beltline materials in the irradiated and unirradiated conditions.

If the test results indicate a change in the Technical Specifications, either in the pressure-temperature limits or in the operating procedures, the expected date for submittal of the revised Technical Specifications is provided with the report.

5.3.2.1 Limit Curves

STD COL 5.3(1) Replace the last sentence in the second paragraph with the following in DCD Subsection 5.3.2.1.

The generic pressure and temperature limits reports (PTLR) for the US-APWR reactor vessel will be applied.

The COL Holder will update the P/T limits prior to fuel loading using the PTLR methodologies approved in the US-APWR DCD and the plant specific material properties and inform the NRC of the updated P/T limits as required by the Technical Specifications.

5.3.2.2 Operating Procedures

STD COL 5.3(1)

Replace the first sentence in the last paragraph with the following in DCD Subsection 5.3.2.2.

Operating procedures will be developed in accordance with Section 13.5, such that the plant-specific pressure-temperature limit curves are not exceeded and Technical Specification requirements are satisfied.

5.3.2.3 Pressurized Thermal Shock

~~CP~~STD COL 5.3(4)

Replace the last paragraph with the following in DCD Subsection 5.3.2.3. CTS-01140

~~The r~~Reference pressurized thermal shock temperature (RT_{PTS}) values ~~for CPNPP Units 3 and 4~~ are calculated based on the material property requirements detailed in DCD Subsection 5.3.1.5, and the results are as shown in DCD Table 5.3-4.

5.3.2.4 Upper Shelf Energy

~~CP~~STD COL 5.3(4)

Replace the last paragraph with the following in DCD Subsection 5.3.2.4. CTS-01140

The upper shelf energy (USE) at end-of-life (EOL) ~~for CPNPP Units 3 and 4~~ is calculated based on material property requirements detailed in DCD Subsection 5.3.1.5, and the results are as shown in DCD Table 5.3-4.

5.3.3.7 Inservice Surveillance

~~CP~~STD COL 5.3(5)

Replace the fourth and fifth sentences in the first paragraph of DCD Subsection 5.3.3.7 with the following. CTS-01140

The detailed list of inservice and preservice inspections is shown in DCD Tables 5.3-2 and 5.3-3 ~~is used for CPNPP Units 3 and 4~~. CTS-01140

5.3.4 Combined License Information

Replace the content of DCD Subsection 5.3.4 with the following.

STD COL 5.3(1) ***COL 5.3(1)*** *Pressure-Temperature Limit Curves*

This COL item is addressed in Subsections 5.3.2.1 and 5.3.2.2.

~~CP COL 5.3(2)~~ STD COL 5.3(2) ***COL 5.3(2)*** *Reactor Vessel Material Surveillance Program* CTS-01140

This COL item is addressed in Subsection 5.3.1.6.

~~CP~~STD COL 5.3(3) ***COL 5.3(3)*** *Surveillance Capsule Orientation and Lead Factors* CTS-01140

This COL item is addressed in Subsection 5.3.1.6.1.

~~CP~~STD COL 5.3(4) ***COL 5.3(4)*** *Reactor Vessel Material Properties Verification* CTS-01140

The material property verification portion of this COL item is addressed in DCD Subsection 5.3.1.1. Other portions of this COL item are addressed in Subsections 5.3.2.3 and 5.3.2.4.

~~CP~~STD COL 5.3(5) ***COL 5.3(5)*** *Preservice and Inservice Inspection* CTS-01140

This COL item is addressed in Subsection 5.3.3.7.

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.	-
CTS-01140	6.4.3 6.4.6 6.4.7	6.4-1 6.4-3 [6.4-4]	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

6.4 HABITABILITY SYSTEMS

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

6.4.3 System Operational Procedures

~~CP~~STD COL 6.4(2) Replace the third paragraph in DCD Subsection 6.4.3 with the following. CTS-01140

The analyses of control room habitability during postulated release of toxic chemicals described in Subsection 6.4.4.2 identify no hazardous chemical that exceeds the IDLH criteria of RG 1.78, so that no specific automatic action of MCR HVAC system is required to protect operators within the CRE against toxic gas release event. The emergency isolation mode may be initiated by manual action as described in Subsection 6.4.4.2.

6.4.4.1 Radiological Protection

CP SUP 6.4(1) Add the following text after the paragraph in DCD Subsection 6.4.4.1:

The impact of a post-accident release on the maximum control room dose for the same US-APW R unit at Comanche Peak has been evaluated and addressed in the DCD. The DCD analysis credits operation of the main control room HVAC system in the pressurization mode. The dose to the control room operation at an adjacent US-APWR unit due to a radiological release from the other US-APWR unit is bounded by the dose to control room operators in the affected unit. While it is possible that the other US-APWR unit may be downwind in an unfavorable location, the dose at the downwind unit would be bounded by what has already been evaluated for a single US-APWR unit in the DCD. In addition, because the shortest distance between existing Comanche Peak Unit 1 or Unit 2 and US-APWR Unit 3 or Unit 4 is several times the separation between Unit 3 and Unit 4, the dose to either US-APWR unit control room from either existing operating unit would be bounded by a release at the same US-APWR Unit. Simultaneous post-accident radiological releases from multiple units at a single site are not considered to be credible.

6.4.4.2 Toxic Gas Protection

CP COL 6.4(1)
CP COL 6.4(2) Replace the second paragraph in DCD Subsection 6.4.4.2 with the following.

The control room habitability analyses consider postulated releases of toxic chemicals from mobile and stationary sources in accordance with the

6.4.6 Instrumentation Requirement

~~CP~~STD COL 6.4(5)

Replace the last paragraph in DCD Subsection 6.4.6 with the following. CTS-01140

Instrumentation to detect and alarm a hazardous chemical release in the vicinity ~~of CPNPP Units 3 and 4~~, and to automatically isolate the control room envelope (CRE) from such releases is not required based on analyses described in Subsection 6.4.4.2. No hazardous chemicals concentrations in the MCR exceeded the IDLH criteria of RG 1.78. CTS-01140

6.4.7 Combined License Information

Replace the content of DCD Subsection 6.4.7 with the following.

CP COL 6.4(1)

6.4(1) *Toxic chemicals of mobile and stationary sources and evaluation of the control room habitability*

This COL item is addressed in Subsection 6.4.4.2.

CP COL 6.4(2) STD COL 6.4(2)

6.4(2) *Automatic and manual action for the MCR HVAC system that are required in the event of postulated toxic gas release* CTS-01140

This COL item is addressed in Subsection 6.4.3 and Subsection 6.4.4.2.

6.4(3) *Deleted from the DCD.*

6.4(4) *Deleted from the DCD.*

~~CP~~STD COL 6.4(5)

6.4(5) *Toxic gas detection requirements necessary to protect the CRE* CTS-01140

This COL item is addressed in Subsection 6.4.6.

6.4.8 References

Add the following reference after the last reference in DCD Subsection 6.4.8.

6.4-201 U.S. Nuclear Regulatory Commission, *Recommendations for Revision of Regulatory Guide 1.78*, NUREG/CR-6624, Washington, DC, 1999.

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
CTS-01140	7.4.1.6 7.4.4 Table 7.4-202 7.5.1.1 7.5.4	7.4-1 7.4-3 7.5-1 7.5-2	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

7.4 SYSTEMS REQUIRED FOR SAFE SHUTDOWN

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

7.4.1.6 Normal and Safe Shutdown Functions

~~CP~~STD COL 7.4(1)

Replace the second paragraph in DCD Subsection 7.4.1.6 with the following. CTS-01140

Site-specific component control and indication to achieve shutdown and as related to the ultimate heat sink (UHS) is presented in Tables 7.4-201 and 7.4-202. A system description of the UHS is provided in Subsection 9.2.5.

7.4.4 Combined License Information

Replace the content of DCD Subsection 7.4.4 with the following.

CP COL 7.4(1)
STD COL 7.4(1)

7.4(1) *Description of component controls and indications required for safe shutdown related to UHS* CTS-01140

This Combined License (COL) item is addressed in Subsection 7.4.1.6, and Tables 7.4-201 and 7.4-202.

~~CP~~STD COL 7.4(1)

CTS-01140

Table 7.4-202

Site-Specific Indication for Shutdown

Systems	Instruments	Number of Channels	Normal Shutdown	Safe Shutdown
UHSS	UHS Basin Water Level	2 per Basin	Yes	Yes
	UHS Basin Temperature	1 per Basin	Yes	Yes

7.5 INFORMATION SYSTEMS IMPORTANT TO SAFETY

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

7.5.1.1 Post-Accident Monitoring

~~CP~~STD COL 7.5(1)

Replace the seventh paragraph in DCD Subsection 7.5.1.1 with the following. CTS-01140

Site-specific type D post accident monitoring (PAM) variables related to the UHS and site-specific type E PAM variables for monitoring the meteorological parameters are presented in Table 7.5-201.

7.5.1.6.2 Emergency Operations Facilities

CP COL 7.5(2)

Replace the third paragraph in DCD Subsection 7.5.1.6.2 with the following.

The emergency operations facility (EOF) of the Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4 is located in the existing nuclear operations support facility, which is west of the reactor building.

The EOF is large enough to provide the following:

- Workspace for the personnel assigned to the EOF
- Space for the new displays and other related equipment associated with CPNPP Units 3 and 4
- Space for unhindered access to communication equipment related to CPNPP Units 3 and 4 by all EOF personnel
- Space for storage of and/or access to plant records and historical data
- A separate room for private U.S. Nuclear Regulatory Commission (NRC) consultations

The EOF working space is currently sized for 45 persons, including federal, state, and local emergency personnel. The existing EOF floor space is approximately 3200 sq. ft. The EOF is designed and equipped to support continuous operations over an extended period of time.

Displays associated with CPNPP Units 3 and 4 are common to both units with a unit-display selection capability. Post-accident monitoring, bypassed and inoperable status indication, plant alarms, and safety parameter display system information is displayed on non-safety human-system interface equipment in the EOF. The information displayed in the EOF, main control room (MCR), and technical support center (TSC) is identical, although the manner in which it is displayed may vary (e.g., single screen, multiple screens, single monitor, multiple monitors, etc.). The displays and communication related auxiliary equipment is strategically located in the existing EOF. Neither the EOF nor the TSC has plant control capability.

7.5.4 Combined License Information

Replace the content of DCD Subsection 7.5.4 with the following.

CP COL 7.5(1)
STD COL 7.5(1)

7.5(1) *Description of site-specific PAM variables* CTS-01140

This COL item is addressed in Subsection 7.5.1.1 and Table 7.5-201.

CP COL 7.5(2)

7.5(2) *Description of site-specific EOF*

This COL item is addressed in *Subsection 7.5.1.6.2*.

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.	-
CTS-01140	8.2.1.2 8.2.3 8.2.4 Table 8.3.1-4R Figure 8.3.1-1R Sheet 5 and 6 of 7) Figure 8.3.1-2R Sheet 18 through 21 of 24)	8.2-3 8.2-12 8.2-13 8.2-14 8.3-6 Through 8.3-9 8.3-11 8.3-12 8.3-17 Through 8.3-20	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

transmission lines. During unit startup, shutdown, maintenance, and during all postulated accident conditions, offsite electric power can be supplied to each unit site from the plant switching station through two physically independent transmission tie lines. One of these two transmission tie lines connects to the high-voltage side of the MT via a 345 kV circuit breaker. The other transmission tie line connects to two 345 kV circuit breakers at the unit switchyard, one circuit breaker is for RAT1 and RAT3, and the other circuit breaker is for RAT2 and RAT4. Both of any two outgoing transmission lines between the plant switching station and the remote offsite switching stations adequately maintain the voltage within ±5 percent of 345 kV at the high voltage side terminals of the MTs and RATs, while supplying full auxiliary loads of both units for all normal, abnormal and postulated accident conditions.

CP COL 8.2(4)
CP COL 8.2(5)

Add the following information after the last sentence of the second paragraph in DCD Subsection 8.2.1.2.

Neither the grid stability analysis in Subsection 8.2.2.2 nor the failure modes and effects analysis (FMEA) in Subsection 8.2.1.2.1.1 identified the non-safety related offsite power system as risk-significant during all modes of plant operation.

Add the following information after the last sentence of the eleventh paragraph in DCD Subsection 8.2.1.2. RCOL2_08.02-27

The force-cooled continuous-current rating of the iso-phase bus duct section between the main generator and the main transformer is 44.4 kA, which provides 5% margin with respect to the 42.2 kA continuous current rating of the main generator.

~~CP~~STD COL 8.2(10)

Replace the last sentence of the fifteenth paragraph in DCD Subsection 8.2.1.2 with the following. CTS-01140

In case of a sudden pressure relay operation, the transformer is isolated.

CP COL 8.2(4)
CP COL 8.2(5)

Replace the second sentence of the eighteenth paragraph in DCD Subsection 8.2.1.2 with the following.

Minimum one-hour rated fire barriers are provided between all transformers. Figures 8.2-207 and 8.2-208 show physical layout of equipment in the Unit 3 and

- Loss of the largest load in the grid.

The addition of the proposed CPNPP Units 3 and 4 at the Comanche Peak facility does not adversely impact the stability of the existing units and the new units in the area. The Comanche Peak generation remains stable for reasonably expected contingencies. These study cases include loss of the most heavily loaded transmission circuit connected to the plant switching station, loss of the largest capacity transmission circuit connected to the plant switching station and removal of the largest load from the system. In addition, in case of loss of the largest supply, i.e. CPNPP Units 3 and 4, the transmission system remains stable with slight voltage and frequency variation. The voltage low point is about 0.976 pu and frequency deviation from 60 Hz is only 0.24 Hz at the lowest point. In addition, the maximum frequency decay rate does not exceed 5 Hz/second that is assumed in the reactor coolant system flow analysis in Chapter 15.

Grid stability is evaluated on an ongoing basis based on load growth, addition of new transmission lines, addition of new generation capacities and for planned system changes.

The plant switching station and associated outgoing transmission lines and tie lines are newly constructed in CPNPP site and the transmission lines are connected to the four independent and separate local switching station. The transmission system reliability is evaluated in a similar manner as the CPNPP Units 1 and 2. CPNPP Units 1 and 2 have not experienced any LOOP event caused by both the transmission system accepting the unit's output and the transmission system providing the preferred power for the unit's loads, from 1986 to 2007. According to this experience data, the transmission system is expected to be highly reliable.

8.2.3 Design Bases Requirements

CP COL 8.2(11) Replace the first sentence of the second paragraph in DCD Subsection 8.2.3 with the following.

A failure modes and effects analysis is provided in Subsection 8.2.1.2.1.1 and the offsite power system conforms to the following requirements.

~~CP~~STD COL 8.2(11) Replace the last sentence of the third paragraph in DCD Subsection 8.2.3 with the following. CTS-01140

A grid stability analysis is provided in Subsection 8.2.2.2 and the grid stability conforms to this requirement.

~~CP~~STD COL 8.2(11) Replace the last sentence of the fourth paragraph in DCD Subsection 8.2.3 with the following. CTS-01140

A transmission system reliability analysis is provided in Subsection 8.2.2.2. CTS-01140

8.2.4 Combined License Information

Replace the content of DCD Subsection 8.2.4 with the following.

CP COL 8.2(1) ***8.2(1)*** *Utility power grid and transmission line*

This Combined License (COL) Item is addressed in Subsections 8.1.2.1, 8.2.1.1, 8.2.1.2.3, Table 8.2-201, Table 8.2-202, and Figure 8.2-201.

8.2(2) *Deleted from the DCD.*

CP COL 8.2(3) ***8.2(3)*** *Switchyard description*

This COL Item is addressed in Subsections 8.1.1, 8.1.5.3.5, 8.2.1.2.1.1, 8.2.1.2.1.2, 8.2.1.2.2, Figure 8.1-1R, Figure 8.2-202, Figure 8.2-203, Figure 8.2-204, Figure 8.2-205, Figure 8.2-206, Figure 8.2-207, Figure 8.2-208, Figure 8.3.1-1R and *Figure 8.3.1-2R.*

CP COL 8.2(4) ***8.2(4)*** *Normal preferred power*

This COL Item is addressed in Subsection 8.2.1.2, Figure 8.2-202, Figure 8.2-203, Figure 8.2-207 and *Figure 8.2-208.*

CP COL 8.2(5) ***8.2(5)*** *Alternate preferred power*

This COL Item is addressed in Subsection 8.2.1.2, Figure 8.2-202, Figure 8.2-204, Figure 8.2-207 and *Figure 8.2-208.*

8.2(6) *Deleted from the DCD.*

CP COL 8.2(7) ***8.2(7)*** *Protective relaying*

This COL Item is addressed in Subsections 8.2.1.2.1.1, 8.2.1.2.1.2, Figure 8.2-203, Figure 8.2-204, Figure 8.2-209 and *Figure 8.2-210.*

CP COL 8.2(8) ***8.2(8)*** *Switchyard dc power*

This COL Item is addressed in Subsections 8.2.1.2.1.1 and *8.2.1.2.1.2.*

CP COL 8.2(9) ***8.2(9)*** *Switchyard ac power*

This COL Item is addressed in Subsections 8.2.1.2.1.1 and *8.2.1.2.1.2.*

~~CP~~STD COL 8.2(10)

8.2(10) *Transformer protection* CTS-01140

This COL Item is addressed in Subsection 8.2.1.2.

CP COL 8.2(11)
STD COL 8.2(11)

8.2(11) *Stability and Reliability of the Offsite Transmission Power Systems* CTS-01140

This COL Item is addressed in Subsections 8.2.1.2.1.1, 8.2.2.2, 8.2.3 and Table 8.2-203.

8.2(12) *Deleted from the DCD.*

Table 8.3.1-4R (Sheet 1 of 4)

Electrical Load Distribution - Class 1E GTG Loading

A Class 1E GTG

	Load	Quantity Installed	Rated Output [kW]	Load Input [kW]	Efficiency [%]	Power Factor [%]	Load Factor [%]	LOCA Concurrent with a LOOP				LOOP								
												Hot Shutdown				Cold Shutdown				
								Quantity	[kW]	[kVAR]	[kVA]	Quantity	[kW]	[kVAR]	[kVA]	Quantity	[kW]	[kVAR]	[kVA]	
	A Safety Injection Pump	1	900	950	90	85	95	1	950	589	1118	0	-	-	-	0	-	-	-	
	A Component Cooling Water Pump	1	610	644	90	85	95	1	644	400	758	1	644	400	758	1	644	400	758	
~~CP~~STD COL 9.2(6)	A Essential Service Water Pump	1	650	686	90	85	95	1	686	427	808	1	686	427	808	1	686	427	808	CTS-01140
	A Containment Spray/Residual Heat Removal Pump	1	400	422	90	85	95	1	422	263	497	0	-	-	-	1	422	263	497	
	A Charging Pump	1	820	866	90	85	95	0	-	-	-	1	866	537	1019	1	866	537	1019	
	A Class 1E Electrical Room Air Handling Unit Fan	1	80	89	85	80	95	1	89	68	112	1	89	68	112	1	89	68	112	
	A Essential Chiller Unit	1	290	324	85	80	95	1	324	243	405	1	324	243	405	1	324	243	405	
	A Spent Fuel Pit Pump	1	230	257	85	80	95	0	-	-	-	1	(257)	(193)	(322)	1	(257)	(193)	(322)	
	A Class 1E Electrical Room Air Handling Unit Electrical Heater	1	250	250	100	100	100	0	-	-	-	0	-	-	-	0	-	-	-	
	A Pressurizer Heater (Back-up)	1	562	562	100	100	100	0	-	-	-	1	562	0	562	0	-	-	-	
~~CP~~STD COL 9.2(20)	A Essential Service Water Pump Cooling Tower Fan	2	150	168	85	80	95	2	336	252	420	2	336	252	420	2	336	252	420	CTS-01140
~~CP~~STD COL 9.2(20)	Motor Control Centers (A&A1)	2						2	320	199	377	2	270	168	318	2	270	168	318	CTS-01140
	Total								3771	2441	4495		3777	2095	4402		3637	2358	4337	

( ):This load is started by manually if GTG has necessary margin after completing automatic load sequence.

Table 8.3.1-4R (Sheet 2 of 4)

Electrical Load Distribution - Class 1E GTG Loading

B Class 1E GTG

	Load	Quantity Installed	Rated Output [kW]	Load Input [kW]	Efficiency [%]	Power Factor [%]	Load Factor [%]	LOCA Concurrent with a LOOP				LOOP: Hot Shutdown				LOOP: Cold Shutdown				
								Quantity	[kW]	[kVAR]	[kVA]	Quantity	[kW]	[kVAR]	[kVA]	Quantity	[kW]	[kVAR]	[kVA]	
	B Safety Injection Pump	1	900	950	90	85	95	1	950	589	1118	0	-	-	-	0	-	-	-	
	B Component Cooling Water Pump	1	610	644	90	85	95	1	644	400	758	1	644	400	758	1	644	400	758	
~~CP~~STD COL 9.2(6)	B Essential Service Water Pump	1	650	686	90	85	95	1	686	427	808	1	686	427	808	1	686	427	808	CTS-01140
	B Containment Spray/Residual Heat Removal Pump	1	400	422	90	85	95	1	422	263	497	0	-	-	-	1	422	263	497	
	B Emergency Feed Water Pump	1	590	475	90	85	73	1	475	295	559	1	475	295	559	0	-	-	-	
	B Class 1E Electrical Room Air Handling Unit Fan	1	80	89	85	80	95	1	89	68	112	1	89	68	112	1	89	68	112	
	B Essential Chiller Unit	1	290	324	85	80	95	1	324	243	405	1	324	243	405	1	324	243	405	
	A Spent Fuel Pit Pump	1	230	257	85	80	95	0	-	-	-	1	(257)	(193)	(322)	1	(257)	(193)	(322)	
	B Class 1E Electrical Room Air Handling Unit Electrical Heater	1	250	250	100	100	100	0	-	-	-	0	-	-	-	0	-	-	-	
	B Pressurizer Heater (Back-up)	1	562	562	100	100	100	0	-	-	-	1	562	0	562	0	-	-	-	
~~CP~~STD COL 9.2(20)	B Essential Service Water Pump Cooling Tower Fan	2	150	168	85	80	95	2	336	252	420	2	336	252	420	2	336	252	420	CTS-01140
~~CP~~STD COL 9.2(20)	Motor Control Centers (B&A1)	2						2	320	199	377	2	270	168	318	2	270	168	318	CTS-01140
	Total								4246	2736	5054		3386	1853	3942		2771	1821	3318	

( ): This load is started by manually if GTG has necessary margin after completing automatic load sequence.

Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR

Table 8.3.1-4R (Sheet 3 of 4)

Electrical Load Distribution - Class 1E GTG Loading

C Class 1E GTG

	Load	Quantity Installed	Rated Output [kW]	Load Input [kW]	Efficiency [%]	Power Factor [%]	Load Factor [%]	LOCA Concurrent with a LOOP				LOOP								
												Hot Shutdown				Cold Shutdown				
								Quantity	[kW]	[kVAR]	[kVA]	Quantity	[kW]	[kVAR]	[kVA]	Quantity	[kW]	[kVAR]	[kVA]	
	C Safety Injection Pump	1	900	950	90	85	95	1	950	589	1118	0	-	-	-	0	-	-	-	
	C Component Cooling Water Pump	1	610	644	90	85	95	1	644	400	758	1	644	400	758	1	644	400	758	
~~CP~~STD COL 9.2(6)	C Essential Service Water Pump	1	650	686	90	85	95	1	686	427	808	1	686	427	808	1	686	427	808	CTS-01140
	C Containment Spray/Residual Heat Removal Pump	1	400	422	90	85	95	1	422	263	497	0	-	-	-	1	422	263	497	
	C Emergency Feed Water Pump	1	590	475	90	85	73	1	475	295	559	1	475	295	559	0	-	-	-	
	C Class 1E Electrical Room Air Handling Unit Fan	1	80	89	85	80	95	1	89	68	112	1	89	68	112	1	89	68	112	
	C Essential Chiller Unit	1	290	324	85	80	95	1	324	243	405	1	324	243	405	1	324	243	405	
	B Spent Fuel Pit Pump	1	230	257	85	80	95	0	-	-	-	1	(257)	(193)	(322)	1	(257)	(193)	(322)	
	C Class 1E Electrical Room Air Handling Unit Electrical Heater	1	250	250	100	100	100	0	-	-	-	0	-	-	-	0	-	-	-	
	C Pressurizer Heater (Back-up)	1	562	562	100	100	100	0	-	-	-	1	562	0	562	0	-	-	-	
~~CP~~STD COL 9.2(20)	C Essential Service Water Pump Cooling Tower Fan	2	150	168	85	80	95	2	336	252	420	2	336	252	420	2	336	252	420	CTS-01140
~~CP~~STD COL 9.2(20)	Motor Control Centers (C&D1)	2						2	320	199	377	2	270	168	318	2	270	168	318	CTS-01140
	Total								4246	2736	5054		3386	1853	3942		2771	1821	3318	

( ):This load is started by manually if GTG has necessary margin after completing automatic load sequence.

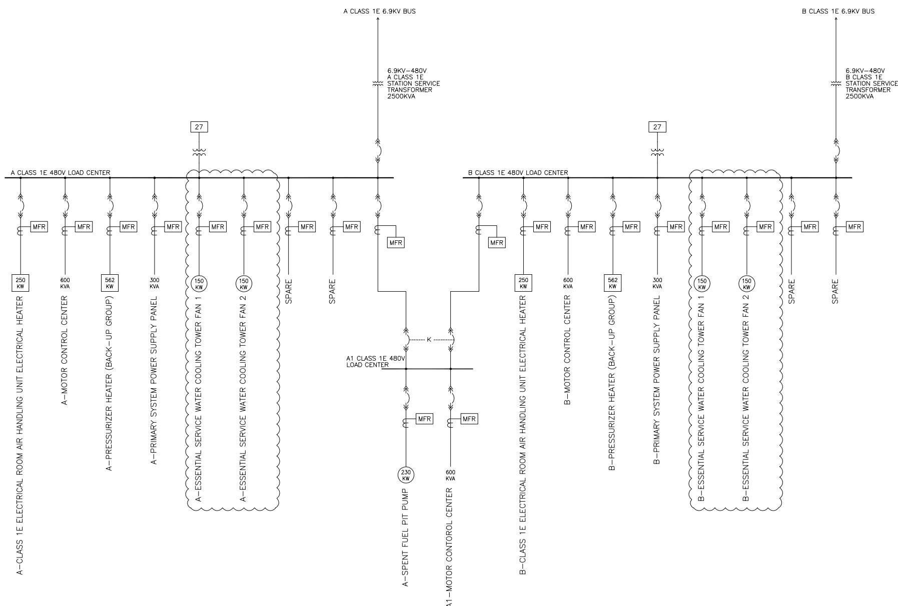
Table 8.3.1-4R (Sheet 4 of 4)

Electrical Load Distribution - Class 1E GTG Loading

D Class 1E GTG

	Load	Quantity Installed	Rated Output	Load Input	Efficiency	Power Factor	Load Factor	LOCA Concurrent with a LOOP				LOOP								
												Hot Shutdown				Cold Shutdown				
			[kW]	[kW]	[%]	[%]	[%]	Quantity	[kW]	[kVAR]	[kVA]	Quantity	[kW]	[kVAR]	[kVA]	Quantity	[kW]	[kVAR]	[kVA]	
	D Safety Injection Pump	1	900	950	90	85	95	1	950	589	1118	0	-	-	-	0	-	-	-	
	D Component Cooling Water Pump	1	610	644	90	85	95	1	644	400	758	1	644	400	758	1	644	400	758	
~~CP~~STD COL 9.2(6)	D Essential Service Water Pump	1	650	686	90	85	95	1	686	427	808	1	686	427	808	1	686	427	808	CTS-01140
	D Containment Spray/Residual Heat Removal Pump	1	400	422	90	85	95	1	422	263	497	0	-	-	-	1	422	263	497	
	D Charging Pump	1	820	866	90	85	95	0	-	-	-	1	866	537	1019	1	866	537	1019	
	D Class 1E Electrical Room Air Handling Unit Fan	1	80	89	85	80	95	1	89	68	112	1	89	68	112	1	89	68	112	
	D Essential Chiller Unit	1	290	324	85	80	95	1	324	243	405	1	324	243	405	1	324	243	405	
	B Spent Fuel Pit Pump	1	230	257	85	80	95	0	-	-	-	1	(257)	(193)	(322)	1	(257)	(193)	(322)	
	D Class 1E Electrical Room Air Handling Unit Electrical Heater	1	250	250	100	100	100	0	-	-	-	0	-	-	-	0	-	-	-	
	D Pressurizer Heater (Back-up)	1	562	562	100	100	100	0	-	-	-	1	562	0	562	0	-	-	-	
~~CP~~STD COL 9.2(20)	D Essential Service Water Pump Cooling Tower Fan	2	150	168	85	80	95	2	336	252	420	2	336	252	420	2	336	252	420	CTS-01140
~~CP~~STD COL 9.2(20)	Motor Control Centers (D&D1)	2						2	320	199	377	2	270	168	318	2	270	168	318	CTS-01140
	Total								3771	2441	4495		3777	2095	4402		3637	2358	4337	

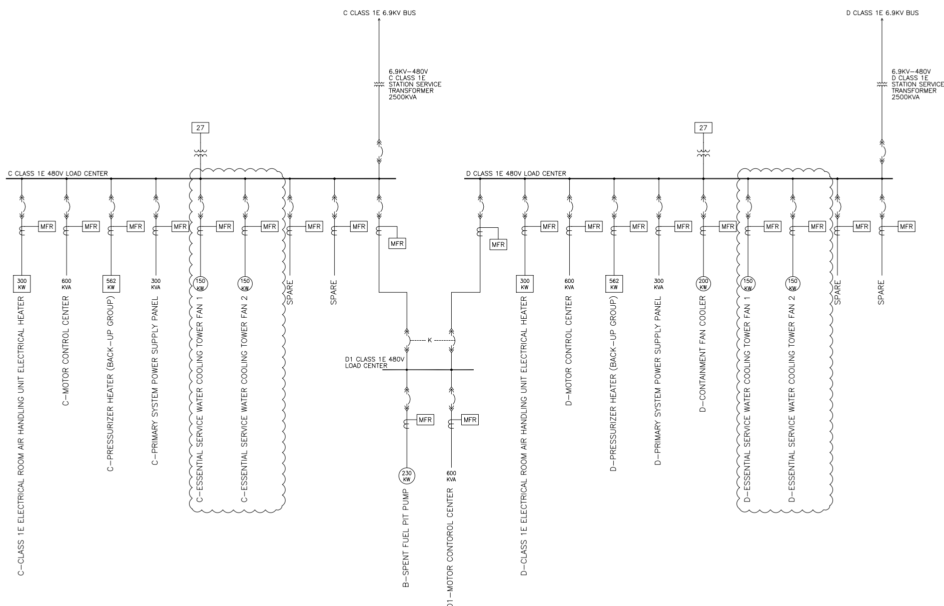
( ): This load is started by manually if GTG has necessary margin after completing automatic load sequence.



~~CP~~STD COL 9.2(20)

Figure 8.3.1-1R Onsite AC Electrical Distribution System (Sheet 5 of 7)
Class 1E 480V Buses A and B One Line Diagram

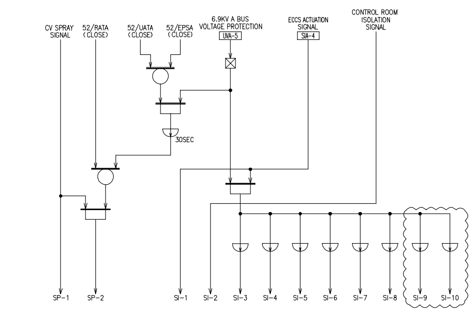
CTS-01140

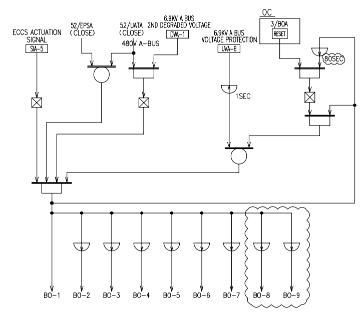


~~CP~~STD COL 9.2(20)

CTS-01140

Figure 8.3.1-1R Onsite AC Electrical Distribution System (Sheet 6 of 7)
Class 1E 480V Buses C and D One Line Diagram





STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
SP-1	MOV OPERATED BY SP SIGNAL	MCC(A TRAIN)	——	
SP-2	A-CONTAINMENT SPRAY / RESIDUAL HEAT REMOVAL PUMP	6.9KV A-BUS	30SEC	
SI-1	MOV OPERATED BY SI SIGNAL MOTOR CONTROL CENTER EQUIPMENT	MCC(A TRAIN) MCC-A,A1	——	※1
SI-2	MOTOR CONTROL CENTER EQUIPMENT	MCC-A,A1	——	※2
SI-3	A-SAFETY INJECTION PUMP	6.9KV A-BUS	5SEC	
SI-4	A-COMPONENT COOLING WATER PUMP A-ESSENTIAL CHILLED WATER PUMP	6.9KV A-BUS MCC-A	10SEC	
SI-5	A-ESSENTIAL SERVICE WATER PUMP	6.9KV A-BUS	15SEC	
SI-6	A-EMERGENCY FEED WATER PUMP	——	20SEC	
SI-7	A-CLASS 1E ELECTRICAL ROOM AIR HANDLING UNIT	480V A-BUS	40SEC	(NOTE2)
SI-8	A-ESSENTIAL CHILLER UNIT	480V A-BUS	50SEC	
SI-9	A-ESSENTIAL SERVICE WATER COOLING TOWER FAN 1	480V A-BUS	60SEC	
SI-10	A-ESSENTIAL SERVICE WATER COOLING TOWER FAN 2	480V A-BUS	70SEC	

STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
BO-1	MOTOR CONTROL CENTER EQUIPMENT	MCC-A	——	※3
BO-2	A-CHARGING PUMP	6.9KV A-BUS	5SEC	
BO-3	A-COMPONENT COOLING WATER PUMP	6.9KV A-BUS	10SEC	
BO-4	A-ESSENTIAL SERVICE WATER PUMP A-ESSENTIAL CHILLED WATER PUMP	6.9KV A-BUS MCC-A	15SEC	
BO-5	A-EMERGENCY FEED WATER PUMP	——	20SEC	
BO-6	A-CLASS 1E ELECTRICAL ROOM AIR HANDLING UNIT	480V A-BUS	30SEC	(NOTE2)
BO-7	A-ESSENTIAL CHILLER UNIT	480V A-BUS	40SEC	
BO-8	A-ESSENTIAL SERVICE WATER COOLING TOWER FAN 1	480V A-BUS	50SEC	
BO-9	A-ESSENTIAL SERVICE WATER COOLING TOWER FAN 2	480V A-BUS	60SEC	

※ 1	REMARKS
A-ANNULUS EMERGENCY EXHAUST FILTRATION UNIT FAN	
A-ANNULUS EMERGENCY EXHAUST FILTRATION UNIT	
A-SAFEGUARD COMPONENT AREA AIR HANDLING UNIT	(NOTE2)
A-CLASS 1E BATTERY ROOM EXHAUST FAN	
A-EMERGENCY FEED WATER PUMP(T/D) AREA AIR HANDLING UNIT	(NOTE2)

※ 2	REMARKS
A-MAIN CONTROL ROOM AIR HANDLING UNIT	
A-MAIN CONTROL ROOM EMERGENCY FILTRATION UNIT	
A-MAIN CONTROL ROOM EMERGENCY FILTRATION UNIT FAN	

※ 3	REMARKS
A-MAIN CONTROL ROOM AIR HANDLING UNIT	(NOTE2)
A-SAFEGUARD COMPONENT AREA AIR HANDLING UNIT	(NOTE2)
A-CLASS 1E BATTERY ROOM EXHAUST FAN	
A-EMERGENCY FEED WATER PUMP(T/D) AREA AIR HANDLING UNIT	(NOTE2)

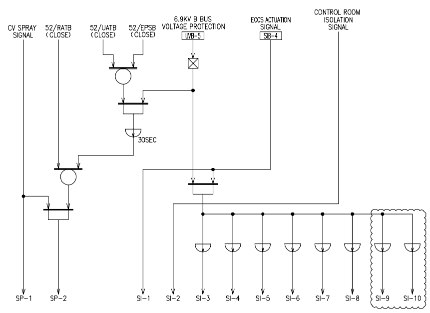
(NOTE1) TRAIN A
(NOTE2) HANDLING UNITS HAVE A FAN AND A REHEATING COIL. AFTER STARTING SIGNAL RECEIVING A FAN STARTS AND A REHEATING UNITS STARTS IF AREA TEMPERATURE MAKES SET VALUE.

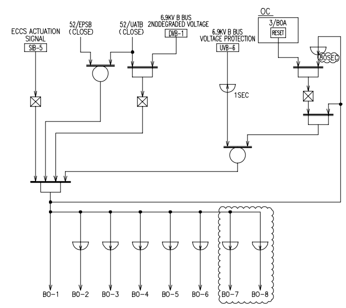
SH.NO.
6-1

~~CP~~ STDCOL 9.2(20)

Figure 8.3.1-2R Logic Diagrams (Sheet 18 of 24)
Class 1E Train A LOOP and LOCA Load Sequencing

CTS-01140





STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS	STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
SP-1	MOV OPERATED BY SP SIGNAL	MCC(B TRAIN)	—		SI-6	B-EMERGENCY FEED WATER PUMP	6.9KV B-BUS	20SEC	
SP-2	B-CONTAINMENT SPRAY / RESIDUAL HEAT REMOVAL PUMP	6.9KV B-BUS	30SEC		SI-7	B-CLASS 1E ELECTRICAL ROOM AIR HANDLING UNIT	480V B-BUS	40SEC	(NOTE2)
SI-1	MOV OPERATED BY SI SIGNAL MOTOR CONTROL CENTER EQUIPMENT	MCC(B TRAIN) MCC-B,A1	—	※1	SI-8	B-ESSENTIAL CHILLER UNIT	480V B-BUS	50SEC	
SI-2	MOTOR CONTROL CENTER EQUIPMENT	MCC-B,A1	—	※2	SI-9	B-ESSENTIAL SERVICE WATER COOLING TOWER FAN 1	480V B-BUS	60SEC	
SI-3	B-SAFETY INJECTION PUMP	6.9KV B-BUS	5SEC		SI-10	B-ESSENTIAL SERVICE WATER COOLING TOWER FAN 2	480V B-BUS	70SEC	
SI-4	B-COMPONENT COOLING WATER PUMP B-ESSENTIAL CHILLED WATER PUMP	6.9KV B-BUS MCC-B	10SEC						
SI-5	B-ESSENTIAL SERVICE WATER PUMP	6.9KV B-BUS	15SEC						

STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
BO-1	MOTOR CONTROL CENTER EQUIPMENT	MCC-B	—	※3
BO-2	B-COMPONENT COOLING WATER PUMP	6.9KV B-BUS	10SEC	
BO-3	B-ESSENTIAL SERVICE WATER PUMP B-ESSENTIAL CHILLED WATER PUMP	6.9KV B-BUS MCC-B	15SEC	
BO-4	B-EMERGENCY FEED WATER PUMP	6.9KV B-BUS	20SEC	
BO-5	B-CLASS 1E ELECTRICAL ROOM AIR HANDLING UNIT	480V B-BUS	30SEC	(NOTE2)
BO-6	B-ESSENTIAL CHILLER UNIT	480V B-BUS	40SEC	
BO-7	B-ESSENTIAL SERVICE WATER COOLING TOWER FAN 1	480V B-BUS	50SEC	
BO-8	B-ESSENTIAL SERVICE WATER COOLING TOWER FAN 2	480V B-BUS	60SEC	

※ 1	REMARKS
B-SAFEGUARD COMPONENT AREA AIR HANDLING UNIT	(NOTE2)
B-CLASS 1E BATTERY ROOM EXHAUST FAN	
B-EMERGENCY FEED WATER PUMP(M/D) AREA AIR HANDLING UNIT	(NOTE2)

※ 2	REMARKS
B-MAIN CONTROL ROOM AIR HANDLING UNIT	

※ 3	REMARKS
B-MAIN CONTROL ROOM AIR HANDLING UNIT	(NOTE2)
B-SAFEGUARD COMPONENT AREA AIR HANDLING UNIT	(NOTE2)
B-CLASS 1E BATTERY ROOM EXHAUST FAN	
B-EMERGENCY FEED WATER PUMP(M/D) AREA AIR HANDLING UNIT	(NOTE2)

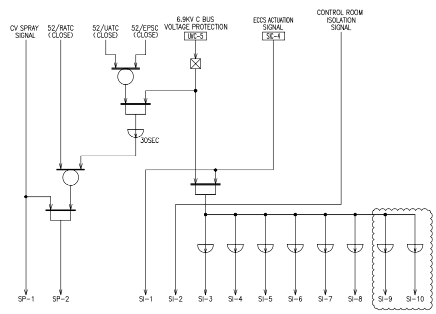
(NOTE1) TRAIN B
(NOTE2) HANDLING UNITS HAVE A FAN AND A REHEATING COIL. AFTER STARTING SIGNAL RECEIVING A FAN STARTS AND A REHEATING UNITS STARTS IF AREA TEMPERATURE MAKES SET VALUE.

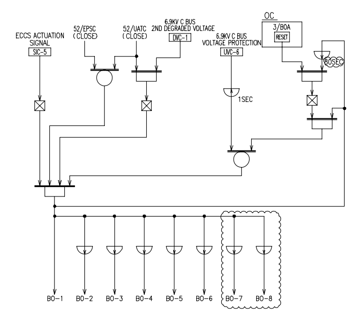
SH.NO.
6-2

~~CP~~STD COL 9.2(20)

Figure 8.3.1-2R Logic Diagrams (Sheet 19 of 24)
Class 1E Train B LOOP and LOCA Load Sequencing

CTS-01140





STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS	STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
SP-1	MOV OPERATED BY SP SIGNAL	MCC(C TRAIN)	—		SI-6	C-EMERGENCY FEED WATER PUMP	6.9KV C-BUS	20SEC	
SP-2	C-CONTAINMENT SPRAY / RESIDUAL HEAT REMOVAL PUMP	6.9KV C-BUS	30SEC		SI-7	C-CLASS 1E ELECTRICAL ROOM AIR HANDLING UNIT	480V C-BUS	40SEC	(NOTE2)
SI-1	MOV OPERATED BY SI SIGNAL MOTOR CONTROL CENTER EQUIPMENT	MCC(C TRAIN) MCC-C,D1	—	※1	SI-8	C-ESSENTIAL CHILLER UNIT	480V C-BUS	50SEC	
SI-2	MOTOR CONTROL CENTER EQUIPMENT	MCC-C,D1	—	※2	SI-9	C-ESSENTIAL SERVICE WATER COOLING TOWER FAN 1	480V C-BUS	60SEC	
SI-3	C-SAFETY INJECTION PUMP	6.9KV C-BUS	5SEC		SI-10	C-ESSENTIAL SERVICE WATER COOLING TOWER FAN 2	480V C-BUS	70SEC	
SI-4	C-COMPONENT COOLING WATER PUMP C-ESSENTIAL CHILLED WATER PUMP	6.9KV C-BUS MCC-C	10SEC						
SI-5	C-ESSENTIAL SERVICE WATER PUMP	6.9KV C-BUS	15SEC						

STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
BO-1	MOTOR CONTROL CENTER EQUIPMENT	MCC-C	—	※3
BO-2	C-COMPONENT COOLING WATER PUMP	6.9KV C-BUS	10SEC	
BO-3	C-ESSENTIAL SERVICE WATER PUMP C-ESSENTIAL CHILLED WATER PUMP	6.9KV C-BUS MCC-C	15SEC	
BO-4	C-EMERGENCY FEED WATER PUMP	6.9KV C-BUS	20SEC	
BO-5	C-CLASS 1E ELECTRICAL ROOM AIR HANDLING UNIT	480V C-BUS	30SEC	(NOTE2)
BO-6	C-ESSENTIAL CHILLER UNIT	480V C-BUS	40SEC	
BO-7	C-ESSENTIAL SERVICE WATER COOLING TOWER FAN 1	480V C-BUS	50SEC	
BO-8	C-ESSENTIAL SERVICE WATER COOLING TOWER FAN 2	480V C-BUS	60SEC	

※ 1	REMARKS
C-SAFEGUARD COMPONENT AREA AIR HANDLING UNIT	(NOTE2)
C-CLASS 1E BATTERY ROOM EXHAUST FAN	
C-EMERGENCY FEED WATER PUMP(M/D) AREA AIR HANDLING UNIT	(NOTE2)

※ 2	REMARKS
C-MAIN CONTROL ROOM AIR HANDLING UNIT	

※ 3	REMARKS
C-MAIN CONTROL ROOM AIR HANDLING UNIT	(NOTE2)
C-SAFEGUARD COMPONENT AREA AIR HANDLING UNIT	(NOTE2)
C-CLASS 1E BATTERY ROOM EXHAUST FAN	
C-EMERGENCY FEED WATER PUMP(M/D) AREA AIR HANDLING UNIT	(NOTE2)

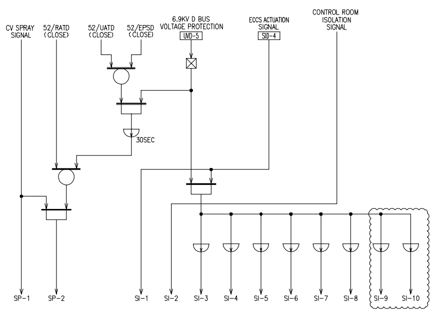
(NOTE1) TRAIN C
(NOTE2) HANDLING UNITS HAVE A FAN AND A REHEATING COIL. AFTER STARTING SIGNAL RECEIVING A FAN STARTS AND A REHEATING UNITS STARTS IF AREA TEMPERATURE MAKES SET VALUE.

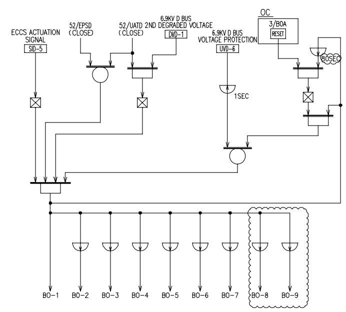
SH.NO. 6-3

~~CP~~STD COL 9.2(20)

Figure 8.3.1-2R Logic Diagrams (Sheet 20 of 24)
Class 1E Train C LOOP and LOCA Load Sequencing

CTS-01140





STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
SP-1	MOV OPERATED BY SP SIGNAL	MCC(D TRAIN)	——	
SP-2	D-CONTAINMENT SPRAY / RESIDUAL HEAT REMOVAL PUMP	6.9KV D-BUS	30SEC	
SI-1	MOV OPERATED BY SI SIGNAL MOTOR CONTROL CENTER EQUIPMENT	MCC(D TRAIN) MCC-D,D1	——	※1
SI-2	MOTOR CONTROL CENTER EQUIPMENT	MCC-D,D1	——	※2
SI-3	D-SAFETY INJECTION PUMP	6.9KV D-BUS	5SEC	
SI-4	D-COMPONENT COOLING WATER PUMP D-ESSENTIAL CHILLED WATER PUMP	6.9KV D-BUS MCC-D	10SEC	
SI-5	D-ESSENTIAL SERVICE WATER PUMP	6.9KV D-BUS	15SEC	

STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
SI-6	D-EMERGENCY FEED WATER PUMP	——	20SEC	
SI-7	D-CLASS 1E ELECTRICAL ROOM AIR HANDLING UNIT	480V A-BUS	40SEC	(NOTE2)
SI-8	D-ESSENTIAL CHILLER UNIT	480V A-BUS	50SEC	
SI-9	D-ESSENTIAL SERVICE WATER COOLING TOWER FAN 1	480V D-BUS	60SEC	
SI-10	D-ESSENTIAL SERVICE WATER COOLING TOWER FAN 2	480V D-BUS	70SEC	

STEP NO.	NAME	CONNECTED BUS	TIMER SET VALUE	REMARKS
BO-1	MOTOR CONTROL CENTER EQUIPMENT	MCC-D	——	※3
BO-2	B-CHARGING PUMP	6.9KV D-BUS	5SEC	
BO-3	D-COMPONENT COOLING WATER PUMP	6.9KV D-BUS	10SEC	
BO-4	D-ESSENTIAL SERVICE WATER PUMP D-ESSENTIAL CHILLED WATER PUMP	6.9KV D-BUS MCC-D	15SEC	
BO-5	D-EMERGENCY FEED WATER PUMP	——	20SEC	
BO-6	D-CLASS 1E ELECTRICAL ROOM AIR HANDLING UNIT	480V D-BUS	30SEC	(NOTE2)
BO-7	D-ESSENTIAL CHILLER UNIT	480V D-BUS	40SEC	
BO-8	D-ESSENTIAL SERVICE WATER COOLING TOWER FAN 1	480V D-BUS	50SEC	
BO-9	D-ESSENTIAL SERVICE WATER COOLING TOWER FAN 2	480V D-BUS	60SEC	

※ 1	REMARKS
B-ANNULUS EMERGENCY EXHAUST FILTRATION UNIT FAN	
B-ANNULUS EMERGENCY EXHAUST FILTRATION UNIT	
D-SAFEGUARD COMPONENT AREA AIR HANDLING UNIT	(NOTE2)
D-CLASS 1E BATTERY ROOM EXHAUST FAN	
D-EMERGENCY FEED WATER PUMP(T/D) AREA AIR HANDLING UNIT	(NOTE2)

※ 2	REMARKS
D-MAIN CONTROL ROOM AIR HANDLING UNIT	
D-MAIN CONTROL ROOM EMERGENCY FILTRATION UNIT	
D-MAIN CONTROL ROOM EMERGENCY FILTRATION UNIT FAN	

※ 3	REMARKS
D-MAIN CONTROL ROOM AIR HANDLING UNIT	(NOTE2)
D-SAFEGUARD COMPONENT AREA AIR HANDLING UNIT	(NOTE2)
D-CLASS 1E BATTERY ROOM EXHAUST FAN	
D-EMERGENCY FEED WATER PUMP(T/D) AREA AIR HANDLING UNIT	(NOTE2)

(NOTE1) TRAIN D
(NOTE2) HANDLING UNITS HAVE A FAN AND A REHEATING COIL. AFTER STARTING SIGNAL RECEIVING A FAN STARTS AND A REHEATING UNITS STARTS IF AREA TEMPERATURE MAKES SET VALUE.

SH.NO.
6-4

~~CP~~STD COL 9.2(20

Figure 8.3.1-2R Logic Diagrams (Sheet 21 of 24)
Class 1E Train D LOOP and LOCA Load Sequencing

CTS-01140

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”	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				and “sheet 2 of 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
CTS-01140	9.1.2.1 9.1.5.3 9.1.6 9.2.1.2.1 9.2.1.2.2 9.2.1.3 9.2.4.2.2.1 9.2.4.2.2.2 9.2.4.2.2.3 9.2.10	9.1-1 9.1-2 9.2-1 9.2-2 9.2-3 9.2-5 [9.2-6] 9.2-13 9.2-14 9.2-15 [9.2-18 through] [9.2-20]	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
	Table 9.2.1-1R 9.3.1.2.2.3 9.3.6 9.4.3.2.1 9.4.3.2.2 9.4.3.2.3 9.4.3.2.4 9.4.5.2.2 9.4.5.2.4 9.4.5.4.6 9.4.5.5.6 9.4.6.2.4.1 9.4.6.2.4.2 9.4.7 Figure 9.4-201 9.5.1 9.5.1.2 9.5.1.2.4 9.5.1.3 9.5.2 9.5.2.2.2 9.5.2.2.5.2 9.5.2.3 9.5.9 Table 9.5.1-1R (Sheet 1 through Sheet 16, 18, 19, 26, 35, 39, 40, 45, 47, 48 and 51 of 51) Table 9.5.1-2R Sheet 1 through 16, 23, 28, 29, 35, 36, 38 through 46, 49, 50, 61	9.2-16 [9.2-21] 9.3-2 9.4-1 through 9.4-6 [9.4-7] [9.4-8] 9.4-17 9.5-1 9.5-2 9.5-3 9.5-18 through 9.5-23 9.5-25 Through 9.5-40 9.5-42 9.5-43 9.5-50 9.5-59 9.5-63 9.5-64 9.5-69 9.5-71 9.5-72 9.5-75 9.5-76 Through 9.5-91 9.5-98 9.5-103 9.5-104 9.5-110 9.5-111			

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
	through 71 of 71) 9A.3 9A.3.101 Through 9A.3.114	9.5-113 Through 9.5-121 9.5-124 9.5-125 9.5-136 Through 9.5-146 9A-1 Through 9A-17			
CTS-01155	Table 9.5.1-2R (Sheet 5 of 71)	9.5-80	Erratum	Changed LMN to COL 9.5(1) to be consistent with Subsection 9.5.1.6	4

*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.

9.0 AUXILIARY SYSTEMS

9.1 FUEL STORAGE AND HANDLING

This section of the referenced design control document (DCD) is incorporated by reference with the following departures and/or supplements.

9.1.2.1 Design Bases

Replace the last sentence of the last paragraph in DCD Subsection 9.1.2.1 with the following.

~~CP~~STD COL 9.1(9)

A procedure that will instruct the operator to perform formal inspection of the integrity of the spent fuel racks will be established prior to first fuel load. CTS-01140

9.1.5.3 Safety Evaluation

Replace the last paragraph in DCD Subsection 9.1.5.3 with the following.

~~CP~~STD COL 9.1(6)

To assure proper handling of heavy loads during the plant life, a Heavy Load Handling Program, including associated procedural and administrative controls, will be established prior to first fuel load. The program will satisfy commitments made in Subsection 9.1.5 of the DCD, and meet the guidance of ANSI/ASME B30.2, ANSI/ASME B30.9, ANSI N14.6, ASME NOG-1, CMMA Specification 70-2000, NUREG-0554, NUREG-0612, and NUREG-0800, Section 9.1.5. The Heavy Load Handling Program will include consideration of temporary cranes and hoists. The Heavy Load Handling Program will adopt a defense-in-depth strategy to enhance safety when handling heavy loads. For instance, the program will restrict lift heights to practical minimums and limit lifting activities as much as practical to plant modes in which load drops have a small potential for adverse consequences, particularly when critical loads are being handled. Further, prior to the lifting of heavy loads after initial fuel loading, the program will institute additional reviews to assure that potential drops of these loads due to inadvertent operations or equipment malfunctions, separately or in combination, will not jeopardize safe shutdown functions, cause a significant release of radioactivity, a criticality accident, or inability to cool fuel within the reactor vessel or spent fuel pit. CTS-01140

9.1.6 Combined License Information

Replace the content of DCD Subsection 9.1.6 with the following.

~~CP COL 9.1(1)~~

9.1(1) *Deleted from the DCD.* CTS-01140

9.1(2) *Deleted from the DCD.*

9.1(3) *Deleted from the DCD.*

9.1(4) *Deleted from the DCD.*

9.1(5) *Deleted from the DCD.*

STD COL 9.1(6) ***9.1(6)*** *The establishment of a Heavy Load Handling Program* CTS-01140

This COL item is addressed in Subsection 9.1.5.

9.1(7) *Deleted from the DCD.*

9.1(8) *Deleted from the DCD.*

~~CP~~STD COL 9.1(9) ***9.1(9)*** *The establishment of an inspection procedure of spent fuel rack integrity* CTS-01140

This COL item is addressed in Subsection 9.1.2.

9.2 WATER SYSTEMS

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

9.2.1.2.1 General Description

~~CP~~STD COL 9.2(7) Replace the first sentence of the first paragraph in DCD Subsection 9.2.1.2.1 with the following. CTS-01140

Figure 9.2.1-1R shows the piping and instrumentation diagrams (P&IDs) of the essential service water system (ESWS).

~~CP~~STD COL 9.2(25) Replace the eighth paragraph in DCD 9.2.1.2.1 with the following: CTS-01140

Proper filling and venting procedures are followed to minimize the occurrence of water hammer and mitigate its effects. These are included in the Operating and Maintenance Procedures mentioned in Subsection 13.5.2.1

~~CP~~STD COL 9.2(8) Replace the eleventh paragraph in DCD Subsection 9.2.1.2.1 with the following. CTS-01140

Chemicals are added to the basin to control corrosion, scaling, and biological growth. The water chemistry is managed through a Chemistry Control Program such as following a standard Langelier Saturation Index. The chemical injection system is described in Subsection 10.4.5.2.2.8. CTS-01140

Blowdown is used to maintain acceptable water chemistry composition. This is accomplished by tapping each essential service water pump (ESWP) discharge header. Additional description about blowdown is discussed in Subsection 9.2.5.2. CTS-01140

~~CP~~STD COL 9.2(7) Replace the twelfth paragraph in DCD Subsection 9.2.1.2.1 with the following.

The non-safety-related portion of the ESWS begins at the discharge side of the strainer and CCW heat exchangers vent and drain valves. The positions of these valves are controlled by the Operating and Maintenance Procedures mentioned in Subsection 13.5.2.1 in order to maintain water-tight conditions and prevent inadvertent draining of the ESW.

~~CP~~STD COL 9.2(26) Replace the thirteenth paragraph in DCD 9.2.1.2.1 with the following: CTS-01140

Maintenance and test procedures (see Operating and Maintenance Procedures in Subsection 13.5.2.1) are followed to monitor and flush debris accumulated in the system.

~~CP~~STD COL 9.5(2) Replace the last paragraph in DCD Subsection 9.2.1.2.1 with the following. CTS-01140

Each of the essential service water (ESW) lines in the reactor building (R/B) and in the UHS ESW pump house is tapped to supply water to the fire protection water supply system (FSS), if required, after the safe-shutdown earthquake (SSE). Manually operated locked closed valves are provided in each of the tapped connections to draw water for the FSS.

9.2.1.2.2 Component Description

~~CP~~STD COL 9.2(6) Replace the sentence in DCD Subsection 9.2.1.2.2 with the following. CTS-01140

Table 9.2.1-1R shows the design parameters of the major components in the system.

9.2.1.2.2.1 ESWPs

CP COL 9.2(6) Replace the second sentence of the third paragraph in DCD Subsection 9.2.1.2.2.1 with the following.

Total dynamic head (TDH) of the ESWP is 220 feet. Total calculated system head losses including static lift are approximately 190 feet. This provides ample margin. RCOL2_09.02.01-1 Available net positive suction head (NPSH) with the lowest expected water level (after 30 days of accident mitigation) in the basin is approximately 40 feet. Available NPSH is based on the lowest expected water level in the ESWP intake basin of approximately 12 feet and as 95 degrees F water temperature. RCOL2_09.02.01-1

9.2.1.3 Safety Evaluation

~~CP~~STD COL 9.2(1) Replace the twelfth paragraph in DCD Subsection 9.2.1.3 with the following. CTS-01140

Design of the basin provides adequate submergence of the pumps to assure the NPSH for the pumps. The basin is divided into two levels. One is approximately 12 feet lower than the other, and directly above it is installed the ESWP. The ESWP is designed to operate with the lowest expected water level (after 30 days of accident mitigation). The basins have sufficient water inventory to assure adequate cooling and NPSH for 30 days without makeup. This is discussed further in Subsection 9.2.5.2. CTS-01140

Recovery procedures contained in the Operating and Maintenance Procedures (see Subsection 13.5.2.1) are implemented if the UHS approaches low water level.

CP COL 9.2(2) Replace the thirteenth paragraph in DCD Subsection 9.2.1.3 with the following.

The lowest ambient temperature anticipated at the site does not result in the freezing of the ESW in the basin or the piping for the following reasons:

- The basins are located below grade and thus ground temperature maintains water from freezing.
- In the operating trains, water is continuously circulated which helps to prevent freezing. Ultimate heat sink (UHS) transfer pumps can be used to circulate water from the idle basins. Plant procedures are developed to operate the pumps in this mode based on the basin water and ambient temperatures. RCOL2_09.02.01-2
- UHS ESW pump house ventilation system maintains pre determined minimum temperature in the pump house areas. This is further described in Subsection 9.4.
- Any exposed essential piping that may be filled with water while the pump is not operating is heat traced. The heat tracing is activated when the thermostat senses a pre-set low ambient temperature. RCOL2_09.02.01-2

For the thermal overpressure protection of the component cooling water heat exchanger ESW side, the valves located at the component cooling water heat exchanger ESW side inlet and outlet lines are administratively locked open valves. These locked open valves assure protection from the thermal overpressurization due to the erroneous valve operation coincident with the heat input from the component cooling water (CCW) side to ESW side. During backflush operation of the heat exchanger, essential service water flows from the discharge side of the heat exchanger and then exits from the inlet side to the discharge header. Cooling operation is continued and there is no overpressurization. RCOL2_09.02.01-2

~~CP~~STD COL 9.2(7) Replace the last two paragraphs in DCD Subsection 9.2.1.3 with the following. CTS-01140

The ESWS serves as a backup source of water for the FSS in the R/B and in the ESWP house. This is in conformance with the requirement for an alternative fire protection water supply from a seismic category I water system in the event of a safe-shutdown earthquake, in accordance with RG 1.189. Two hose stations at approximately 150 gpm total take water from the ESWS for a maximum of two hours. Approximately 18,000 gallons is consumed by the FSS. The ESWS is not required to supply water to FSS during any other design basis event including LOCA. This water volume has minimal impact on the UHS water inventory and does not jeopardize the 30 day capacity requirement. Administratively locked closed valves in each of the fire protection water supply taps assure that water inventory loss is controlled. RCOL2_09.02.01-5

The sanitary drainage system collects sanitary wastes from potable and non-potable water usage, from various plant areas such as restrooms and locker rooms. The waste is then drained to the 100,000-gpd sanitary wastewater treatment plant and 15 cu. ft. sludge dewatering filter press unit. The effluent is processed for disinfection and odor reduction and discharged to the Squaw Creek Reservoir. The sewage sludge is transferred to a truck for off-site landfill disposal. The sanitary drainage system does not serve any facilities in the radiologically controlled areas.

9.2.4.2.2.1 Potable Water Storage Tank

~~CP~~STD COL 9.2(9) ~~CP~~STD COL 9.2(15) CTS-01140

Replace DCD Subsection 9.2.4.2.2.1 with the following.

Not applicable~~ to CPNPP Units 3 and 4~~.

9.2.4.2.2.2 Potable Water Pumps

~~CP~~STD COL 9.2(9) ~~CP~~STD COL 9.2(15) CTS-01140

Replace DCD Subsection 9.2.4.2.2.2 with the following.

Not applicable~~ to CPNPP Units 3 and 4~~.

9.2.4.2.2.3 Jockey Pump

~~CP~~STD COL 9.2(9) ~~CP~~STD COL 9.2(15) CTS-01140

Replace DCD Subsection 9.2.4.2.2.3 with the following.

Not applicable~~ to CPNPP Units 3 and 4~~.

9.2.4.2.2.4 Hot Water Heaters

RCOL2_09.02.04-3

CP COL 9.2(13)

Replace DCD Subsection 9.2.4.2.2.4 with the following.

Local potable water hot water heaters are used to provide hot water to building-specific areas based on their requirements. Water from the source (Somervell County Water District) is supplied to the hot water heaters, and is then routed to the shower and toilet areas and to other plumbing fixtures and equipment requiring domestic hot water service. Local electric water heaters are provided as required to serve restricted or possible contaminated areas such as the MCR. Point-of-use, inline electric water heating elements are used to generate hot water for the MCR and the T/B areas.

9.2.4.2.3 System Operation

CP COL 9.2(13)

Replace the first, second and third paragraphs in DCD Subsection 9.2.4.2.3 with the following.

The operating and maintenance procedures regarding water hammer are included in system operating procedures in Subsection 13.5.2.1. A milestone schedule for implementation of the procedures is also included in Subsection 13.5.2.1.

9.2.10 Combined License Information

Replace the content of DCD Subsection 9.2.10 with the following.

CP COL9.2(1) ***9.2(1)*** *The evaluation of ESWP at the lowest probable water level of the UHS and the recovery procedures when UHS approaches low water level*

This COL item is addressed in Subsection 9.2.1.3.

CP COL 9.2(2) ***9.2(2)*** *The protection against adverse environmental, operating and accident condition that can occur such as freezing, thermal over pressurization*

This COL item is addressed in Subsection 9.2.1.3.

CP COL 9.2(3) ***9.2(3)*** *Source and location of the UHS*

This COL item is addressed in Subsection 9.2.5.2.

CP COL 9.2(4) ***9.2(4)*** *The location and design of the ESW intake structure*

This COL item is addressed in Subsection 9.2.5.2.

CP COL 9.2(5) ***9.2(5)*** *The location and the design of the discharge structure*

This COL item is addressed in Subsection 9.2.5.2.

CP COL 9.2(6) STD COL 9.2(6) ***9.2(6)*** *The ESWP design details – required total dynamic head, NPSH available, and the mode of cooling the pump motor.* RCOL2_09.02.01-4 CTS-01140

This COL item is addressed in Subsection 9.2.1.2.2, 9.2.1.2.2.1, ~~and~~ Table 9.2.1-1R, and 9.4.5.1.1.6.

CP COL 9.2(7) STD COL 9.2(7) ***9.2(7)*** *The design of ESWS related with the site specific UHS* CTS-01140

This COL item is addressed in Subsections 9.2.1.2.1, 9.2.1.3~~, 9.2.1.5.4~~ and Figure 9.2.1-1R. RCOL2_09.02.01-4

~~CP~~STD COL 9.2(8) ***9.2(8)*** *The ESW specific chemistry requirements* CTS-01140

This COL item is addressed in Subsection 9.2.1.2.1.

CP COL 9.2(9) STD COL 9.2(9) ***9.2(9)*** *The storage capacity and usage of the potable water* CTS-01140

This COL item is addressed in Subsections 9.2.4.1, 9.2.4.2.2.1, 9.2.4.2.2.2 and 9.2.4.2.2.3.

CP COL 9.2(10) ***9.2(10)*** *State and Local Department of Health and Environmental Protection Standards*

This COL item is addressed in Subsection 9.2.4.1.

CP COL 9.2(11) ***9.2(11)*** *Source of potable water to the site and the necessary required treatment*

This COL item is addressed in Subsections 9.2.4.1, 9.2.4.2.1 and Figure 9.2.4-1R.

CP COL 9.2(12) ***9.2(12)*** *Sanitary waste treatment*

This COL item is addressed in Subsections 9.2.4.1 and 9.2.4.2.1.

CP COL 9.2(13) ***9.2(13)*** *Supply of water (city or on-site wells of another) and the system*

operation.

This COL item is addressed in Subsections 9.2.4.2.3, 9.2.4.4 and 9.2.4.5.

CP COL 9.2(14) ***9.2(14)*** *Potable and sanitary water system components data*

This action is addressed in Subsections 9.2.4.2.1 and Table 9.2.4-1R.

CP COL 9.2(15) STD COL 9.2(15) ***9.2(15)*** *Total number of people at the site, the usage capacity and sizing of the potable water tank and associated pumps.* CTS-01140

This COL item is addressed in Subsections 9.2.4.1, 9.2.4.2.2.1, 9.2.4.2.2.2 and 9.2.4.2.2.3.

CP COL 9.2(16) ***9.2(16)****Values to the component based on calculations*

This COL item is addressed in Table 9.2.4-1R.

CP COL 9.2(17) ***9.2(17)****Sanitary lift stations and the sizing the appropriate interfaces*

This COL item is addressed in Subsections 9.2.4.1 and 9.2.4.2.3.

CP COL 9.2(18) ***9.2(18)*** *The type of the UHS based on specific site conditions and meteorological data*

This COL item is addressed in Subsections 9.2.5.1 and 9.2.5.2.

CP COL 9.2(19) ***9.2(19)*** *The design of the electrical power supply to the UHS*

This COL item is addressed in Subsection 9.2.5.2.

CP COL 9.2(20) ***9.2(20)*** *The description and the P&ID of the UHS*

This COL item is addressed in Subsections 9.2.5.2, Table 9.2.5-201 and Figure 9.2.5-201.

CP COL 9.2(21) ***9.2(21)*** *The source of makeup water to the UHS and the blowdown discharge location*

This COL item is addressed in Subsections 9.2.5.2.

CP COL 9.2(22) ***9.2(22)*** *The UHS capability and safety evaluation*

This COL item is addressed in Subsection 9.2.5.3 and Table 9.2.5-202.

CP COL 9.2(23) ***9.2(23)*** *The test and inspection requirements of the UHS*

This COL item is addressed in Subsection 9.2.5.4.

CP COL 9.2(24) ***9.2(24)*** *The required alarms, instrumentation and controls of the UHS system*

This COL item is addressed in Subsection 9.2.5.5.

~~CP~~STD COL 9.2(25) ***9.2(25)*** *The operating and maintenance procedures to address water hammer issues* CTS-01140

This COL item is addressed in Subsections 9.2.1.2.1 and 13.5.2.1.

~~CP~~STD COL 9.2(26) ***9.2(26)*** *Maintenance and test procedures to monitor and flush out debris* CTS-01140

This COL item is addressed in Subsections 9.2.1.2.1 and 13.5.2.1.

STD COL 9.2(27) ***9.2(27)*** *Operating and maintenance procedures of water hammer prevention*

This COL Item is addressed in Subsection 9.2.2.2.2.6 and 9.2.7.2.1.

Table 9.2.1-1R

Essential Service Water System Component Design Data

Essential Service Water Pump		
Quantity	4	
Type	Vertical, centrifugal, mixed flow	
Design flow rate	13,000 gpm	
~~CP~~STD COL 9.2(6) Design Head	220 feet	CTS-01140
Design pressure	150 psig	
Design temperature	140 ° F	
Materials	Stainless steel	
Equipment Class	3	

Essential Service Water Pump Outlet Strainer	
Quantity	8
Design flow rate	13,000 gpm
Design pressure	150 psig
Design temperature	140 °F
Equipment Class	3

Component Cooling Water Heat Exchanger Inlet Strainer	
Quantity	4
Design flow rate	11,500 gpm
Design pressure	150 psig
Design temperature	140 °F
Equipment Class	3

Essential Service Water Pump Discharge Valve	
Quantity	4
Design flow rate	13,000 gpm
Design pressure	150 psig
Design temperature	140 °F
Equipment Class	3

The carbon dioxide gas is supplied from the carbon dioxide gas cylinders located close to the equipment if practical or in the compressed gas farm. The carbon dioxide gas cylinders in the gas farm supply carbon dioxide gas to both units.

Miscellaneous Gases

Other gases for the oxygen gas analyzer and the automatic gas analyzers are supplied from gas cylinders located close to the analyzers.

Figure 9.3.1-201 shows the Hydrogen and Nitrogen Gas Supply Configuration.

9.3.1.2.2.3 Compressed Gas System

~~CP~~STD COL 9.3(1)

Replace the content of DCD Subsection 9.3.1.2.2.3 with the following. CTS-01140

The compressed gas system consists of gas sources as described in Subsection 9.3.1.2.1.3 and the distribution headers, distribution piping, and the associated valves and instrumentation.

9.3.6 Combined License Information

Replace the content of DCD Subsection 9.3.6 with the following.

CP COL 9.3(1)
STD COL 9.3(1)

9.3(1) *Compressed Gas System*

This COL item is addressed in Subsection 9.3.1.2.1.3, 9.3.1.2.2.3 and Figure 9.3.1-201. CTS-01140

9.3(2) *Deleted from the DCD.*

9.3(3) *Deleted from the DCD.*

9.3(4) *Deleted from the DCD.*

9.3(5) *Deleted from the DCD.*

9.3(6) *Deleted from the DCD.*

9.3(7) *Deleted from the DCD.*

9.4 AIR CONDITIONING, HEATING, COOLING, AND VENTILATION SYSTEMS

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

9.4.1.2 System Description

CP COL 9.4(4) Replace the second sentence of the first paragraph in DCD Subsection 9.4.1.2 with the following.

The capacity of heating coils that are affected by site specific conditions is shown in Table 9.4-201. The site specific design basis for the heating coils is described in DCD Subsections 9.4.1.1 and 9.4.1.2 with the following site specific information. While the temperatures ranges for the Main Control Room is provided in DCD Table 9.4-1 and the design data for the air handling units is provided in DCD Table 9.4.1-1, the outside air temperature for CPNPP used to calculate the heater capacity is -0.5°F. The outside air is blended with the return air from the Main Control Room. RCOL2_09.04.01-1

9.4.3.2.1 Auxiliary Building HVAC System

~~CP~~STD COL 9.4(4) Replace the second sentence of the first paragraph in DCD Subsection 9.4.3.2.1 with the following. CTS-01140

The capacity of cooling and heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.3.2.2 Non-Class 1E Electrical Room HVAC System

~~CP~~STD COL 9.4(4) Replace the second sentence of the first paragraph in DCD Subsection 9.4.3.2.2 with the following. CTS-01140

The capacity of cooling and heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.3.2.3 Main Steam/Feedwater Piping Area HVAC System

~~CP~~STD COL 9.4(4)

Replace the second sentence of the first paragraph in DCD Subsection 9.4.3.2.3 with the following. CTS-01140

The capacity of cooling and heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.3.2.4 Technical Support Center HVAC System

~~CP~~STD COL 9.4(4)

Replace the second sentence of the first paragraph in DCD Subsection 9.4.3.2.4 with the following. CTS-01140

The capacity of cooling and heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.5 Engineered Safety Feature Ventilation System

CP COL 9.4(6)

Delete the third paragraph and insert the following text to the end of the list of ESF ventilation systems in first paragraph of DCD Subsection 9.4.5.

- UHS ESW Pump House Ventilation System

CP COL 9.4(6)

Add the following new subsection after DCD Subsection 9.4.5.1.1.5.

9.4.5.1.1.6 UHS ESW Pump House Ventilation System

The UHS ESW pump house ventilation system provides and maintains the proper environmental conditions within the required temperature range ~~(~~of 40°F – 120°F~~)~~ to support the operation of the instrumentation and control equipment and components in the individual UHS ESW pump houses during a design basis accident and LOOP. The ventilation system is designed based on the ~~with~~ outside ambient design temperature conditions (-5°F – 112°F) ~~of~~using 0% temperature exceedance values. RCOL2_09.04.05-7 RCOL2_09.04.05-7

The ESWP is installed at a location in the pump house where cooling air is adequately being circulated for cooling the ESWP motor. RCOL2_09.02.01-4

9.4.5.2.2 Class 1E Electrical Room HVAC System

~~CP~~STD COL 9.4(4)

Replace the second sentence of the first paragraph in DCD Subsection 9.4.5.2.2 with the following. CTS-01140

The capacity of heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.5.2.3 Safeguard Component Area HVAC System

CP COL 9.4(4)

Replace the third sentence of the second paragraph in DCD Subsection 9.4.5.2.3 with the following.

The capacity of heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.5.2.4 Emergency Feedwater Pump Area HVAC System

~~CP~~STD COL 9.4(4)

Replace the fourth sentence of the second paragraph in DCD Subsection 9.4.5.2.4 with the following. CTS-01140

The capacity of heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.5.2.5 Safety Related Component Area HVAC System

CP COL 9.4(4)

Replace the third sentence of the second paragraph in DCD Subsection 9.4.5.2.5 with the following.

The capacity of heating coils that are affected by site specific conditions is shown in Table 9.4-201.

~~CP~~STD COL 9.4(6)

Add the following new subsection after DCD Subsection 9.4.5.4.5. CTS-01140

9.4.5.4.6 UHS ESW Pump House Ventilation System

The general requirements in Subsection 9.4.5.4 apply.

~~CP~~STD COL 9.4(6)

Add the following new subsection after DCD Subsection 9.4.5.5.5. CTS-01140

9.4.5.5.6 UHS ESW Pump House Ventilation System

The following instrumentation serving the UHS ESW pump houses includes:

- Alarm on low airflow for ESW pump room or UHS transfer pump room.
- Indication of the status of the exhaust fans.
- Alarm on high room temperature in ESW pump room or UHS transfer pump room.
- Alarm on low room temperature in ESW pump room or UHS transfer pump room.
- Temperature switches for control of ESW pump room and UHS transfer pump room exhaust fans and heaters. RCOL2_09.04.05-10

9.4.6.2.4.1 Containment Low Volume Purge System

~~CP~~STD COL 9.4(4)

Replace the second sentence of the first paragraph in DCD Subsection 9.4.6.2.4.1 with the following. CTS-01140

The capacity of cooling and heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.6.2.4.2 Containment High Volume Purge System

~~CP~~STD COL 9.4(4)

Replace the second sentence of the first paragraph in DCD Subsection 9.4.6.2.4.2 with the following. CTS-01140

The capacity of cooling and heating coils that are affected by site specific conditions is shown in Table 9.4-201.

9.4.7 Combined License Information

Replace the content of DCD Subsection 9.4.7 with the following.

9.4(1) *Deleted from the DCD.*

9.4(2) *Deleted from the DCD.*

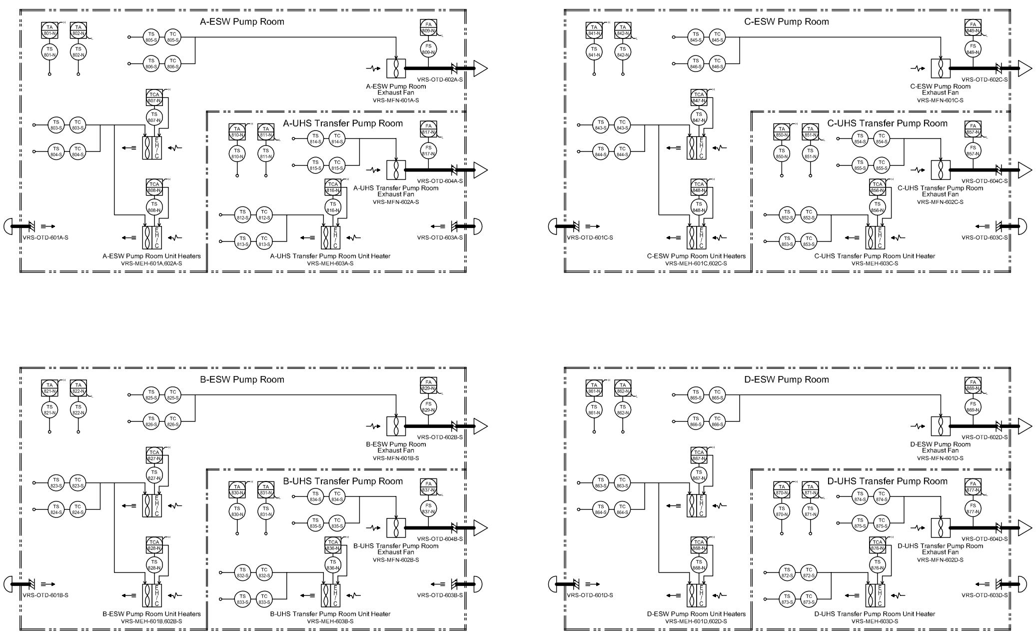
9.4(3) *Deleted from the DCD.*

CP COL 9.4(4) STD COL 9.4(4) ***9.4(4)*** *Capacity of cooling and heating coils that are affected by site specific conditions* CTS-01140
This COL item is addressed in Subsections 9.4.1.2, 9.4.3.2.1, 9.4.3.2.2, 9.4.3.2.3, 9.4.3.2.4, 9.4.5.2.2, 9.4.5.2.3, 9.4.5.2.4, 9.4.5.2.5, 9.4.6.2.4.1, 9.4.6.2.4.2 and Table 9.4-201.

9.4(5) *Deleted from the DCD.*

CP COL 9.4(6) STD COL 9.4(6) ***9.4(6)*** *Information of UHS ESW pump house ventilation system*
This COL item is addressed in Subsections 9.4.5, 9.4.5.1.1.6, 9.4.5.2.6, 9.4.5.3.6, 9.4.5.4.6, 9.4.5.5.6, Table 9.4-202 and Figure 9.4-201. CTS-01140

MAP-00-201



NOTE

1. ALL FANS, DAMPERS AND HEATERS IN THIS SHEET ARE DESIGNATED IN ACCORDANCE WITH SEISMIC CATEGORY I.
2. BACKDRAFT DAMPERS ARE MOUNTED IN THE WALL OPENING.
3. NO SYSTEM DUCTWORK IS INSTALLED.
4. EXHAUST FANS ARE WALL-MOUNTED.

REMARK:
PLANT DESIGNATION OF EQUIPMENT AND VALVE NUMBERS ARE OMITTED IN THIS DRAWING.
~~STD~~ VRS - ### - ***

RCOL2_09.04.05-3
CTS-01140

~~CP~~STD COL 9.2(6)

Figure 9.4-201 UHS ESW Pump House Ventilation System Flow Diagram

9.5 OTHER AUXILIARY SYSTEMS

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

9.5.1 Fire Protection Program

~~CP~~STD COL 9.5(1)

Replace the third sentence of the second paragraph in DCD Subsection 9.5.1 with the following. CTS-01140

The fire protection program (FPP) and implementation of FPP elements ~~for CPNPP Units 3 and 4~~ are presented in Subsection 9.5.1.6. CTS-01140

9.5.1.2 System Description

~~CP~~STD COL 9.5(1)

Replace the fourth paragraph in DCD Subsection 9.5.1.2 with the following. CTS-01140

Table 9.5.1-1R is a point-by-point comparison of the conformance of the fire protection program with the guidelines of RG 1.189. Table 9.5.1-2R is a point-by-point comparison of the conformance of the fire protection program with the guidelines of NFPA 804 (Reference 9.5.1-14).

9.5.1.2.1 Facility Features for Fire Protection

CP COL 9.5(2)

Replace the eighteenth paragraph in DCD Subsection 9.5.1.2.1 with the following.

Outdoor oil-filled transformers for CPNPP Units 3 and 4 are separated from the T/B with a 3-hour fire rated barrier. A 1-hour fire rated barrier is located between each transformer. Each of the main transformers, unit auxiliary transformers, reserve auxiliary transformers and main generator excitation transformer is protected with a thermally activated automatic water spray system. The transformer arrangement follows the guidance of RG 1.189 and NFPA 804. Provision for drainage and oil spill containment is in accordance with NFPA 804 and IEEE 980 (Reference 9.5.1-206)

9.5.1.2.2 Fire Protection Water Supply System

CP COL 9.5(2)

Replace the third paragraph in DCD Subsection 9.5.1.2.2 with the following.

The fire protection water supply system (FSS) for CPNPP Units 3 and 4 is depicted in Figure 9.5.1-201. The make-up capability for the storage tanks from the water treatment system is capable of refilling an empty tank within an eight-hour period. Each storage tank has sufficient capacity to support two hours of the largest sprinkler system operation plus hose stream allowances and provides excess capacity to support normal operations without affecting the amount of water reserved for the design requirements. This allows system testing and periodic activities, such as hydrant flushing, without adversely affecting the ability to retain sufficient water to meet the total system design flow requirement in the event of a fire. The fire water storage tank design complies with NFPA 22.

The design parameters associated with primary fire protection water supply equipment are the followings.

- The total rated head of fire pumps are 350 feet of water at a flow of 2500 gpm
- The water storage for largest sprinkler system operation and hose streams is 318,180 gallons
- The eight-hour storage refill requirement is 318,180 gallons
- The storage tank nominal capacity is 500,000 gallons

9.5.1.2.3 Fire Water Supply Piping, Yard Piping, and Yard Hydrants

---

CP COL 9.5(2)

Replace the seventh paragraph in DCD Subsection 9.5.1.2.3 with the following.

The yard main loop is shown in Figure 9.5.1-202. The underground yard piping is 12-inch diameter high-density polyethylene piping that is very resistant to corrosion and biofouling. A minimum of 6-inch diameter piping supplies each hydrant and is provided with an isolation valve for hydrant servicing. Building feeds have a minimum 8-inch diameter.

9.5.1.2.4 Manual Suppression Means

~~CP~~STD COL 9.5(2)

Replace the second and third sentences of third paragraph in DCD Subsection 9.5.1.2.4 with the following. CTS-01140

That standpipe can be isolated from the normal fire protection water source after a SSE and the standpipe can be aligned to the ESWS for water supply of at least two hose streams of 75 gpm each. To support two hours operation of these hose streams, the ESWS is designed to supply at least 18,000 gallons for this need.

9.5.1.3 Safety Evaluation

~~CP~~STD COL 9.5(1)

Replace the eight paragraph in DCD Subsection 9.5.1.3 with the following. CTS-01140

The Final FHA and safe-shutdown evaluation based on the final plant cable routing, fire barrier ratings, fire loading, ignition sources, purchased equipment and equipment arrangement will be performed. The final FHA and safe-shutdown evaluation will include a review against the assumptions and requirements stated in the initial FHA and safe-shutdown evaluation. The final FHA and safe-shutdown evaluation will also include a detailed post-fire safe-shutdown circuit analysis performed and documented using a methodology similar to that described in NEI 00-01, "Guide for Post-Fire Safe-Shutdown Circuit Analysis," using as-built data. The final FHA will be performed in accordance with Table 13.4-201.

CP COL 9.5(1)

Add the following new subsections after DCD Subsection 9.5.1.5.

9.5.1.6 Fire Protection Program

During construction, a site construction FPP is in place that addresses the requirements of Chapter 11, NFPA 804. This initial FPP is under the responsibility of the construction superintendent. Program responsibility is transferred to the Site Vice President as operational testing approaches. The CPNPP senior management position responsible for the operational program is the Site Vice President. The Site Vice President has delegated to the Operations Review Committee the responsibility to assess the effectiveness of the FPP, which is accomplished through periodic audits. Recommendations and the findings from these audits are reported to the Site Vice President.

The CPNPP FPP is developed in accordance with guidance provided in RG 1.189, as described in the following sections. The CPNPP FPP policy is captured in a formal plant document that defines management authorities, authority for conflict resolution, programmatic responsibilities, and establishes the general policy for the site FPP.

The CPNPP FPP is established to ensure that a fire will not affect safe-shutdown capabilities and will not endanger the health and safety of the public. Fire protection at CPNPP is accomplished by using a defense-in-depth approach to include fire detection, extinguishing systems and equipment, administrative controls, procedures, and trained personnel.

In accordance with Table 13.4-201, procedures for implementing the CPNPP FPP are developed and implemented prior to start-up. All elements of the CPNPP FPP are reviewed every 2 years and updated as necessary.

refueling outage. For any plant areas inaccessible for periods greater than 2 years, the most recent inspection is retained.

9.5.1.6.4.2.7 Fire Protection Preventative Maintenance

Fire protection preventative maintenance procedures are provided to perform periodic maintenance on fire protection equipment such as the fire pumps and drivers as recommended by the manufacturers of the equipment. Additionally, procedures are provided to address periodic inspection of fire doors, fire dampers, penetration seals and fire barrier wraps.

9.5.1.6.4.2.8 Fire Protection System Maintenance and Impairments

The fire protection program provides procedural control for the periodic inspection, testing, and maintenance of fire protection SSCs. The testing and maintenance of fire protection SSCs are performed by qualified personnel. Applicable codes, standards and manufacturer's recommendations provide the basis for the testing, and maintenance procedures. Additionally, the fire protection program provides periodic inspection procedures for fire barriers, fire doors, fire dampers and fire barrier penetration seals. Identified impairments to fire protection features, such as fire barriers and associated features, fire detection and fire suppression systems, fire pumps, fire detection and suppression systems, are also procedurally controlled where an impairment permit is generated, corrective actions are initiated and appropriate compensatory measures are established until the impairment is corrected.

9.5.1.6.5 Fire Protection Quality Assurance Program

The QA program for fire protection is prepared and implemented under QA program reference in Chapter 17, and the "Comanche Peak Nuclear Power Plant Units 3 and 4 Quality Assurance Program Description," (which is described in FSAR Section 17.5) Part III Sections 1 and 2.

9.5.2 Communication Systems

~~CP~~STD COL 9.5(4)

Replace the first sentence of the second paragraph in DCD Subsection 9.5.2 with the following. CTS-01140

The intra-plant communications systems consist of a public address/page party line system, intra-plant telephone system, intra-plant sound powered telephone system, plant radio transmitter and receiver system, broadband (internet) communications, and offsite radio systems. The offsite communications systems include telephone, radio frequency system, privately-owned microwave and fiber optic systems, broadband (internet), and personal cell phone.

9.5.2.2.2 Private Automatic Branch Telephone Exchange (PABX)

~~CP~~STD COL 9.5(4)
~~CP~~STD COL 9.5(5)

Replace the third sentence in DCD Subsection 9.5.2.2.2 with the following. CTS-01140

Access to commercial facilities such as central office trunk, utility's private network, and other offsite connections are provided though redundant and diverse routes as discussed in Subsection 9.5.2.2.2.2 and 9.5.2.2.5.1.

9.5.2.2.2.2 Emergency Telephones

CP COL 9.5(4)
CP COL 9.5(5)

Add the following paragraphs to the end of the DCD Subsection 9.5.2.2.2.2.

Direct communications links (direct telephone) are provided to the NRC Operations Center, the State Emergency Operations Center, and the Central Emergency Operations Center. A crisis management radio system is provided which meets the intent of NUREG 0654 is discussed in Subsection 9.5.2.2.5.2.

In emergency offsite communication, as the emergency notification system is connected through a local telephone company system, then a station package is required. The station package is designed, installed, and maintained at the site. The design provides a functional emergency notification system from the site to NRC Operations Center in the event of a LOOP at the site and is in compliance with the requirement of IE Bulletin 80-15.

9.5.2.2.5.1 General

CP COL 9.5(4)

Replace the first and second sentence of the first paragraph in DCD Subsection 9.5.2.2.5.1 with the following.

Plant specific redundant external communication links include.

- Copper and fiber optic telephone circuits
- Microwave telephone links
- Fiber optic data links
- Emergency radio communication links
- Direct telephone links to utility operations centers, the NRC, and State and Local Emergency Operations facilities

- Personal cell phone links (no credit is taken but these links provide alternate links which allow for additional communication paths)

9.5.2.2.5.2 Emergency Communications

~~CP~~STD COL 9.5(6)
~~CP~~STD COL 9.5(7)
~~CP~~STD COL 9.5(8)
~~CP~~STD COL 9.5(9)

Replace the second and third sentence of the second paragraph in DCD Subsection 9.5.2.2.5.2 with the following. CTS-01140

The effectiveness of the overall emergency response plan is in conformance with the requirements of 10 CFR 50.47 (b)(8). Adequate communications equipment are provided and maintained to allow the control room to communicate with offsite personnel and organizations. Pursuant to the emergency response plan, the following equipment is tested.

- An inspection and test is performed of the TSC voice communication equipment.
- An inspection and test is performed of the operation support center voice communication equipment.
- An inspection and test is performed of the EOF voice communication equipment.
- A test is performed of the means for warning or advising onsite individuals of an emergency.

A continuously manned alarm station as required by 10 CFR 73.46(e)(5) is provided.

Communication subsystems are provided as required by 10 CFR 73.46(e)(5). Each guard, watchman, or armed responder on duty maintains continuous communication with each continuously manned alarm station. The individual in the alarm station is capable of calling for assistance from other guards, watchmen, armed responders, and from law enforcement authorities.

Communication network and equipments for rapid and accurate transmission of routine security information to onsite personnel are provided for assessment of a contingency and response to a contingency and for rapid transmission of information to offsite assessment team. This is in conformance to the requirements of 10 CFR 73.45(g)(4)(i) and (ii).

Each alarm station required by 10 CFR 73.46 (e)(5) of the regulation has both conventional telephone service and radio or microwave transmitted two-way voice communication, either directly or through an intermediary, for the capability of communication with the law enforcement authorities.

The offsite communications systems within the onsite Technical Support Center ~~and operations support center~~ provides for emergency response following a design basis accident. During emergencies, the TSC is the primary onsite communication center for the communications to the control room, the operations support center and the NRC. RCOL2_09.05.02-2

In addition, provisions for communication with state and local operations centers are provided in the onsite TSC to initiate early notification and recommendations to offsite authorities prior to activation of the EOF. This is in accordance with the requirements of 10 CFR 50 Appendix E, Part IV.E.9.

~~CP~~STD COL 9.5(5)
~~CP~~STD COL 9.5(6)
~~CP~~STD COL 9.5(9)

Replace sixth paragraph in DCD Subsection 9.5.2.2.5.2 with the following. CTS-01140

The emergency offsite communication system serves as an alternate means of communication to notify local authorities of an emergency at the nuclear plant. Radios are provided for communications with the main control room, TSC, EOF, and local authorities.

This emergency radio communications system connects onsite and offsite monitoring teams with the operation support center and EOF respectively.

The plant is provided with separate telephone systems for operations and for security pursuant to 10 CFR 73.55(f). Data Communications is discussed in Section 7.9. Fire brigade communications is covered in Subsection 9.5.1.

The ~~CPNPP~~ emergency plan and security plan are described in Sections 13.3 and 13.6, respectively. These plans require testing of offsite communications links. CTS-01140

9.5.2.3 Safety Evaluation

~~CP~~STD COL 9.5(7)

Add the following paragraph after the first paragraph in DCD Subsection 9.5.2.3. CTS-01140

Plant specific safety evaluations and procedures are established by the plant operator to prevent any unauthorized access to secure locations and or unconfirmed removal of strategic special nuclear material in accordance with 10 CFR 73.45(e)(2)(iii).

9.5.4.3 Safety Evaluation

CP COL 9.5(11) Replace the second sentence of the seventh paragraph in DCD Subsection 9.5.4.3 with the following.

Fuel oil is normally brought in by tank truck for recharging the storage tank. Additionally, if circumstances require, railroad tank cars can be brought in on the site railroad spur. The CPNPP Units 3 and 4 are located approximately 90 miles southwest of the Dallas - Ft. Worth area. Dallas - Ft. Worth is a major commercial area which has distributors of diesel fuel that represent the majority of the major oil companies. The cities, such as Houston, Beaumont etc, within 300 miles from site are capable of supplying diesel fuel oil within seven days.

9.5.9 Combined License Information

Replace the content of DCD Subsection 9.5.9 with the following.

CP COL 9.5(1) STD COL 9.5(1)

***9.5(1)** Fire protection program, fire fighting procedures, and quality assurance* CTS-01140

This *COL item is addressed in Subsections 9.5.1, 9.5.1.3, 9.5.1.6, Table 9.5.1-1R and Table 9.5.1-2R.*

CP COL 9.5(2) STD COL 9.5(2)

***9.5(2)** Site specific fire protection aspects* CTS-01140

This COL item is addressed in Subsection 9.2.1.2.1, 9.5.1.2.1, 9.5.1.2.2, 9.5.1.2.3, 9.5.1.2.4, Table 9.5.1-1R, Table 9.5.1-2R, Figure 9.5.1-201, Figure 9.5.1-202 and Appendix 9A.

CP COL 9.5(3) STD COL 9.5(3)

***9.5(3)** Apparatus for plant personnel and fire brigades* CTS-01140

This COL item is addressed in Subsection 9.5.1.6.1.8 and Table 9.5.1-2R.

CP COL 9.5(4) STD COL 9.5(4)

***9.5(4)** Communication system interfaces external to the plant (offsite locations)* CTS-01140

This COL item is addressed in Subsection 9.5.2, 9.5.2.2.2, 9.5.2.2.2.2 and 9.5.2.2.5.1.

CP COL 9.5(5) STD COL 9.5(5)

***9.5(5)** The emergency offsite communications* CTS-01140

This *COL item is addressed in Subsection 9.5.2.2.2, 9.5.2.2.2.2 and 9.5.2.2.5.2.*

~~CP~~STD COL 9.5(6)

***9.5(6)** Connections to the Technical Support Center* CTS-01140

This *COL item is addressed in Subsection 9.5.2.2.5.2*

~~CP~~STD COL 9.5(7)

***9.5(7)** Continuously manned alarm station* CTS-01140

This *COL item is addressed in Subsection 9.5.2.2.5.2. and 9.5.2.3.*

~~CP~~STD COL 9.5(8) ***9.5(8)*** *Offsite communications for the onsite operations support center.* CTS-01140

This *COL item is addressed in* Subsection 9.5.2.2.5.2

~~CP~~STD COL 9.5(9) ***9.5(9)*** *Emergency communication system* CTS-01140

This *COL item is addressed in* Subsection 9.5.2.2.5.2.

9.5(10) *Deleted from the DCD.*

CP COL 9.5(11) ***9.5(11)*** *Fuel oil recharging*

This COL item is addressed in Subsection 9.5.4.3.

CP COL 9.5(2)

9.5.10 References

Add the following references after the last reference in DCD Subsection 9.5.10.

9.5.1-201 NFPA 601, *Standard for Security Services in Fire Loss Prevention*, 2005 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-202 NFPA 1971, *Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*, 2007 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-203 NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*, 2007 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-204 NFPA 1982, *Standard on Personal Alert Safety Systems (PASS)*, 2007 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-205 NFPA 1561, *Standard on Emergency Services Incident management System*, 2005 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-206 IEEE Std 980-1994, *IEEE Guide for Containment and Control of Oil Spills in Substations*, Institute of Electrical and Electronics Engineers, New York, NY.

9.5.1-207 NFPA 30, *Flamable and Combustible Liquids Code*, 2008 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-208 NFPA 22, *Standard for Water Tanks for Private Fire Protection*, 2008 Edition, National Fire Protection Association, Quincy, MA.

Table 9.5.1-1R (Sheet 1 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	In accordance with 10 CFR 50.48, each operating nuclear power plant must have a fire protection plan. The plan should establish the fire protection policy for the protection of SSCs important to safety at each plant and the procedures, equipment, and personnel required to implement the program at the plant site.	1.	Conform	See Subsection 9.5.1.6.	CTS-01140
CP COL 9.5(1)	The fire protection program should describe the organizational structure and responsibilities for its establishment and implementation. These responsibilities include fire protection program policy; program management (including program development, maintenance, updating, and compliance verification), fire protection staffing and qualifications; engineering and modification, inspection, testing, and maintenance of FPSs, features, and equipment, fire prevention, emergency response (e.g., fire brigades and offsite mutual aid), and general employee, operator, and fire brigade training.	1.1	Conform	See Subsection 9.5.1.6.	
~~CP~~STD COL 9.5(2)	A fire hazards analysis should be performed to demonstrate that the plant will maintain the ability to perform safe-shutdown functions and minimize radioactive material releases to the environment in the event of a fire. This analysis should be revised as necessary to reflect plant design and operational changes.	1.2	Conform	FHA is included as Appendix 9A	CTS-01140
	In accordance with 10 CFR 50.48, each operating nuclear power plant must provide the means to limit fire damage to SSCs important to safety so that the capability to safely shut down the reactor is ensured.	1.3	Conform	4 safety trains are provided which are completely separated by 3-hour fire rated barriers. Any two trains can achieve safe-shutdown.	
	The licensee should evaluate fire reports and data (e.g., fire barrier testing results and cable derating data) that are used to demonstrate compliance with NRC fire protection requirements to ensure that the information is applicable and representative of the conditions for which the information is being applied.	1.4	Conform	The US-APWR employs the use of limited applications of cable fire barriers, which have been qualified in accordance with GL 86-10 supplement 1.	

Table 9.5.1-1R (Sheet 2 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Temporary changes to specific fire protection features that may be necessary to accomplish maintenance or modifications are acceptable, provided interim compensatory measures, such as fire watches, temporary fire barriers, or backup suppression capability, are implemented. For common types of deficiencies, the technical specifications or the NRC-approved fire protection program generally note the specific compensatory measures. For unique situations or for measures that the approved fire protection program does not include, the licensee may determine appropriate compensatory measures. A licensee may opt to implement an alternative compensatory measure, or combination of measures, to the one stated in its fire protection program.	1.5	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The fire protection program should be under the direction of an individual who has available staff personnel knowledgeable in both fire protection and nuclear safety. Plant personnel should be adequately trained in the administrative procedures that implement the fire protection program and the emergency procedures relative to fire protection.	1.6	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Fire protection staff should meet the following qualifications: a. The formulation and assurance of the fire protection program and its implementation should be the responsibility of personnel prepared by training and experience in fire protection and in nuclear plant safety to provide a comprehensive approach in directing the fire protection program for the nuclear power plant. A fire protection engineer (or a consultant) who is a graduate of an engineering curriculum of accepted standing and satisfies the eligibility requirements as a Member in the Society of Fire Protection Engineers should be a member of the organization responsible for the formulation and implementation of the fire protection program.	1.6.1.a	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 3 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	b. The fire brigade members' qualifications should include satisfactory completion of a physical examination for performing strenuous activity and the fire brigade training as described in Regulatory Position 1.6.4.	1.6.1.b	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	c. The personnel responsible for the maintenance and testing of the fire protection systems should be qualified by training and experience for such work.	1.6.1.c	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	d. The personnel responsible for the training of the fire brigade should be qualified by knowledge, suitable training, and experience for such work.	1.6.1.d	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Each nuclear plant employee has a responsibility to prevent, detect, and suppress fires. General site employee training should introduce all personnel to the elements of the site's fire protection program, including the responsibilities of the fire protection staff. Training should also include information on the types of fires and related extinguishing agents, specific fire hazards at the site, and actions in the event of a fire suppression system actuation.	1.6.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Fire watches provide for observation and control of fire hazards associated with hot work, and they may act as compensatory measures for degraded fire protection systems and features. Specific fire watch training should provide instruction on fire watch duties, responsibilities, and required actions for both 1-hour roving and continuous fire watches. Fire watch qualifications should include hands-on training on a practice fire with the extinguishing equipment to be used while on fire watch. If fire watches are to be used as compensatory actions, the fire watch training should include recordkeeping requirements.	1.6.3	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 4 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The fire brigade training program should establish and maintain the capability to fight credible and challenging fires. The program should consist of initial classroom instruction followed by periodic classroom instruction, firefighting practice, and fire drills. (See Regulatory Position 3.5.1.4 for drill guidance.)	1.6.4	Conform	See Subsection 9.5.1.6.	CTS-01140
CP COL 9.5(1)	The brigade leader and at least two brigade members should have sufficient training in or knowledge of plant systems to understand the effects of fire and fire suppressants on safe-shutdown capability. The brigade leader should be competent to assess the potential safety consequences of a fire and advise MCR personnel. Such competence by the brigade leader may be evidenced by possession of an operator's license or equivalent knowledge of plant systems. Nuclear power plants staffed with a dedicated professional fire department may utilize a fire team advisor to assess the potential safety consequences of a fire and advise the MCR and incident commander. The fire team advisor should possess an operator's license or equivalent knowledge of plant systems and be dedicated to supporting the fire incident commander during fire emergency events.	1.6.4.1	Conform	See Subsection 9.5.1.6.	
~~CP~~STD COL 9.5(1)	Instruction should be provided by qualified individuals who are knowledgeable, experienced, and suitably trained in fighting the types of fires that could occur in the plant and in using the types of equipment available in the nuclear power plant. The licensee should provide instruction to all fire brigade members and fire brigade leaders.	1.6.4.2	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 5 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The licensee should hold practice sessions for each shift fire brigade on the proper method of fighting the various types of fires that could occur in a nuclear power plant. These sessions should provide brigade members with experience in actual fire extinguishment and the use of self-contained breathing apparatuses under the strenuous conditions encountered in firefighting. The licensee should provide these practice sessions at least once per year for each fire brigade member.	1.6.4.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CO~~STD COL 9.5(1)	The licensee should maintain individual records of training provided to each fire brigade member, including drill critiques, for at least 3 years to ensure that each member receives training in all parts of the training program. These records of training should be available for NRC review.	1.6.4.4	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The overall plant QA plan should include the QA program for fire protection. For fire protection systems, the licensee should have and maintain a QA program that provides assurance that the fire protection systems are designed, fabricated, erected, tested, maintained, and operated so that they will function as intended. Fire protection systems are not "safety-related" and, therefore, are not within the scope of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR 50, unless the licensee has committed to include these systems under the plant's Appendix B program.	1.7	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The licensee should establish measures to include the guidance presented in this RG in its design and procurement documents.	1.7.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Documented instructions, procedures, or drawings should prescribe inspections, tests, administrative controls, fire drills, and training that govern the fire protection program.	1.7.2	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 6 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The licensee should establish the following measures to ensure that purchased material, equipment, and services conform to the procurement documents: a. provisions, as appropriate, for source evaluation and selection, objective evidence of quality furnished by the contractor, inspections at suppliers, or receipt inspections b. source or receipt inspection, at a minimum, for those items that, once installed, cannot have their quality verified.	1.7.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The licensee should establish and execute a program for independent inspection of activities affecting fire protection that allows the organization performing the activity to verify conformance to documented installation drawings and test procedures.	1.7.4	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The licensee should establish and implement a test program to ensure that testing is performed and verified by inspection and audit to demonstrate conformance with design and system readiness requirements. The tests should be performed in accordance with written test procedures; test results should be properly evaluated and corrective actions taken as necessary.	1.7.5	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The licensee should establish measures to provide for the documentation or identification of items that have satisfactorily passed required tests and inspections. These measures should include provisions for identification by means of tags, labels, or similar temporary markings to indicate completion of required inspections and tests and operating status.	1.7.6	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The licensee should establish measures to control items that do not conform to specified requirements to prevent inadvertent use or installation.	1.7.7	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 7 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The licensee should establish measures to ensure that conditions adverse to fire protection, such as failures, malfunctions, deficiencies, deviations, defective components, uncontrolled combustible materials, and nonconformances, are promptly identified, reported, and corrected.	1.7.8	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The licensee should prepare and maintain records to furnish evidence that the plant is meeting the criteria enumerated above for activities affecting the fire protection program.	1.7.9	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The licensee should conduct and document audits to verify compliance with the fire protection program.	1.7.10	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(2)	For those licensees who have relocated audit requirements from their technical specifications to the QA program, annual fire protection audits may be changed to a "maximum interval of 24 months" by implementation of a performance-based schedule, if justified by performance reviews, provided that the maximum audit interval does not exceed the interval specified in American National Standards Institute/American Nuclear Society (ANSI/ANS) 3.2-1994, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants."	1.7.10.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The 24-month audit of the fire protection program and implementing procedures should ensure that the requirements for design, procurement, fabrication, installation, testing, maintenance, and administrative controls for the respective programs are included in the plant QA program for fire protection and meet the criteria of the QA/QC program established by the licensee, consistent with this guide. Personnel from the licensee's QA organization, who do not have direct responsibility for the program being evaluated, should perform these audits.	1.7.10.2	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 8 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The triennial audit is basically the same as the annual audit; the difference lies in the source of the auditors. Qualified utility personnel who are not directly responsible for the site fire protection program or an outside independent fire protection consultant may perform the annual audit. However, an outside independent fire protection consultant should perform the triennial audit. These audits would normally encompass an evaluation of existing documents (other than those addressed under the 24-month audit) and an inspection of fire protection system operability, inspection of the integrity of fire barriers, and witnessing the performance of procedures to verify that the licensee has fully implemented the fire protection program and that the plan is adequate for the objects protected.	1.7.10.3	Conform	See Subsection 9.5.1.6.	CTS-01140
	This section provides guidance relative to the regulatory mechanisms for addressing changes, deviations, exemptions, and other issues affecting compliance with fire protection regulatory requirements. Risk-informed, performance-based methodologies may be used to evaluate the acceptability of fire protection program changes; however, the licensee should use NRC reviewed and approved methodologies and acceptance criteria for this approach.	1.8	Information Statement	No compliance action, this is an informational statement.	
	If an existing plant licensee has adopted the standard license condition for fire protection and incorporated the fire protection program in the final safety analysis report (FSAR), the licensee may make changes to the approved fire protection program without the Commission's prior approval only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire as documented in a safety evaluation.	1.8.1	N/A	The US-APWR is a new plant that will be subject to current licensing requirements of the US NRC at the time of COL application.	

Table 9.5.1-1R (Sheet 9 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
	If the fire protection program committed to by the licensee is required by a specific license condition and is not part of the FSAR for the facility, the licensee may be required to submit amendment requests even for relatively minor changes to the fire protection program.	1.8.1.1	N/A	The US-APWR is a new plant that will be licensed under current regulations at the time of COL application.	
	The NRC transmitted the standard license condition for fire protection to licensees in April 1986 as part of GL 86-10 with information on its applicability to specific plants.	1.8.1.2	Information Statement	No compliance applicable, informational statement.	
CP COL 9.5(1)	If a proposed change alters compliance with a rule then an exemption from the rule is required in accordance with 10 CFR 50.12. If a proposed change alters a license condition or technical specification that was used to satisfy NRC requirements, the licensee should submit a license amendment request. When a change that falls within the scope of the changes allowed under the standard fire protection license condition is planned, the licensee's evaluation should be made in conformance with the standard fire protection license condition to determine whether the change would adversely affect the ability to achieve and maintain safe shutdown.	1.8.1.3	Conform	See Subsection 9.5.1.6.	
~~CP~~STD COL 9.5(1)	In addition to an evaluation of planned changes, an evaluation may also be required for nonconforming conditions. In the case of a degraded or nonconforming condition, an evaluation depends on the licensee's compensatory and corrective actions. Three potential conditions exist for determining the need for an evaluation. These conditions are (1) the use of interim compensatory actions, (2) corrective actions that result in a change, or (3) corrective actions that restore the nonconforming or degraded condition to the previous condition.	1.8.1.4	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 10 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The licensee should maintain records of fire protection program-related changes in the facility, changes in procedures, and tests and experiments made in accordance with the standard fire protection license condition. These records should include a written evaluation that provides the bases for the determination that the change does not adversely affect safe-shutdown capability.	1.8.1.5	Conform	See Subsection 9.5.1.6.	CTS-01140
	For plants licensed before January 1, 1979, the NRC requires requests for exemption from the requirements of Appendix R for modifications or conditions that do not comply with the applicable sections of Appendix R. The exclusion of the applicability of sections of Appendix R other than Sections III.G, III.J, and III.O (and Section III.L as applicable) is limited to those features accepted by the NRC staff as satisfying the provisions of Appendix A to BTP APCSB 9.5-1 reflected in staff fire protection safety evaluation reports issued before the effective date of the rule. For these previously approved features, an exemption request is not required except for proposed modifications that would alter previously approved features used to satisfy NRC requirements.	1.8.2	N/A	The US-APWR is a new plant that satisfy the requirement applicable to advanced light water reactors.	
CP COL 9.5(1)	The NRC interpretations of certain Appendix R requirements allow a licensee to choose not to seek prior NRC review and approval of, for example, a fire area boundary, in which case a fire protection engineer (assisted by others as needed) should perform an evaluation, which should be retained for a future NRC audit.	1.8.3	Conform	See Subsection 9.5.1.6.	

Table 9.5.1-1R (Sheet 11 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
	Plants licensed after January 1, 1979, that have committed to meet the requirements of Sections III.G, III.J, and III.O of Appendix R to 10 CFR 50 or other NRC guidance (e.g., CMEB 9.5-1), and are required to do so as a license condition, do not need to request exemptions for alternative configurations. However, the FSAR or fire hazards analysis should identify and justify deviations from the requirements of Sections III.G, III.J, and III.O or other applicable requirements or guidance, and these deviations may require a license amendment to change the license condition.	1.8.4	Conform	The US-APWR is a new plant that does not involve unapproved deviations from regulatory requirements.	
~~CP~~STD COL 9.5(1)	The requirements of 10 CFR 50.72 and 10 CFR 50.73 apply to reporting certain events and conditions related to fire protection at nuclear power plants. Licensees should report fire events or fire protection deficiencies that meet the criteria of 10 CFR 50.72 and 10 CFR 50.73 to the NRC as appropriate and in accordance with the requirements of these regulations.	1.8.5	Conform	See Subsection 9.5.1.6.	CTS-01140
CP COL 9.5(2)	For those fire protection SSCs installed to satisfy the NRC requirements and designed to NFPA codes and standards, the code of record is the code edition in force at the time of the design or at the time the commitment is made to the NRC for a fire protection feature. The FSAR or the fire hazards analysis should identify and justify deviations from the codes. Deviations should not degrade the performance of fire protection systems or features. The standards of record related to the design and installation of fire protection systems and features required to satisfy NRC requirements in all new reactor designs are those NFPA codes and standards in effect 180 days prior to the submittal of the application under 10 CFR 50 or 10 CFR 52.	1.8.6	Conform	See Subsection 9.5.1.1.	

Table 9.5.1-1R (Sheet 12 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
CP COL 9.5(1)	Where the evaluation of an fire protection program change is based on fire modeling, licensees should document that the fire models and methods used meet the NRC requirements. The licensee should also document that the models and methods used in the analyses were used within their limitations and with the rigor required by the nature and scope of the analyses. These analyses may use simple hand calculations or more complex computer models, depending on the specific conditions of the scenario being evaluated.	1.8.7	Conform	See Subsection 9.5.1.6.	
	Fire prevention is the first line of defense-in-depth for fire protection. The fire prevention attributes of the program are directly related to the fire protection objective to minimize the potential for fire to occur. These attributes involve design and administrative measures that provide a reasonable level of assurance that fire hazards are adequately protected and managed and that fire consequences will be limited for those fires that do occur.	2.	Information Statement	Compliance statement not appropriate since this is an informational statement only.	
~~CP~~STD COL 9.5(1)	Fire prevention administrative controls should include procedures to control handling and use of combustibles, prohibit storage of combustibles in plant areas important to safety, establish designated storage areas with appropriate fire protection, and control use of specific combustibles (e.g., wood) in plant areas important to safety.	2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Bulk storage of combustible materials should be prohibited inside or adjacent to buildings or systems important to safety during all modes of plant operation. Procedures should govern the handling of and limit transient fire hazards such as combustible and flammable liquids, wood and plastic products, high-efficiency particulate air (HEPA) and charcoal filters, dry ion exchange resins, or other combustible materials in buildings containing systems or equipment important to safety during all phases of operation, particularly during maintenance, modification, or refueling operations.	2.1.1	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 13 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Fire prevention elements of the fire protection program should be maintained when plant modifications are made. The modification procedures should contain provisions that evaluate the impacts of modifications on the fire prevention design features and programs. The licensee should follow the guidelines of Regulatory Position4.1.1 in the design of plant modifications. Personnel in the fire protection organization should review modifications of SSCs to ensure that fixed fire loadings are not increased beyond those accounted for in the fire hazards analysis, or if increased, suitable protection is provided and the fire hazards analysis is revised accordingly.	2.1.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Flammable and combustible liquids and gases are potentially significant fire hazards and procedures should clearly define the use, handling, and storage of these hazards. The handling, use, and storage of flammable and combustible liquids should, as a minimum, comply with the provisions of NFPA 30, “Flammable and Combustible Liquids Code.”	2.1.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(2)	When an SSC important to safety is near installations such as flammable liquid or gas storage, the licensee should evaluate the risk of exposure fires (originating in such installations) to the SSCs and take appropriate protective measures. NFPA 80A, “Recommended Practice for Protection of Buildings from Exterior Fire Exposures,” provides guidance on such exposure protection. NFPA 30 provides guidance relative to minimum separation distances from flammable and combustible liquid storage tanks. NFPA 55, “Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks,” provides separation distances for gaseous and liquefied hydrogen. (See Regulatory Position 7.5 of this guide.) NFPA 58, “Liquefied Petroleum Gas Code,” provides guidance for liquefied petroleum gas.	2.1.4	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 14 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Electrical equipment (permanent and temporary), hot work activities (e.g., open flame, welding, cutting and grinding), high-temperature equipment and surfaces, heating equipment (permanent and temporary installation), reactive chemicals, static electricity, and smoking are all potential ignition sources. Design, installation, modification, maintenance, and operational procedures and practices should control potential ignition sources.	2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Work involving ignition sources such as welding and flame cutting should be done under closely controlled conditions. Persons performing and directly assisting in such work should be trained and equipped to prevent and combat fires. If this is not possible, a person qualified in fire protection should directly monitor the work and function as a fire watch.	2.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The use of temporary services at power reactor facilities is routine, especially to support maintenance and other activities during outages. In view of the magnitude and complexity of some temporary services, proper engineering and, once installed, maintenance of the design basis become significant. Plant administrative controls should provide for engineering review of temporary installations. These reviews should ensure that appropriate precautions, limitations, and maintenance practices are established for the term of such installations.	2.2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Leak testing and similar procedures such as airflow determination should not use open flames or combustion-generated smoke. Procedures and practices should provide for control of temporary heating devices. Use of space heaters and maintenance equipment (e.g., tar kettles for roofing operations) in plant areas should be strictly controlled and reviewed by the plant's fire protection staff.	2.2.3	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 15 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The licensee should establish administrative controls to minimize fire hazards in areas containing SSCs important to safety. These controls should govern removal of waste, debris, scrap, oil spills, and other combustibles after completion of a work activity or at the end of the shift. Administrative controls should also include procedures for performing and maintaining periodic housekeeping inspections to ensure continued compliance with fire protection controls.	2.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The licensee should establish fire protection administrative controls to address the following: a. Fire protection features should be maintained and tested by qualified personnel. b. Impairments to fire barriers, fire detection, and fire suppression systems should be controlled by a permit system. c. Successful fire protection requires inspection, testing, and maintenance of the fire protection equipment. d. Fire barriers, including dampers, doors, and penetration seals, should be routinely inspected.	2.4	Conform	See Subsection 9.5.1.6.	CTS-01140
	In general, the fire hazards analysis and regulatory requirements determine the scope of fire detection and suppression in the plant, whereas the applicable industry codes and standards (generally NFPA codes, standards, and recommended practices) determine the design, installation, and testing requirements of the systems and components. The design of fire detection systems should minimize the adverse effects of fires on SSCs important to safety. Automatic fire detection systems should be installed in all areas of the plant that contain or present an exposure fire hazard to SSCs important to safety. These fire detection systems should be capable of operating with or without offsite power.	3.1	Conform	The FHA (Appendix 9A), NRC regulations and NFPA codes and standards are used in the development of fire protection features for US-APWR.	
	The fire detection and alarm system should be designed with objectives detailed in the RG.	3.1.1	Conform	RG 1.189, Rev. 1 followed extensively in the implementation of the fire protection program for the US-APWR plant.	

Table 9.5.1-1R (Sheet 16 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
CP COL 9.5(2)	NFPA 22, "Standard for Water Tanks for Private Fire Protection," and NFPA 24, "Standard for the Installation of Private Fire Service Mains and Their Appurtenances," provide guidance for fire protection water supplies	3.2.1	Conform	See Subsection 9.5.1.2.2.	
~~CP~~STD COL 9.5(2)	Fire pump installations should conform to NFPA 20.	3.2.2	Conform	See Subsection 9.5.1.2.2.	CTS-01140
~~CP COL 9.5(2)~~	An underground yard fire main loop should be installed to furnish anticipated water requirements. NFPA 24 provides appropriate guidance for such installation.	3.2.3	Conform	See Subsection 9.5.1.2.3.	CTS-01140
	Automatic suppression should be installed as determined by the fire hazards analysis and as necessary to protect redundant systems or components necessary for safe shutdown and SSCs important to safety.	3.3	Conform	See Appendix 9A for areas where automatic suppression as determined by the FHA is to be installed.	
	Equipment important to safety that does not itself require protection by water-based suppression systems, but is subject to unacceptable damage if wetted by suppression system discharge, should be appropriately protected (e.g., water shields or baffles). Drains should be provided as required to protect equipment important to safety from flooding damage.	3.3.1	Conform	Floor drains and raised equipment pedestals are used as well as spray shields where necessary to protect equipment that can suffer unacceptable damage from wetting.	
	Water sprinkler and spray suppression systems are the most widely used means of implementing automatic water-based fire suppression. Sprinkler and spray systems should, at a minimum, conform to requirements of appropriate standards such as NFPA 13 and NFPA 15.	3.3.1.1	Conform	Sprinkler systems are designed per NFPA 13 and spray systems designed per NFPA 15.	
	Water mist suppression systems may be useful in specialized situations, particularly in those areas where the application of water needs to be restricted. Water mist systems should conform to appropriate standards such as NFPA 750, "Standard on Water Mist Fire Protection Systems."	3.3.1.2	Conform		

Table 9.5.1-1R (Sheet 18 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
	Halon alternative (or “clean agent”) fire extinguishing systems should comply with applicable standards such as NFPA 2001. Only listed or approved agents should be used. Provisions for locally disarming automatic systems should be key locked and under strict administrative control.	3.3.2.3	Conform	Clean agent fire suppression systems conform with applicable NFPA 2001 guidance.	
	The licensee should provide a manual firefighting capability throughout the plant to limit the extent of fire damage. Standpipes, hydrants, and portable equipment consisting of hoses, nozzles, and extinguishers should be provided for use by properly trained firefighting personnel.	3.4	Conform	Adequate manual hose stations and portable fire extinguishers installed through the US-APWR.	
	Interior manual hose installations should be able to reach any location that contains, or could present a fire exposure hazard to, equipment important to safety with at least one effective hose stream. To accomplish this, standpipes with hose connections equipped with a maximum of 30.5 m (100 ft) of 38-mm (1.5-in.) woven-jacket, lined fire hose and suitable nozzles should be provided in all buildings on all floors. These systems should conform to NFPA 14, “Standard for the Installation of Standpipe and Hose Systems,” for sizing, spacing, and pipe support requirements for Class III standpipes. Water supply calculations should demonstrate that the water supply system can meet the standpipe pressure and flow requirements of NFPA 14	3.4.1	Conform	See Appendix 9A.	
~~CP~~STD COL 9.5(2)	Outside manual hose installations should be sufficient to provide an effective hose stream to any onsite location where fixed or transient combustibles could jeopardize equipment important to safety. Hydrants should be installed approximately every 76 m (250 ft) on the yard main system. A hose house equipped with hose and combination nozzle and other auxiliary equipment recommended in NFPA 24 should be provided as needed, but at least every 305 m (1,000 ft).	3.4.2	Conform	See subsection 9.5.1.2.3.	CTS-01140

Table 9.5.1-1R (Sheet 19 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	For flammable and combustible liquid fire hazards, consideration should be given to the use of foam systems for manual fire suppression protection. These systems should comply with the requirements of NFPA 11.	3.4.3	N/A	Based on the FHA (Appendix 9A), no installed foam systems are proposed for ~~CPNPP Units 3 and 4~~the US-APWR. The plant fire brigade has foam carts available for manual fire fighting efforts.	CTS-01140 CTS-01140
	Fire extinguishers should be provided in areas that contain or could present a fire exposure hazard to equipment important to safety. Extinguishers should be installed with due consideration given to possible adverse effects on equipment important to safety installed in the area. NFPA 10, "Standard for Portable Fire Extinguishers," provides guidance on the installation (including location and spacing) and the use and application of fire extinguishers.	3.4.4	Conform	See Appendix 9A.	
	Some fixed fire suppression systems may be manually actuated (e.g., fixed suppression systems provided in accordance with Section III.G.3 of Appendix R to 10 CFR 50). Manual actuation is generally limited to water spray systems and should not be used for gaseous suppression systems except when the system provides backup to an automatic water suppression system.	3.4.5	N/A	The US-APWR is an advanced light water reactor plant and complies with applicable regulations for an advanced plant. Manually actuated water spray systems in the US-APWR are only used for charcoal filter bed protection.	
CP COL 9.5(1)	A site fire brigade trained and equipped for firefighting should be established and should be on site at all times to ensure adequate manual firefighting capability for all areas of the plant containing SSCs important to safety. The fire brigade leader should have ready access to keys for any locked doors.	3.5.1	Conform	See Subsection 9.5.1.6.1.6.	

Table 9.5.1-1R (Sheet 26 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
	Emergency lighting should be provided in support of the emergency egress design guidelines in outlined in Regulatory Position 4.1.2.3 of this guide.	4.1.6.1	Conform		
	Lighting is vital to post-fire safe-shutdown and emergency response in the event of fire. The licensee should provide suitable fixed and portable emergency lighting.	4.1.6.2	Conform		
~~CP~~STD COL 9.5(1)	The communication system design should provide effective communication between plant personnel in all vital areas during fire conditions under maximum potential noise levels.	4.1.7	Conform	In plant repeaters used where required.	CTS-01140
~~CP~~STD COL 9.5(2)	In situ and transient explosion hazards should be identified and suitable protection provided. Transient explosion hazards that cannot be eliminated should be controlled and suitable protection provided.	4.1.8	Conform	US-APWR design addresses in situ explosion hazards and provides protection. See Subsection 9.5.1.6.	CTS-01140
	Fire barriers are those components of construction (walls, floors, and their supports), including beams, joists, columns, penetration seals or closures, fire doors, and fire dampers that are rated by approving laboratories in hours of resistance to fire and are used to prevent the spread of fire. New reactor designs should be based on providing structural barriers between redundant safe shutdown success paths wherever feasible and should minimize the reliance on localized electrical raceway fire barrier systems, as described in Regulatory Position 4.2.3 of this guide. This approach is in accordance with the enhanced fire protection criteria for new reactors described in Regulatory Position 8.2 of this guide.	4.2.1	Conform	The US-APWR is a new reactor design and minimizes reliance on localized electrical raceway fire barrier systems. Where used, localized barriers are in accordance with Appendix C qualification requirements. See also Regulatory Position 8.2.	

Table 9.5.1-1R (Sheet 35 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
	primary coolant boundary, or rupture of the containment boundary. Licensees should ensure that fire protection features are provided for structures, systems, and components important to safe shutdown that are capable of limiting fire damage so that one success path of systems necessary to achieve and maintain hot shutdown conditions from either the MCR or emergency control station(s) is free of fire damage.				
	For normal safe shutdown, redundant systems necessary to achieve cold shutdown may be damaged by a single fire, but damage should be limited so that at least one success path can be repaired or made operable within 72 hours using onsite capability or within the time period required to achieve a safe-shutdown condition, if less than 72 hours.	5.2	N/A	The US-APWR as an evolutionary plant design must be able to achieve cold shutdown without equipment repairs being involved. Cold shutdown can be achieved as a normal course of action using two of the four redundant safety trains.	
	Fire barriers or automatic suppression, or both, should be installed as necessary to protect redundant systems or components necessary for safe shutdown.	5.3	Conform	Fire barriers are installed to provide separation of redundant safety trains. Automatic suppression is installed to minimize damage to safety-related equipment where app.	
~~CP~~STD COL 9.5(2)	The post-fire safe-shutdown analysis must ensure that one success path of shutdown SSCs remains free of fire damage for a single fire in any single plant fire area. The NRC acknowledges Chapter 3 of industry guidance document, NEI-00-01, Revision 1, in RIS 2005-30, as providing an acceptable deterministic methodology for analysis of post-fire safe-shutdown circuits, when applied in conjunction with the RIS.	5.3.1	Conform	See FHA (Appendix 9A.) See Subsection 9.5.1.3	CTS-01140

Table 9.5.1-1R (Sheet 39 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Procedures for effecting safe shutdown should reflect the results and conclusions of the safe shutdown analysis. Implementation of the procedures should not further degrade plant safety functions. Time-critical operations for effecting safe shutdown identified in the safe-shutdown analysis and incorporated in post-fire procedures should be validated.	5.5	Conform	See Subsection 9.5.1.6.	CTS-01140
	Post-fire safe-shutdown operating procedures should be developed for those areas where alternative or dedicated shutdown is required. For other areas of the plant, shutdown would normally be achieved using the normal operating procedures or plant emergency operating procedures.	5.5.1	N/A	The US-APWR is an evolutionary plant that complies with Position 8.2.	
~~CP~~STD COL 9.5(1)	Procedures should be in effect that describe the tasks to implement remote shutdown capability when offsite power is available and when offsite power is not available for 72 hours. These procedures should also address necessary actions to compensate for spurious operations and high-impedance faults if such actions are necessary to effect safe shutdown.	5.5.2	Conform	See Subsection 9.5.1.6.	CTS-01140
	The licensee should develop procedures for performance of repairs necessary to achieve and maintain cold shutdown conditions. For alternative shutdown, procedures should be in effect to accomplish repairs necessary to achieve and maintain cold shutdown within 72 hours. For plants that must proceed to cold shutdown prior to 72 hours, the procedures should support the required time for initiation of cold shutdown.	5.5.3	N/A	Repairs are not required to achieve cold shutdown. Cold shutdown is achieved through redundant safety trains of equipment through normal operating procedures.	

Table 9.5.1-1R (Sheet 40 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Safe-shutdown requirements and objectives are focused on achieving shutdown conditions for fires occurring during normal at-power operations. During shutdown operations (i.e., maintenance or refueling outages), fire risk may increase significantly as a result of work activities. In addition, redundant systems important to safety may not be available as allowed by plant technical specifications and plant procedures. The fire protection program should be reviewed to verify that fire protection systems, features, and procedures will minimize the potential for fire events to impact safety functions (e.g., reactivity control, reactor decay heat removal, spent fuel pool cooling) or result in the unacceptable release of radioactive materials, under the differing conditions that may be present during shutdown operations.	5.6	Conform	See Subsection 9.5.1.6.	CTS-01140
	Several areas within a nuclear power plant present unique hazards or design issues relative to fire protection and safe shutdown. This section provides guidance applicable to specific plant areas.	6.	N/A	Informational statement.	
	Fire protection for the primary and secondary containment areas should be provided for the hazards identified in the fire hazards analysis. Under normal conditions, containment fire hazards may include lubricating oils, hydraulic fluids, cables, electrical penetrations, electrical cabinets, and charcoal filters. During refueling and maintenance operations, additional hazards may be introduced, including contamination control and decontamination materials and supplies, scaffolding, plastic sheathing, wood planking, chemicals, and hot work.	6.1.1	Conform	Containment standpipe supplied to support fire suppression during outages.	

Table 9.5.1-1R (Sheet 45 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
	Diesel generators important to safety should be separated from each other and from other areas of the plant by fire barriers that have a fire-resistance rating of at least 3 hours. Diesel generators that are not important to safety should be separated from plant areas containing equipment and circuits important to safety by fire barriers that have a fire-resistance rating of at least 3 hours.	6.1.8	N/A	The US-APWR uses gas turbine generators for emergency power sources. Four safety-related gas turbine generators and the two SBO gas turbine generators are installed in individual fire areas with 3-hour fire rated barriers providing separation.	
	Pump houses and rooms housing redundant pump trains important to safety should be separated from each other and from other areas of the plant by fire barriers having at least 3-hour ratings. These rooms should be protected by automatic fire detection and suppression unless a fire hazards analysis can demonstrate that a fire will not endanger other equipment required for safe plant shutdown. Fire detection should alarm and annunciate in the MCR and alarm locally. Hose stations and portable extinguishers should be readily accessible.	6.1.9	Conform	Rooms have fire detection installed. Automatic suppression is not provided unless there is significant lube oil associated with the unit based upon the FHA (See Appendix 9A).	
	Other areas within the plant may contain hazards or equipment that warrant special consideration relative to fire protection, including areas containing significant quantities of radioactive materials, yard areas containing water supplies or systems important to safety, and the plant cooling tower.	6.2	Informational Statement		
~~CP~~STD COL 9.5(1)	New Fuel Areas. Portable hand extinguishers should be located near this area. In addition, hose stations should be located outside but within hose reach of this area. Automatic fire detection should alarm and annunciate in the MCR and alarm locally. Combustibles should be limited to a minimum in the new fuel area. The storage area should be provided with a drainage system to preclude accumulation of water.	6.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-1R (Sheet 47 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

~~CP~~STD COL 9.5(2)

Regulatory Position	Position Number	Conformance	Remarks
Cooling towers should constructed of noncombustible construction or be located and protected in such a way that a fire will not adversely affect any systems or equipment important to safety. Cooling towers should be of noncombustible construction when the basins are used for the ultimate heat sink or for the fire protection water supply. For the latter, provisions should be made to ensure a continuous supply of fire protection water whenever the cooling tower basin is drained for cleaning or other maintenance.	6.2.6	Conform	Cooling towers for the ~~CPNPP~~ ultimate heat sink are of non-combustible construction. CTS-01140
External RCSs with oil lubrication systems should be equipped with an oil collection system if the containment is not inerted during normal operation. The oil collection system should be designed, engineered, and installed to ensure that failure will not lead to fire during normal or design-basis accident conditions and that the system will withstand the safe-shutdown earthquake.	7.1	Conform	A compliant oil leakage collection system is provided for RCPs.
The T/B should be separated from adjacent structures containing equipment important to safety by a fire barrier with a rating of at least 3 hours. The fire barriers should be designed to maintain structural integrity even in the event of a complete collapse of the turbine structure. Openings and penetrations in the fire barrier should be minimized and should not be located where the turbine oil system or generator hydrogen cooling system creates a direct fire exposure hazard to the barrier.	7.2	Conform	The R/B wall separating the R/B from the T/B areas meets 3-hour fire resistive construction requirements.
The T/B contains large sources of combustible liquids, including reservoirs and piping for lube oil, seal oil, and electrohydraulic systems. These systems should be separated from systems important to safety by 3-hour rated barriers. Additional protection should be provided on the basis of the hazard or where fire barriers are not provided.	7.2.1	Conform	There is no safety-related equipment in the T/B. The T/B is separated from the R/B by 3-hour barriers. Individual hazards within the T/B are separated based on the US-APWR FHA (Appendix 9A).

Table 9.5.1-1R (Sheet 48 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	Turbine generators may use hydrogen for cooling. Hydrogen storage and distribution systems should meet the guidelines provided in Regulatory Position 7.5 of this guide.	7.2.2	Conform		CTS-01140
	Smoke control should be provided in the T/B to mitigate potential heavy smoke conditions associated with combustible liquid and cable fires. Regulatory Position 4.1.4 provides specific guidance.	7.2.3	Conform	Smoke vents in T/B roof.	
CP COL 9.5(2)	Transformers installed inside fire areas containing systems important to safety should be of the dry type or insulated and cooled with noncombustible liquid. Transformers filled with combustible fluid that are located indoors should be enclosed in a transformer vault. NFPA 70 offers additional guidance. Outdoor oil-filled transformers should have oil spill confinement features or drainage away from the buildings. Such transformers should be located at least 15.2 m (50 ft) distant from the building, or building walls within 15.2 m (50 ft) of oil-filled transformers should be without openings and have a fire resistance rating of at least 3 hours.	7.3	Conform	Transformers installed inside fire areas containing systems important to safety are the dry type. Outdoor oil-filled transformers are separated from turbine building by a 3-hour fire barrier. See Subsection 9.5.1.2.1.	
~~CP~~STD COL 9.5(2)	Bulk gas storage (either compressed or cryogenic) should not be permitted inside structures housing equipment important to safety. Storage of flammable gas such as hydrogen should be located outdoors or in separate, detached buildings so that a fire or explosion will not adversely affect any systems or equipment important to safety.	7.5	Conform	Bulk gas storage is located in yard area away from safety-related plant structures.	CTS-01140
~~CP~~STD COL 9.5(2)	The fire protection program should address plant support facilities (e.g., offices, maintenance shops, warehouses, temporary structures, equipment storage yards), collocated power generating units (e.g., nuclear, coal, natural gas), and nearby industrial facilities (e.g., chemical plants, refineries, manufacturing facilities) to the extent that fires and or explosions in these facilities may affect equipment important to safety. Fire protection systems and features should be adequate to protect against potential exposure fires and explosions from nearby facilities.	7.6	Conform	Plant support facilities are located away from safety-related plant structures.	CTS-01140

Table 9.5.1-1R (Sheet 51 of 51)
CPNPP Units 3 & 4 Fire Protection Program Conformance with RG 1.189

	Regulatory Position	Position Number	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," identifies fire protection as an "operation program." However, only those elements of the fire protection program that will not be implemented fully until the completion of the plant should be addressed as an operational program. This may include, but is not be limited to, the fire brigade, combustible and ignition source control program, procedures and prefire plans, and portable extinguishing equipment. The COL application should identify the operational program aspects of the fire protection program and the implementation schedule for each. In lieu of the implementation schedule, the applicant may propose inspections, tests, analyses, and acceptance criteria for these aspects of the program.	8.6	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	NRC regulations and guidance do not specifically address fire protection during nonpower modes of plant operation (e.g., during shutdown for maintenance and/or refueling) except for existing plants that adopt an NFPA 805 fire protection program. However, the requirements for fire prevention in Regulatory Position 2 of this guide apply to all modes of plant operation, including shutdown. License applications for new reactors should also address any special provisions to ensure that, in the event of a fire during a nonpower mode of operation, the plant can be maintained in safe shutdown.	8.7	Conform	See Subsection 9.5.1.6.	CTS-01140
	Licensees may apply for a license renewal to permit continued plant operation beyond the original operating license period of operation, in accordance with the provisions of 10 CFR 54. The fire protection licensing and design basis under license renewal should not differ significantly from that in effect before renewal with the exception that fire protection SSCs must be included in an aging management program as appropriate.	9.	N/A	The US-APWR is a new plant that will obtain an initial operating license. The design life of US-APWR is sixty years.	

Table 9.5.1-2R (Sheet 1 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	All elements of the site fire protection program shall be reviewed every 2 years and updated as necessary.	4.1.1	Conform	See Subsection 9.5.1.6.	CTS-01140
CP COL 9.5(1)	Other review frequencies shall be permitted where specified in site administrative procedures and approved by the authority having jurisdiction.	4.1.2	N/A	CPNPP uses a two year cycle	
~~CP~~STD COL 9.5(1)	A policy document shall be prepared that defines management authorities and responsibilities and establishes the general policy for the site fire protection program.	4.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The policy document shall designate the senior management person with immediate authority and responsibility for the fire protection program.	4.2.2	Conform	See Subsection 9.5.1.6.	
~~CP~~STD COL 9.5(1)	The policy document shall define the fire protection interfaces with other organizations and assign responsibilities for the coordination activities.	4.2.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The policy document shall include the authority for conflict resolution.	4.2.4	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	A fire prevention program shall be established and documented to include all of the following: (1) Fire safety information for all employees and contractors, including as a minimum familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms, including evacuation. (2) Documented plant inspections, including provisions for handling of remedial actions to correct conditions that increase fire hazards. (3) Procedures for the control of general housekeeping practices and the control of transient combustibles. (4) Procedures for the control of flammable and combustible gases in accordance with NFPA standards.	4.3	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-2R (Sheet 2 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	(5) Procedures for the control of ignition sources, such as smoking, welding, cutting, and grinding (see NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work). (6) Fire prevention surveillance plan *(see* NFPA 601, *Standard* for Security Services in Fire Loss Prevention). (7) Fire-reporting procedure, including investigation requirements and corrective action requirements.				
~~CP~~STD COL 9.5(2)	A documented fire hazards analysis shall be made for each site.	4.4.1	Conform	See Appendix 9A.	CTS-01140
~~CP~~STD COL 9.5(2)	The analysis shall document all of the following: (1) Physical construction and layout of the buildings and equipment, including fire areas and the fire ratings of area boundaries. (2)* Inventory of the principal combustibles within each fire subdivision. (3) Description of the fire protection equipment, including alarm systems and manual and automatic extinguishing systems. (4) Description and location of any equipment necessary to ensure a safe shutdown, including cabling and piping between equipment. (5) Analysis of the postulated fire in each fire area, including its effect on safe shutdown equipment, assuming automatic and manual fire protection equipment do not function. (6) Analysis of the potential effects of a fire on life safety, release of contamination, impairment of operations, and property loss, assuming the operation of installed fire-extinguishing equipment. (7) Analysis of the potential effects of other hazards, such as earthquakes, storms, and floods, on fire protection. (8) Analysis of the potential effects of an uncontained fire in causing other problems not related to safe shutdown, such as a release of	4.4.2	Conform	See Appendix 9A.	CTS-01140

Table 9.5.1-2R (Sheet 3 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	contamination and impairment of operations. (9) Analysis of the postfire recovery potential. (10) Analysis for the protection of nuclear safety–related systems and components from the inadvertent actuation or breaks in a FPS. (11) Analysis of the smoke control system and the impact smoke can have on nuclear safety and operation for each fire area. (12) Analysis of the emergency planning and coordination requirements necessary for effective loss control, including any necessary compensatory measures to compensate for the failure or inoperability of any active or passive fire protection system or feature.				
~~CP~~STD COL 9.5(1)	A formal procedure system for all actions pertaining to the fire protection program shall be established, including all of the following: (1) Inspection, testing, maintenance, and operation of fire protection systems and equipment, both manual and automatic, such as detection and suppression systems. (2) Inspection, testing, and maintenance of passive fire protection features, such as fire barriers and penetration seals. (3) Trend analysis requirements. (4) Provisions for entering areas with access restrictions. (5) Training requirements.	4.5	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	A quality assurance program shall be established in accordance with ASME NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, for all of the following aspects of the fire protection program related to nuclear safety: (1) Design and procurement document control. (2)* Instructions, procedures, and drawings. (3)* Control of purchased material, equipment, and services. (4)* Inspection.	4.6.1	Conform	See Chapter 17 and Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-2R (Sheet 4 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	(5)* Test and test control. (6)* Inspection, test, and operating status. (7)* Nonconforming items. (8)* Corrective action. (9)* Records. (10)* Audits.				
~~CP~~STD COL 9.5(1)	The quality assurance program shall be documented in detail to verify its scope and adequacy.	4.6.2	Conform	See Chapter 17 and Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	A written fire emergency plan shall be established.	4.7.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	As a minimum, this plan shall include the following: (1) Response to fire and supervisory alarms. (2) Notification of plant and public emergency forces. (3) Evacuation of personnel. (4) Coordination with security, maintenance, operations, and public information personnel. (5) Fire extinguishment activities. (6) Postfire recovery and contamination control activities. (7) Control room operations during an emergency. (8) Prefire plan. (9) Description of interfaces with emergency response organizations, security, safety, and others having a role in the fire protection program, including agreements with outside assistance agencies, such as fire departments and rescue services.	4.7.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	A plant fire brigade shall be established as indicated in Chapter 6.	4.8	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The owner or a designated manager shall develop, implement, and update as necessary a fire prevention surveillance plan integrated with recorded rounds to all accessible sections of the plant.	5.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Inspections of the plant shall be conducted in accordance with NFPA 601, Standard for Security Services in Fire Loss Prevention.	5.2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	A prepared checklist shall be used for the inspection.	5.2.3	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-2R (Sheet 5 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Areas of primary containment and high-radiation areas normally inaccessible during plant operation shall be inspected as plant conditions permit but at least during each refueling outage.	5.2.4	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The results of each inspection shall be documented and retained for 2 years.	5.2.5	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	For those plant areas inaccessible for periods greater than 2 years, the most recent inspection shall be retained.	5.2.5.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Plant administrative procedures shall specify appropriate requirements governing the storage, use, and handling of flammable and combustible liquids and flammable gases.	5.3.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	An inventory of all temporary flammable and combustible materials shall be made for each fire area, identifying the location, type, quantity, and form of the materials.	5.3.1.1	Conform	.	CTS-01140
	Temporary but predictable and repetitive concentrations of flammable and combustible materials shall be considered.	5.3.1.2	Conform		
~~CP~~STD COL 9.5(1)	Combustibles, other than those that are an inherent part of the operation, shall be restricted to designated storage compartments or spaces.	5.3.1.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Consideration shall be given to reducing the fire hazard by limiting the amount of combustible materials.	5.3.1.4	Conform		CTS-01140
~~CP~~STD COL 9.5(~~2~~1)	The storage and use of hydrogen. shall be in accordance with NFPA 55, Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks	5.3.1.5	Conform	See Subsection 9.5.1.6.	CTS-01155
~~CP~~STD COL 9.5(1)	The temporary use of wood shall be minimized.	5.3.1.6	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-2R (Sheet 6 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Plant administrative procedures shall specify that if wood must be used in the power block, it shall be listed pressure-impregnated fire-retardant lumber.	5.3.1.7	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Housekeeping shall be performed in such a manner as to minimize the probability of fire.	5.3.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Accumulations of combustible waste material, dust, and debris shall be removed from the plant and its immediate vicinity at the end of each work shift or more frequently as necessary for safe operations.	5.3.2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Plant administrative procedures shall require the following: (1) The total fire loads, including temporary and permanent combustible loading, shall not exceed those quantities established for extinguishment by permanently installed fire protection systems and equipment. (2) Where limits are temporarily exceeded, the plant fire protection manager shall ensure that appropriate fire protection measures are provided.	5.3.3.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The fire protection manager or a designated representative shall conduct weekly walk-through inspections to ensure implementation of required controls.	5.3.3.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	During major maintenance operations, the frequency of these walk-throughs shall be increased to daily.	5.3.3.2.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The results of these inspections shall be documented and the documentation retained for a minimum of 2 years.	5.3.3.2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	When the work is completed, the plant fire protection manager shall have the area inspected to confirm that transient combustible loadings have been removed from the area.	5.3.3.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Extra equipment shall then be returned to its proper location.	5.3.3.3.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1) ~~CP~~STD COL 9.5(1)	The results of this inspection shall be documented and retained for 2 years.	5.3.3.3.2	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-2R (Sheet 7 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	Only noncombustible panels or flame-retardant tarpaulins or approved materials of equivalent fire-retardant characteristics shall be used.	5.3.3.4	Conform	See Subsection 9.5.1.6.	
~~CP~~STD COL 9.5(1)	Any fabrics or plastic films used, other than those complying with 5.3.3.4, shall be certified to conform to the large-scale fire test described in NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.	5.3.3.5	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Flammable and combustible liquid storage and use shall be in accordance with NFPA 30, Flammable and Combustible Liquids Code.	5.3.4.1	Conform		CTS-01140
	Where oil-burning equipment, stationary combustion engines, or gas turbines are used, they shall be installed and used in accordance with NFPA 31, Standard for the Installation of Oil-Burning Equipment, or NFPA 37, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines, as appropriate.	5.3.4.2	Conform		
	Flammable and combustible liquid and gas piping shall be in accordance with ASME B31.1, Power Piping, or ASME Boiler and Pressure Vessel Code, Section III, as applicable.	5.3.4.3	Conform		
	Hydraulic systems shall use only listed fire-resistant hydraulic fluids, except as specified by 5.3.4.5.	5.3.4.4	Conform		
	Where unlisted hydraulic fluids must be used, they shall be protected by a fire suppression system.	5.3.4.5	Conform		
	The ignition of leaked or spilled liquid shall be minimized by the following methods: (1)* Keeping the liquid from contact with hot parts of the steam system (wall temperature greater than or equal to ignition temperature), such as steam pipes and ducts, entry valve, turbine casing, reheater, and bypass valve. (2) Using suitable electrical equipment. (3) Sealing the insulation of hot plant components to prevent liquid saturation. (4) Using concentric piping. (5) Using liquid collection systems.	5.3.4.6	Conform		

Table 9.5.1-2R (Sheet 8 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Plant administrative procedures shall require an in-plant review and prior approval of all work plans to assess potential fire hazard situations.	5.4.1.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Where potential fire hazards are determined to exist, special precautions shall be taken to define appropriate conditions under which the work is authorized.	5.4.1.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Written permission from the fire protection manager or a designated alternate shall be obtained before starting activities involving cutting, welding, grinding, or other potential ignition sources.	5.4.2.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	A permit shall not be issued until all of the following are accomplished: (1) An inspection has determined that hot work can be conducted at the desired location. (2) Combustibles have been moved away or covered. (3) The atmosphere is nonflammable. (4) A trained fire watch (with equipment) is posted for the duration of the work and for 30 minutes thereafter, to protect against sparks or hot metal starting fires.	5.4.2.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	All cracks or openings in floors shall be covered or closed.	5.4.2.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Smoking shall be prohibited at or in the vicinity of hazardous operations or combustible and flammable materials.	5.4.3.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	“No Smoking” signs shall be posted in the areas specified in 5.4.3.1.	5.4.3.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Smoking shall be permitted only in designated and supervised safe areas of the plant.	5.4.3.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Where smoking is permitted, safe receptacles shall be provided for smoking materials.	5.4.3.4	Conform		CTS-01140

Table 9.5.1-2R (Sheet 9 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	All temporary electrical wiring shall comply with the following to minimize the ignition of flammable materials: (1) Be kept to a minimum. (2) Be suitable for the location. (3) Be installed and maintained in accordance with NFPA 70, National Electrical Code, or ANSI/IEEE C2, National Electrical Safety Code, as appropriate. (4) Be arranged so that energy shall be isolated by a single switch. (5) Be arranged so that energy shall be isolated when not needed.	5.4.4	Conform	.	CTS-01140
~~CP~~STD COL 9.5(1)	Only safely installed, approved heating devices shall be used in all locations.	5.4.5.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Ample clearance shall be provided around stoves, heaters, and all chimney and vent connectors to prevent ignition of adjacent combustible materials in accordance with NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances (connectors and solid fuel); NFPA 54, National Fuel Gas Code (fuel gas appliances); and NFPA 31, Standard for the Installation of Oil-Burning Equipment (liquid fuel appliances).	5.4.5.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Refueling operations of heating equipment shall be conducted in an approved manner.	5.4.5.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Heating devices shall be situated so that they are not likely to overturn.	5.4.5.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Temporary heating equipment, when utilized, shall be monitored and maintained by properly trained personnel.	5.4.5.5	Conform		CTS-01140
	Open-flame or combustion-generated smoke shall not be used for leak testing.	5.4.6	Conform	See Subsection 9.5.1.6.	
~~CP~~STD COL 9.5(1)	Plant administrative procedures shall specify appropriate requirements governing the control of electrical appliances in all plant areas.	5.4.7	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Temporary buildings, trailers, and sheds, whether individual or grouped, shall be constructed of noncombustible material and shall be separated from other structures.	5.5.1.1	Conform		CTS-01140

Table 9.5.1-2R (Sheet 10 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Temporary buildings, trailers, and sheds and other structures constructed of combustible or limited-combustible material shall be separated from other structures by a minimum distance of 30 ft., unless otherwise permitted by 5.5.1.3.	5.5.1.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Where all portions of the exposed building (walls, roof) within 30 ft. of the exposure constitute a rated fire barrier, the minimum separation distance shall be permitted to be reduced in accordance with Table 5.5.1.3.	5.5.1.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	All exterior buildings, trailers, sheds, and other structures shall have the appropriate type and size of portable fire extinguishers.	5.5.1.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Where coverings are utilized for protection of the outdoor storage of materials or equipment, the following shall apply: (1) Only approved fire-retardant tarpaulins or other acceptable materials shall be used. (2) All framing material used to support such coverings shall be either noncombustible or fire-retardant pressure-impregnated wood. (3) Covered storage shall not be located within 30 ft. of any building.	5.5.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	All interior temporary structures shall be constructed of noncombustible, limited-combustible, or fire-retardant pressure-impregnated wood.	5.5.3.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Structures constructed of noncombustible or limited-combustible materials shall be protected by an automatic fire suppression system unless the fire hazard analysis determines that automatic suppression is not required.	5.5.3.1.1	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-2R (Sheet 11 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The structure shall be protected by an automatic fire suppression system if the structure is constructed of fire-retardant pressure-impregnated wood.	5.5.3.1.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The use of interior temporary coverings shall comply with the following criteria: (1) Be limited to special conditions where interior temporary coverings are necessary. (2) Be constructed of approved fire-retardant tarpaulins.	5.5.3.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Where framing is required, it shall be constructed of noncombustible, limited-combustible, or fire-retardant pressure-impregnated wood.	5.5.3.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	All interior temporary facilities shall have the appropriate type and size of portable fire extinguisher.	5.5.3.4	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	A written procedure shall be established to address impairments to fire protection systems and features and other plant systems that directly affect the level of fire risk (e.g., ventilation systems, plant emergency communication systems).	5.6.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Impairments to fire protection systems shall be as short in duration as practical.	5.6.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Appropriate post maintenance testing shall be performed on equipment that was impaired to ensure that the system will function properly.	5.6.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Any change to the design or function of the system after the impairment shall be considered in establishing the testing requirements and shall be reflected in the appropriate design documents and plant procedures.	5.6.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Upon installation, all new fire protection systems and passive fire protection features shall be preoperationally inspected and tested in accordance with applicable NFPA standards.	5.7.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Where appropriate test standards do not exist, inspections and test procedures described in the purchase and design specification shall be followed.	5.7.2	Conform		CTS-01140

Table 9.5.1-2R (Sheet 12 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Fire protection systems and passive fire protection features shall be inspected, tested, and maintained in accordance with applicable NFPA standards, manufacturers' recommendations, and requirements established by those responsible for fire protection at the plant.	5.7.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Inspection, testing, and maintenance shall be performed using established procedures with written documentation of results and a program of follow-up actions on discrepancies.	5.7.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Consideration shall be given to the inspection, testing, and maintenance of nonfire protection sysytems and equipment that have a direct impact on the level of fire risk within the plant.	5.7.5	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Detailed prefire plans shall be developed for all site areas.	6.1.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Prefire plans shall detail the fire area configurations and fire hazards to be encountered in the fire area along with any safety-related components and fire protection systems and features that are present.	6.1.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Prefire plans shall be reviewed and, if necessary, updated at least every 2 years.	6.1.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Prefire plans shall be available in the control room and made available to the plant fire brigade.	6.1.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	A minimum of five plant fire brigade members shall be available for response at all times.	6.2.1.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Fire brigade members shall have no other assigned normal plant duties that would prevent immediate response to a fire or other emergency as required.	6.2.1.2	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-2R (Sheet 13 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The brigade leader and at least two brigade members shall have training and knowledge of plant safety–related systems to understand the effects of fire and fire suppressants on safe shutdown capability.	6.2.1.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The fire brigade shall be notified immediately upon verification of a fire or fire suppression system actuation.	6.2.1.4	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Plant fire brigade members shall be physically qualified to perform the duties assigned.	6.2.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Each member shall pass an annual physical examination to determine that the fire brigade member can perform strenuous activity.	6.2.2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The physical examination shall determine each member's ability to use respiratory protection equipment.	6.2.2.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Each fire brigade member shall meet training qualifications as specified in Chapter 6, Section 6.3.	6.2.2.4	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Plant fire brigade members shall receive training consistent with the requirements contained in NFPA 600, Standard on Industrial Fire Brigades, or NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, as appropriate.	6.3.1.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Fire brigade members shall be given quarterly training and practice in fire fighting.	6.3.1.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	A written program shall detail the fire brigade training program.	6.3.1.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Written records that include but are not limited to the following shall be maintained for each fire brigade member: (1) Initial fire brigade classroom and hands-on training. (2) Refresher training. (3) Special training schools attended. (4) Drill attendance records. (5) Leadership training for fire brigades.	6.3.1.4	Conform		CTS-01140

Table 9.5.1-2R (Sheet 14 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Drills shall be conducted quarterly for each shift to test the response capability of the fire brigade.	6.3.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Fire brigade drills shall be developed to test and challenge fire brigade response, including the following: (1) Brigade performance as a team. (2) Proper use of equipment. (3) Effective use of prefire plans. (4) Coordination with other groups.	6.3.2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Fire brigade drills shall be conducted in various plant areas, especially in those areas identified by the fire hazards analysis to be critical to plant operation and to contain significant fire hazards.	6.3.2.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Drill records shall be maintained detailing the drill scenario, fire brigade member response, and ability of the fire brigade to perform the assigned duties.	6.3.2.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	A critique shall be held after each drill.	6.3.2.5	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The plant fire brigade shall be provided with equipment that enables its members to adequately perform their assigned tasks.	6.4.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Fire brigade equipment shall be tested and maintained.	6.4.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Written records shall be retained for review.	6.4.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	A mutual aid agreement shall be offered to the local off-site fire department.	6.5.1.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Where possible, the plant fire protection manager and the off-site fire authorities shall develop a plan for their interface.	6.5.1.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The fire protection manager also shall consult with the off-site fire department to make plans for fire fighting and rescue, including assistance from other organizations, and to maintain these plans.	6.5.1.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The local off-site fire department shall be invited to participate in an annual drill.	6.5.1.4	Conform	See Subsection 9.5.1.6.	CTS-01140

Table 9.5.1-2R (Sheet 15 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Fire fighters from the off-site fire department who are expected to respond to a fire at the plant shall be familiar with the plant layout.	6.5.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The access routes to fires in the controlled area (to which access doors are locked) shall be planned in advance.	6.5.2.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The off-site fire department shall be offered instruction and training in radioactive materials, radiation, and hazardous materials that could be present.	6.5.2.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Plant management shall designate a plant position to act as a liaison to the off-site fire department when it responds to a fire or other emergency at the plant.	6.5.3.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Plant management shall ensure that the off-site fire department personnel are escorted at all times and emergency actions are not delayed.	6.5.3.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The fire brigade shall have at its disposal the necessary equipment to assist with routing water from the affected area.	6.6	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	All plant areas shall be accessible for fire-fighting purposes.	6.7.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Prefire plans shall identify those areas of the plant that are locked and have limited access for either security or radiological control reasons.	6.7.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Provisions shall be made to allow access to the locked areas, including having security and health physics personnel respond to the fire area along with the fire brigade, if necessary.	6.7.2.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Health physics personnel shall confer with the fire brigade leader to determine the safest method of access to any radiologically controlled area.	6.7.2.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Full advantage shall be taken of all fixed radiation shielding to protect personnel responding for fire suppression purposes.	6.8.1	Conform		CTS-01140

Table 9.5.1-2R (Sheet 16 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Health physics personnel shall advise the fire brigade leader of the best method for affording radiological protection.	6.8.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	If fixed ventilation systems are not capable of removing smoke and heat, the fire brigade shall utilize portable ventilation equipment (See Chapter 8, Section 8.4).	6.9	Conform	See Subsection 9.5.1.6. CPNPP Fire Brigade has portable equipment.	CTS-01140
	A fire-safe shutdown analysis shall be prepared and maintained for the operating life of the reactor, and shall include, as a minimum, all of the following: (1) Fire hazards analysis. (2) Safe shutdown analysis. (3) Internal plant examination of external fire events for severe accident vulnerabilities.	7.2	Conform	US-APWR designed to allow safe-shutdown from two of three unaffected trains of safety-related equipment using normal plant equipment. See DCD Chapter 7, Section 7.4.	
	The fire hazards analysis shall include the criteria indicated in Chapter 4, Section 4.4.	7.2.1	Conform	See Appendix 9A.	
	A safe shutdown analysis of the effects of a fire on those essential structures, systems, and components required to safely shut down the plant and maintain it in a safe shutdown condition shall be performed, including, as a minimum, the requirements of this section.	7.2.2	Conform		
	A safe shutdown system available/unavailable calculation or table that provides the following shall be prepared and maintained for each fire area: (1) The document shall identify all safe shutdown equipment that is operable or inoperable due to the effects of a fire in that fire area. (2) The document shall demonstrate compliance with the requirements of Chapter 7, Sections 7.3 and 7.4.	7.2.2.1	Conform	See Appendix 9A.	
	A shutdown logic diagram shall be available that identifies the conditions necessary to achieve and maintain safe shutdown capability in the event of a fire and those plant features necessary to realize these conditions, including auxiliary and support features.	7.2.2.2	Conform		
	A risk assessment that estimates the potential risk from a fire in relation to the plant's core damage frequency shall be prepared.	7.2.3	Conform	Fire PRA for US-APWR is performed. See Chapter 19.	

Table 9.5.1-2R (Sheet 23 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Procedures shall be developed for actions necessary to achieve FSSD.	7.5.1	Conform	See Subsection 9.5.1.6.	CTS-01140
	Operator actions necessary to achieve FSSD of the reactor shall meet criteria acceptable to the AHJ.	7.5.2.1	Conform	No operator manual actions required to achieve safe-shutdown.	
	No credit shall be taken for operator actions required to effect repairs to equipment to achieve FSSD of the reactor.	7.5.2.2	Conform		
~~CP~~STD COL 9.5(1)	Personnel necessary to achieve and maintain the plant in FSSD following a fire shall be provided from the normal on-site staff, exclusive of the fire brigade.	7.5.2.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The operator training program shall include performance-based simulator training on FSSD procedures.	7.5.2.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Walk-through of operator actions necessary to achieve FSSD of the reactor shall be performed to verify that the actions are feasible and shall be integrated into the operator training program.	7.5.2.5	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Postfire shutdown and recovery plans shall be included in the station emergency preparedness plan.	7.5.2.6	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Drills and operator requalification training shall ensure that operations personnel are familiar with and can accomplish the necessary actions.	7.5.2.7	Conform		CTS-01140
	Access routes to areas containing equipment necessary for safe shutdown of the reactor shall be protected from the effects of smoke and fire.	7.5.3.1.1	Conform		
	Two separate access routes shall be provided from the MCR to the remote shutdown location.	7.5.3.1.2	Conform		
	Emergency lighting shall be provided for the access routes and the remote shutdown location (see Chapter 8, Section 8.6).	7.5.3.1.3	Comply		
	Operator safety shall not be threatened by fire conditions while FSSD of the reactor is being implemented.	7.5.3.2.1	Conform		
	Operation of equipment required to effect FSSD of the reactor shall not require any extraordinary actions by the operator.	7.5.3.2.2	Conform		

Table 9.5.1-2R (Sheet 28 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	For the configuration specified in 8.1.3.4.3.1, the fire rating of the internal conduit seal shall be equivalent to the rating of the fire barrier being penetrated.	8.1.3.4.3.2	Conform		
	Where approved full-scale fire tests indicate that internal conduit seals are not necessary, internal conduit seals shall not be required.	8.1.3.4.3.3	Conform		
	All fire-rated assemblies shall be tested with a positive pressure in the furnace.	8.1.3.4.4	Conform		
~~CP~~STD COL 9.5(1)	Normally closed fire doors in fire barriers shall be identified with a sign indicating “Fire Door — Keep Closed.”	8.1.3.4.5	Conform		CTS-01140
	Design features that provide for monitoring and control of fire doors to ensure fire door operability and fire barrier integrity shall be provided, unless otherwise permitted by 8.1.3.6.	8.1.3.5	Conform		
~~CP~~STD COL 9.5(1)	Administrative procedures shall be permitted to be used instead of the design features required by 8.1.3.5.	8.1.3.6	Conform		CTS-01140
	NFPA 101, Life Safety Code, shall be the standard for life safety from fire in the design and operation of the Advanced Light Water Reactor, except where modified by this standard.	8.2.1	Conform		
	The majority of the areas involved in the transfer of nuclear energy to electrical energy shall be considered as special-purpose industrial occupancies and special-structure windowless buildings, as defined in NFPA 101, Life Safety Code.	8.2.2	Conform		
	In determining the exits for an Advanced Light Water Reactor plant, the actual number of personnel and occupancy hazards during maintenance, refueling, and testing shall determine the exit requirements and occupant load based on NFPA 101, Life Safety Code.	8.2.3	Conform		

Table 9.5.1-2R (Sheet 29 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	Cafeterias, lunchrooms, conference rooms, and assembly rooms having an occupant load greater than 50 shall conform to the new assembly occupancy requirements in NFPA 101, Life Safety Code.	8.2.4	Conform		CTS-01140
~~CP~~STD COL 9.5(2)	General office areas, office buildings, and training facilities shall conform to the business occupancy requirements in NFPA 101, Life Safety Code.	8.2.5	Conform		CTS-01140
~~CP~~STD COL 9.5(2)	Warehouses and storage areas shall conform to the storage occupancy requirements in NFPA 101, Life Safety Code.	8.2.6	Conform		CTS-01140
	Construction materials for the Advanced Light Water Reactor plant shall be classified by at least one of the following test methods appropriate to the end-use configuration of the material: (1) NFPA 220, Standard on Types of Building Construction. (2) ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C. (3) NFPA 251, Standard Methods of Tests of Fire Resistance of Building Construction and Materials(ASTM E 119, Standard Test Methods for Fire Tests of Building Construction and Materials). (4) NFPA 253, Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source. (5) NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials(ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials). (6) NFPA 256, Standard Methods of Fire Tests of Roof Coverings. (7) NFPA 259, Standard Test Method for Potential Heat of Building Materials	8.3.1	Conform		
	All walls, floors, and structural components, except interior finish materials, shall be of noncombustible construction.	8.3.2	Conform		
	Interior wall or ceiling finish classification shall be in accordance with NFPA 101, Life Safety Code, requirements for Class A material.	8.3.2.1	Conform		

Table 9.5.1-2R (Sheet 35 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	Where gaseous fire suppression systems are installed, floor drains shall be provided with adequate seals, or the fire suppression system shall be sized to compensate for the loss of fire suppression agent through the drains.	8.5.5	Conform		
~~CP~~STD COL 9.5(1)	Drainage facilities shall be provided for outdoor oil-insulated transformers, or the ground shall be sloped such that oil spills flow away from buildings, structures, and adjacent transformers.	8.5.6	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Unless drainage from oil spills is accommodated by sloping the ground around transformers away from structures or adjacent equipment, consideration shall be given to providing curbed areas or pits around transformers.	8.5.6.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	If a layer of uniformly graded stone is provided in the bottom of the curbed area or pit as a means of minimizing ground fires, the following shall be assessed: (1) The sizing of the pit shall allow for the volume of the stone. (2) The design shall address the possible accumulation of sediment or fines in the stone.	8.5.6.2	Conform	See Subsection 9.5.1.2.1.	CTS-01140
~~CP~~STD COL 9.5(1)	For facilities consisting of more than one generating unit, a curb or trench drain shall be provided on solid floors where the potential exists for an oil spill, such that oil released from the incident on one unit will not expose an adjacent unit.	8.5.7	Conform		CTS-01140
	Water drainage from areas that might contain radioactivity shall be collected, sampled, and analyzed before discharge to the environment.	8.5.8	Conform		
	Water released during fire suppression operations in areas containing radioactivity shall be drained to a location that is acceptable for the containment of radioactive materials.	8.5.9	Conform		

Table 9.5.1-2R (Sheet 36 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	Emergency lighting units shall provide lighting levels as required in 8.6.2.	8.6.1	Conform	See Subsection 9.5.3.3.2.	
	The lighting units shall be sized to provide a duration of operation that will illuminate the egress and access routes to areas containing safe shutdown equipment and the equipment operation until all required operator actions are completed or until normal or emergency plant lighting can be reestablished.	8.6.2	Conform	See Subsection 9.5.3.3.2.	
	The illumination of means of egress shall be in accordance with NFPA 101, Life Safety Code, and shall include emergency lighting and marking of the means of egress.	8.6.3	Conform		
	The floor of the means of egress and the safe shutdown operations shall be illuminated to values of not less than 1 footcandle measured at the floor and at safe shutdown equipment at all points, including the following: (1) Angles. (2) Intersections of corridors. (3) Passageways. (4) Stairways. (5) Landings of stairways. (6) Exit doors. (7) Safe shutdown equipment. (8) Access and egress routes to safe shutdown equipment.	8.6.4	Conform		
	The required illumination shall be so arranged that the failure of any single lighting unit, such as the burning out of a single light bulb, will not leave any area in darkness.	8.6.5	Conform		
~~CP~~STD COL 9.5(1)	Suitable battery-powered hand lights shall be provided for emergency use by the fire brigade and other operations personnel required to achieve safe plant shutdown.	8.6.6	Conform		CTS-01140
	The plant shall be provided with a lightning protection system in accordance with NFPA 780, Standard for the Installation of Lightning Protection Systems.	8.7	Conform		

Table 9.5.1-2R (Sheet 38 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	Flexible metallic tubing shall be used only in lengths less than 5 ft. to connect components to equipment.	8.8.7.3	Conform		
	Other raceways shall be made of noncombustible materials.	8.8.7.4	Conform		
	Buildings shall be protected from exposure fires by any one of the following: (1) Listed 3-hour fire barrier with automatic or self-closing fire doors having a fire protection rating of 3 hours and listed penetration protection of a 3-hour rating. (2) Spatial separation of at least 50 ft. (3) Exterior exposure protection.	8.9	Conform		
	The electrical design and installation of electrical generating, control, transmission, distribution, and metering of electrical energy shall be provided in accordance with NFPA 70, National Electrical Code, or ANSI/IEEE C2, National Electrical Safety Code, as applicable.	8.10	Conform		
~~CP~~STD COL 9.5(1)	The plant-approved voice/alarm communications system in accordance with NFPA 72, National Fire Alarm Code, shall be available on a priority basis for fire announcements, directing the plant fire brigade, and fire evacuation announcements.	8.11.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	A portable radio communications system shall be provided for use by the fire brigade and other operations personnel required to achieve safe shutdown.	8.11.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The radio communications system shall not interfere with the communications capabilities of the plant security force.	8.11.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The impact of fire damage on the communications systems shall be considered when fixed repeaters are installed to permit the use of portable radios.	8.11.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Repeaters shall be located such that a fire-induced failure of the repeater will not also cause failure of the other communications systems relied on for safe shutdown.	8.11.5	Conform		CTS-01140

Table 9.5.1-2R (Sheet 39 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Plant control equipment shall be designed so that the control equipment is not susceptible to radio frequency interferences from portable radios.	8.11.6	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Preoperational tests and periodic testing shall demonstrate that the frequencies used for portable radio communications will not affect actuation of protective relays or other electrical components.	8.11.7	Conform		CTS-01140
	A fire hazards analysis shall be conducted to determine the fire protection requirements for the facility.	9.1.1	Conform	See Appendix 9A.	
	All fire protection systems, equipment, and installations shall be dedicated to fire protection purposes unless permitted by the following: (1) The requirement of 9.1.2 shall not apply to fire protection systems, equipment, and installations where in accordance with 9.4.10. (2) Fire Protection Systems shall be permitted to be used to provide redundant backup to nuclear safety–related systems provided that both the following criteria are met: (a) The fire protection systems shall meet the design basis requirements of the nuclear safety–related systems. (b) Fire protection systems used in 9.1.2(2)(a) shall be designed to handle both functions.	9.1.2	Conform	The fire protection system may provide backup functions for severe accident mitigation if the system is available.	
	All fire protection equipment shall be listed or approved for its intended service.	9.1.3	Conform		

Table 9.5.1-2R (Sheet 40 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	The fire water supply shall be calculated on the basis of the largest expected flow rate for a period of 2 hours but shall not be less than 300,000 gal (1,135,500 L), and the following criteria also shall apply: (1) The flow rate shall be based on 500 gpm (1892.5 L/min) for manual hose streams plus the largest design demand of any sprinkler or fixed water spray system as determined in accordance with this standard, with NFPA 13, Standard for the Installation of Sprinkler Systems, or with NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection. (2) The fire water supply shall be capable of delivering the design demand specified in 9.2.1(1) with the hydraulically least demanding portion of the fire main loop out of service.	9.2.1	Conform	See Subsection 9.5.1.2.2.	CTS-01140
CP COL 9.5(2)	Two 100-percent [minimum of 300,000 gal (1,135,500 L) each] system capacity tanks shall be installed, and the following shall apply: (1) The tanks shall be interconnected such that fire pumps can take suction from either or both. (2) A failure in one tank or its piping shall not cause both tanks to drain. (3) The tanks shall be designed in accordance with NFPA 22, Standard for Water Tanks for Private Fire Protection. (4) Refill times for filling the water tanks shall not apply.	9.2.2	Conform	See Subsection 9.5.1.2.2.	
CP COL 9.5(2)	The tanks shall not be supplied by an untreated, raw water source	9.2.3	Conform	See Subsection 9.5.1.2.2.	
~~CP~~STD COL 9.5(2)	Fire pumps shall meet the requirements of NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, and shall be automatic starting.	9.2.4.1	Conform	See Subsection 9.5.1.2.2.	CTS-01140
~~CP~~STD COL 9.5(2)	Fire pumps shall be provided to ensure that 100% of the flow rate capacity will be available assuming failure of the largest pump.	9.2.4.2	Conform	See Subsection 9.5.1.2.2.	CTS-01140

Table 9.5.1-2R (Sheet 41 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	Individual fire pump connections to the yard fire main loop shall be separated with sectionalizing valves between connections, and the following criteria also shall be met: (1) Each pump and its driver and controls shall be located in a room separated from the remaining fire pumps by a fire wall with a minimum rating of 3 hours. (2) The fuel for the diesel fire pump(s) shall be separated so that it does not provide a fire source exposing nuclear safety–related equipment.	9.2.4.3	Conform	See Subsection 9.5.1.2.2.	CTS-01140
~~CP~~STD COL 9.5(2)	A method of automatic pressure maintenance of the fire protection system shall be provided independent of the fire pumps.	9.2.4.4	Conform	See Subsection 9.5.1.2.2.	CTS-01140
~~CP~~STD COL 9.5(2)	Supervisory signals and visible indicators required by NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, shall be received in the control room.	9.2.4.5	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	All fire protection water supply and system control valves shall be under a periodic inspection program and shall be supervised by one of the following methods: (1) Electrical supervision with audible and visual signals in the MCR or another constantly attended location and monthly valve inspections. (2) Locking valves in their normal position and monthly valve inspections with keys made available only to authorized personnel. (3) Sealing valves in their normal positions and weekly valve inspections with this option utilized only where valves are located within fenced areas or under the direct control of the property owner.	9.3	Conform		CTS-01140
~~CP~~STD COL 9.5(2)	The underground yard fire main loop shall be installed to furnish anticipated water requirements, and the following criteria also shall be met: (1) The type of pipe and water treatment shall be design considerations, with tuberculation as one of the parameters. (2) Means for inspecting and flushing the systems shall be provided.	9.4.1	Conform	See Subsection 9.5.1.2.2.	CTS-01140

Table 9.5.1-2R (Sheet 42 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	Approved visually indicating sectional control valves such as post indicator valves shall be provided to isolate portions of the main for maintenance or repair without simultaneously shutting off the supply to both primary and backup fire suppression systems.	9.4.2	Conform	See Subsection 9.5.1.2.2.	CTS-01140
~~CP~~STD COL 9.5(2)	Valves shall be installed to allow isolation of outside hydrants from the fire main for maintenance or repair without interrupting the water supply to automatic or manual fire suppression systems.	9.4.3	Conform	See Subsection 9.5.1.2.3.	CTS-01140
~~CP~~STD COL 9.5(2)	Sectional control valves shall allow maintaining independence of the individual loop around each unit, and the following also shall apply: (1) For such installations, common water supplies shall also be permitted to be utilized. (2) For multiple-reactor sites with widely separated plants [approaching 1 mi (1.6 km) or more], separate yard fire main loops shall be used.	9.4.4	Conform	See Subsection 9.5.1.2.3.	CTS-01140
~~CP~~STD COL 9.5(2)	Outside manual hose installation shall provide an effective hose stream to any on-site location, and the following also shall apply: (1) Hydrants with individual hose gate valves shall be installed approximately every 250 ft. apart on the yard main system. (2) A hose house equipped with hose and combination nozzle and other auxiliary equipment specified in NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, shall be provided at intervals of not more than 1000 ft. along the yard main system. (3) Mobile means of providing hose and associated equipment, such as hose carts or trucks, shall be permitted in lieu of hose houses, and where provided, such mobile equipment shall be equivalent to that supplied by three hose houses.	9.4.5	Conform	See Subsection 9.5.1.2.3.	CTS-01140

Table 9.5.1-2R (Sheet 43 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	One of the following criteria shall be met: (1) Threads compatible with those used by local fire departments shall be provided on all hydrants, hose couplings, and standpipe risers. (2) The fire departments shall be provided with adapters that allow interconnection between plant equipment and the fire department equipment.	9.4.6	Conform	See Subsection 9.5.1.2.3.	CTS-01140
	Sprinkler systems and manual hose station standpipes shall have connections to the plant underground water main so that a single active failure or a crack in a moderate-energy line can be isolated so as not to impair both the primary and the backup fire suppression systems unless otherwise permitted by the following: (1) Alternatively, headers fed from each end shall be permitted inside buildings to supply both sprinkler and standpipe systems, provided steel piping and fittings meeting the requirements of ASME B31.1, Power Piping, are used for the headers (up to and including the first valve) supplying the sprinkler systems where such headers are part of the seismically analyzed hose standpipe system. (2) Where provided, such headers shall be considered an extension of the yard main system. (3) Each sprinkler and standpipe system shall be equipped with an outside screw and yoke (OS&Y) gate valve or other approved shutoff valve.	9.4.7	Conform		
	For all power block buildings, Class III standpipe and hose systems shall be installed in accordance with NFPA 14, Standard for the Installation of Standpipe and Hose Systems.	9.4.8	Conform		
~~CP~~STD COL 9.5(2)	For all other buildings on-site, the requirements for standpipe and hose systems shall be appropriate for the hazard being protected.	9.4.9	Conform		CTS-01140

Table 9.5.1-2R (Sheet 44 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The proper type of hose nozzle to be supplied to each area shall be based on the fire hazards analysis, and the following criteria also shall apply: (1) The usual combination spray/straight-stream nozzle shall not be used in areas where the straight stream can cause unacceptable damage. (2) Approved, electrically safe fixed fog nozzles shall be provided at locations where high-voltage shock hazards exist. (3) All hose nozzles shall have shutoff capability.	9.4.10	Conform		CTS-01140
	Provisions shall be made to supply water at least to standpipes and hose stations for manual fire suppression in all areas containing nuclear safety–related systems and components for safe shutdown in the event of a SSE.	9.4.11.1	Conform		
	The piping system serving these hose stations shall be analyzed for safe shutdown and earthquake loading and shall be provided with supports that ensure pressure boundary integrity.	9.4.11.2	Conform		
	The piping and valves for the portion of hose standpipe system affected by the functional requirement of 9.4.11.2 shall, as a minimum, satisfy the requirements of ASME B31.1, Power Piping.	9.4.11.3	Conform		
	The system shall be designed to flow a minimum of one Class III standpipe station in accordance with NFPA 14, Standard for the Installation of Standpipe and Hose Systems.	9.4.11.4	Conform		
	Where the seismic required hose stations are cross-connected to essential seismic Category I water systems, the fire flow shall not degrade the essential water system requirements.	9.4.11.5	Conform		
~~CP~~STD COL 9.5(3)	Portable and wheeled fire extinguishers shall be installed, inspected, maintained, and tested in accordance with NFPA 10, Standard for Portable Fire Extinguishers, unless otherwise permitted by 9.5.2.	9.5.1	Conform		CTS-01140

Table 9.5.1-2R (Sheet 45 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(3)	Where placement of extinguishers would result in required activities that are contrary to personnel radiological exposure concerns or nuclear safety–related concerns, fire extinguishers shall be permitted to be inspected at intervals greater than those specified in NFPA 10, Standard for Portable Fire Extinguishers, or consideration shall be given to locating the extinguishers outside high-radiation areas.	9.5.2	Conform		CTS-01140
	Automatic suppression systems shall be provided in all areas of the plant as required by the fire hazards analysis.	9.6.1	Conform	See Appendix 9A.	
~~CP~~STD COL 9.5(2)	Except as modified in this chapter, the following NFPA standards shall be used: (1) NFPA 11, Standard for Low-, Medium-, and High-Expansion Foam. (2) NFPA 12, Standard on Carbon Dioxide Extinguishing Systems. (3) NFPA 13, Standard for the Installation of Sprinkler Systems. (4) NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection. (5) NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems. (6) NFPA 17, Standard for Dry Chemical Extinguishing Systems. (7) NFPA 214, Standard on Water-Cooling Towers. (8) NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems.	9.6.2	Conform		CTS-01140
	The extinguishing systems chosen shall be based on the design parameters required as a result of the fire hazards analysis.	9.6.3	Conform	See Appendix 9A, conform except where RG 1.189 recommends protection not dictated by FHA.	
	Selection of extinguishing agent shall be based on all of the following: (1) Type or class of hazard. (2) Effect of agent discharge on critical equipment such as thermal shock, continued operability, water damage, overpressurization, or cleanup. (3) Health hazards.	9.6.4	Conform		

Table 9.5.1-2R (Sheet 46 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	Each fire suppression system shall be equipped with approved alarming devices and annunciate in a constantly attended area.	9.6.5	Conform		
	Fire signaling systems shall be provided in all areas of the plant as required by the fire hazards analysis.	9.7.1	Conform	Local alarm and MCR.	
	The requirements of this chapter shall constitute the minimum acceptable protective signaling system functions when used in conjunction with NFPA 72, National Fire Alarm Code.	9.7.2	Conform		
	The signaling system's initiating device and signaling line circuits shall provide emergency operation for fire detection, fire alarm, and water flow alarm during a single break or a single ground fault.	9.7.3	Conform		
	The fire signaling equipment used for fixed fire suppression systems shall give audible and visual alarm and system trouble annunciation in the plant control room for the power block buildings, and the following shall apply: (1) Local alarms shall be provided. (2) Other fire alarm signals from other buildings shall be permitted to annunciate at the control room or other locations that are constantly attended.	9.7.4	Conform		
	Audible signaling appliances shall meet the following criteria: (1) They shall produce a distinctive sound, used for no other purpose. (2) They shall be located and installed so that the alarm can be heard above ambient noise levels.	9.7.5	Conform		
~~CP~~STD COL 9.5(1)	Plant control room or plant security personnel shall be trained in the operation of all fire signaling systems used in the plant, including the ability to identify any alarm zone or fire protection system that is operating.	9.7.6	Conform		CTS-01140

Table 9.5.1-2R (Sheet 49 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	The oil collection systems shall be capable of collecting oil from all potential pressurized and unpressurized leakage sites in the reactor coolant pump oil systems, and the following criteria also shall apply: (1) Leakage shall be collected and drained to a vented closed container that can hold the entire oil system inventory.	10.2.1.10	Conform		
	(2) Leakage points to be protected shall include the following, where such features exist on the reactor coolant pumps: (a) Lift pump and piping. (b) Overflow lines. (c) Oil cooler. (d) Oil fill. (e) Drain lines and plugs. (f) Flanged connections on oil lines. (g) Oil reservoirs. (3) The drain line shall be large enough to accommodate the largest potential oil leak.				
~~CP~~STD COL 9.5(1)	Management procedures and controls necessary to ensure fire protection for fire hazards introduced during maintenance and refueling shall be provided.	10.2.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
	Backup fire suppression shall be provided so that total reliance is not placed on a single fire suppression system.	10.2.2.2	Conform		
~~CP~~STD COL 9.5(3)	Self-contained breathing apparatus meeting the following criteria shall be provided near the containment entrance for fire-fighting and damage control personnel: (1) The units shall be independent of any breathing apparatus or air supply systems provided for general plant activities. (2) The units shall be marked as emergency equipment.	10.2.2.3	Conform		CTS-01140
	The control room complex (including kitchen, office spaces, etc.) shall be protected against disabling fire damage and shall be separated from other areas of the plant by floors, walls, ceilings, and roofs having a minimum fire resistance rating of 3 hours.	10.3.1	Conform		

Table 9.5.1-2R (Sheet 50 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	Peripheral rooms in the control room complex shall have an automatic water-based suppression system, where required by the fire hazards analysis, and shall be separated from the control room by noncombustible construction with a minimum fire resistance rating of 1 hour.	10.3.2	Conform		
	Ventilation system openings between the control room and the peripheral rooms shall have automatic smoke dampers installed that close on operation of the fire detection and fire suppression systems.	10.3.3	Conform		
	Manual fire-fighting capability shall be provided for both of the following: (1) Fires originating within a cabinet, console, or connecting cables. (2) Exposure fires involving combustibles in the general room area.	10.3.4	Conform		
	Portable Class A and Class C fire extinguishers shall be located in the control room, and a fire hose station shall be installed outside the control room.	10.3.5	Conform		
~~CP~~STD COL 9.5(1)	Nozzles that are compatible with the hazards and the equipment in the control room shall be provided for the fire hose stations.	10.3.6	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The choice of nozzles shall satisfy fire-fighting requirements and electrical safety requirements and shall minimize physical damage to electrical equipment from hose stream impingement.	10.3.7	Conform	See Subsection 9.5.1.6.	CTS-01140
	Smoke detectors shall be provided in the control room complex, the electrical cabinets, and the consoles.	10.3.8	Conform		
	If redundant safe shutdown equipment is located in the same control room cabinet or console, the cabinet or console shall be provided with internal separation (noncombustible barriers) to limit the damage to one safety division.	10.3.9	NA	US-APWR provides separation of safety trains and remote shutdown console.	
~~CP~~STD COL 9.5(3)	Breathing apparatus for the control room operators shall be available.	10.3.10	Conform		CTS-01140

Table 9.5.1-2R (Sheet 61 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
	Fire extinguishers shall be located within the new-fuel area, and the following criteria also shall be met: (1) Fire hose stations shall be located as determined by the fire hazards analysis to facilitate access and use for fire-fighting operations. (2) Fire detection systems shall be provided. (3) Combustible material shall be limited to the minimum necessary for operation in the new-fuel area.	10.12.1	Conform		
	The storage configuration of new fuel shall always be maintained as to preclude criticality for any water density that could occur during fire water application.	10.12.2	Conform		
	Protection for the spent-fuel pool area shall be provided by fire hose stations and fire extinguishers.	10.13.1	Conform		
	Fire detection shall be provided in the area.	10.13.2	Conform	Linear Beam Detectors are provided for this large room.	
	Fire barriers, fire detection, and automatic fire suppression shall be provided as determined by the fire hazards analysis.	10.14.1	Conform	See Appendix 9A.	
~~CP~~STD COL 9.5(3)	Manual ventilation control to assist in smoke removal shall be provided if necessary for manual fire fighting.	10.14.2	Conform	See subsection 9.5.1.6. Fire brigade has portable smoke removal equipment.	CTS-01140
	Storage tanks that supply water for fire-safe shutdown shall be protected from the effects of an exposure fire.	10.15.1	Conform		
	Combustible materials shall not be stored next to these tanks.	10.15.2	Conform		
~~CP~~STD COL 9.5(2)	Record storage areas shall be located and protected in accordance with NFPA 232, Standard for the Protection of Records.	10.16.1	Conform		CTS-01140
~~CP~~STD COL 9.5(2)	Record storage areas shall not be located in safety-related areas and shall be separated from safety-related areas by fire barriers having a minimum 3-hour rating.	10.16.2	Conform	Record storage inside plant is protected with 3-hour fire walls. Primary record storage is in office building spatially separated from plant.	CTS-01140

Table 9.5.1-2R (Sheet 62 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	Cooling towers shall be of noncombustible or limited-combustible construction.	10.17.1	Conform	UHS cooling towers of noncombustible construction.	CTS-01140
~~CP~~STD COL 9.5(2)	Cooling towers shall be located such that a fire in the cooling tower will not adversely affect safety-related systems or equipment.	10.17.2	Conform	Cooling towers for the Turbine side are located away from plant. UHS cooling towers are safety-related and of noncombustible construction.	CTS-01140
~~CP~~STD COL 9.5(2)	The following criteria also shall be met: (1) Cooling towers shall be of noncombustible construction when the basin is used as the ultimate heat sink. (2) If cooling towers are of combustible construction, the following criteria shall be met: (a) They shall be protected by automatic sprinklers or water spray systems in accordance with NFPA 214, Standard on Water-Cooling Towers. (b) They shall be located so that they do not affect safety-related systems or equipment in the event of a fire.	10.17.3	Conform		CTS-01140
~~CP~~STD COL 9.5(2)	Gas cylinder storage locations or the fire protection systems that serve those safety-related areas shall not be in areas that contain or expose safety-related equipment.	10.18	Conform		CTS-01140
	Unused ion exchange resins shall not be stored in areas that contain or expose safety-related systems or equipment.	10.19	Conform		
	Hazardous chemicals shall not be stored in areas that contain or expose safety-related systems or equipment.	10.20	Conform		
~~CP~~STD COL 9.5(2)	Automatic sprinkler protection shall be provided for warehouses that contain high-value equipment or combustible materials.	10.21	Conform	Warehouse is sprinkler protected.	CTS-01140
~~CP~~STD COL 9.5(2)	Rooms housing diesel-driven fire pumps shall be protected by automatic sprinkler, water spray, or foam-water sprinkler systems.	10.22.1	Conform	Automatic wet-pipe sprinkler system protection is provided.	CTS-01140

Table 9.5.1-2R (Sheet 63 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	If sprinkler and water spray systems are provided for fire pump houses, they shall be designed for a minimum density of 0.25 gpm/ft^2 (10.19 L/min·m^2) over the entire fire area.	10.22.2	Conform		CTS-01140
CP COL 9.5(1)	Buildings shall be protected from exposure fires involving oil-filled transformers by one of the following means: (1) Locating the transformer casing, conservator tank, and cooling radiators at least 50 ft. from buildings. (2) Providing a minimum 2-hour fire barrier between transformers as required in Figure 10.23.1(a) and Figure 10.23.1(b) and exposed buildings. (3) Complying with Table 10.23.1[See Figure 10.23.1(a) and Figure 10.23.1(b)].	10.23.1	Conform	See Appendix 9A. A 3-hour fire barrier separates the transformers and the turbine building.	
CP COL 9.5(1)	A minimum 1-hour fire barrier or a distance of 30 ft. shall be provided between adjacent transformers.	10.23.1.1	Conform	A one-hour fire barrier is provided between transformers.	
~~CP~~STD COL 9.5(1)	Means shall be provided to contain oil spills.	10.23.1.2	Conform	Spill confinement and oil separation is provided for transformers.	CTS-01140
~~CP~~STD COL 9.5(1)	Oil-filled main, station service, and startup transformers shall be protected with automatic water spray systems in accordance with NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, or foam-water spray systems in accordance with NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems.	10.23.2	Conform	See Appendix 9A. An automatic water spray system following the guidance of NFPA 15 is provided for these transformers.	CTS-01140
	Transformers installed inside fire areas containing safety-related systems or equipment shall be of the dry type or insulated and cooled with noncombustible liquid, unless otherwise specified in 10.23.4.	10.23.3	Conform		
	Transformers filled with combustible fluid that are located indoors shall be enclosed in a transformer vault.	10.23.4	Conform		

Table 9.5.1-2R (Sheet 64 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(2)	Auxiliary boilers, their fuel-burning systems, combustion product removal systems, and related control equipment shall be installed and operated in accordance with NFPA 85, Boiler and Combustion Systems Hazards Code.	10.24.1	Conform	Auxiliary Boiler is in a separate building separated from safety-related structures.	CTS-01140
	Oil-fired boilers or boilers using oil ignition within the main plant shall be protected with automatic sprinkler, water spray, or foam-water sprinkler systems covering the boiler area.	10.24.2	N/A		
	Sprinkler and water spray systems shall be designed for a minimum density of 0.25 gpm/ft^2 (10.19 L/min·m^2) over the entire area.	10.24.3	N/A		
~~CP~~STD COL 9.5(2)	Automatic sprinklers shall be provided for storage rooms, offices, and shops containing combustible materials that present an exposure to surrounding areas that are critical to plant operation and shall be so located and protected that a fire or the effects of a fire, including smoke, will not adversely affect any safety-related systems or equipment.	10.25	Conform		CTS-01140
~~CP~~STD COL 9.5(2)	Simulators shall be provided with a fixed automatic suppression system.	10.26.1	Conform	Simulator is not located in the plant area.	CTS-01140
~~CP~~STD COL 9.5(2)	Simulators and supporting equipment shall be separated from other areas by a fire barrier with a minimum 1-hour rating.	10.26.2	Conform		CTS-01140
	Technical support centers shall be separated from all other areas by fire barriers or from all other buildings by at least 50 ft. and be protected by an automatic fixed suppression system as required by the fire hazards analysis.	10.27	Conform		
~~CP~~STD COL 9.5(2)	Intake structures shall be of noncombustible construction and shall be provided with automatic sprinkler protection.	10.28	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Consideration of fire protection shall include safety to life and potential for delays in construction schedules and plant startup, as well as protection of property.	11.1	Conform		CTS-01140

Table 9.5.1-2R (Sheet 65 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The responsibility for fire protection for the entire site during the construction period shall be defined.	11.2.1	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The administrative responsibilities shall be to develop, implement, and periodically update as necessary the measures outlined in this standard.	11.2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The responsibility for fire protection programs among various organizations onsite shall be delineated.	11.2.3	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The fire protection program to be followed and the owner's right to administration and enforcement shall be established.	11.2.4	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	The fire protection program shall include a fire risk evaluation of the construction site and construction activities.	11.2.5	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Written procedures in accordance with Chapter 5 shall be established for the new construction site, including major construction projects in existing plants.	11.2.6	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	Security guard service, including recorded rounds, shall be provided through all areas of construction during times when construction activity is not in progress.	11.2.7	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Construction schedules shall be coordinated so that the planned permanent fire protection systems are installed and placed in service.	11.2.8	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Construction and installation of fire barriers and fire doors shall be given priority in the construction schedule.	11.2.9	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Prior to clearing forest and brush-covered areas, the following actions shall be taken: (1) The owner shall ensure that a written fire control plan is prepared and that fire-fighting tools and equipment are made available as required by NFPA 1143, Standard for Wildland Fire Management. (2) Contact shall be made with local fire and forest agencies for current data on restrictions and fire potential and to arrange for necessary permits.	11.3.1.1	Conform		CTS-01140

Table 9.5.1-2R (Sheet 66 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	The following shall apply to all construction vehicles and engine-driven portable equipment: (1) They shall be equipped with effective spark arresters. (2) Vehicles equipped with catalytic converters shall be prohibited from wooded and heavily vegetated areas.	11.3.1.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Fire tools and equipment shall be distinctly marked and used for fire emergencies only.	11.3.1.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Each site utility vehicle shall be equipped with at least one fire-fighting tool, portable fire extinguisher, or backpack pump filled with 4 gal to 5 gal (15 L to 19 L) of water.	11.3.1.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Cut trees, brush, and other combustible spoil shall be disposed of.	11.3.1.5	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Where it is necessary to dispose of combustible waste by onsite burning, designated burning areas shall be established with the approval of the owner and shall be in compliance with federal, state, and local regulations and guidelines. The contractor shall coordinate burning with the agencies responsible for monitoring fire danger in the area and shall obtain all appropriate permits prior to the start of work.	11.3.1.6	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	All structures that are to be retained, as part of the completed plant shall be constructed of materials as indicated in Chapter 10 and in accordance with other applicable sections in this standard.	11.4.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Construction warehouses, offices, trailers, sheds, and other facilities for the storage of tools and materials shall be located with consideration of their exposure to major plant buildings or other important structures.	11.4.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	A fire risk evaluation shall be performed.	11.4.3	Conform		CTS-01140

Table 9.5.1-2R (Sheet 67 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Warehouses that contain high-value equipment (as defined by the individual responsible for fire prevention and fire protection) or contents the loss of which or damage to would cause a delay in startup dates of the completed plant shall meet the following criteria: (1) They shall be arranged and protected as indicated in 11.4.4.1 through 11.4.4.4. (2) Although some of these structures are considered to be temporary and will be removed on completion of the plant, the fire and loss potential shall be evaluated and protection provided where warranted.	11.4.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Building construction materials shall be noncombustible or limited-combustible.	11.4.4.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Automatic sprinkler systems shall be designed and installed in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems.	11.4.4.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Waterflow alarms shall be provided and located so as to be monitored at a constantly attended location as determined by the individual responsible for fire protection.	11.4.4.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Air-supported structures shall be used only for the storage of noncombustibles.	11.4.4.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Temporary enclosures, including trailers, inside permanent plant buildings shall be prohibited except where permitted by the individual responsible for fire prevention and fire protection.	11.4.5	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Where the floor area of a combustible enclosure exceeds 100 ft^2 (9.29 m^2) or where the occupancy presents a fire exposure, the enclosure shall be protected with an approved automatic fire suppression system.	11.4.6	Conform		CTS-01140

Table 9.5.1-2R (Sheet 68 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Storage of construction materials, equipment, or supplies that are either combustible or in combustible packaging shall be prohibited in main plant buildings unless either of the following conditions exists: (1) An approved automatic fire suppression system is in service in the storage area. (2) Loss of the materials or loss to the surrounding plant area would be minimal, as determined by the individual responsible for fire prevention and fire protection.	11.4.7	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Construction areas that comprise mobile buildings arranged with the buildings adjoining each other to form one large fire area shall be avoided.	11.4.8	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	If buildings cannot be separated, fire walls shall be installed between units or automatic sprinklers shall be provided throughout the buildings.	11.4.9	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Fire alarms shall be connected to a constantly attended central location.	11.4.10	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The handling, storage, and dispensing of flammable liquids and gases shall meet the requirements of NFPA 30, Flammable and Combustible Liquids Code, and NFPA 58, Liquefied Petroleum Gas Code.	11.4.11	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Vehicle repair facilities shall meet the requirements of NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages.	11.4.12	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Fire hydrant systems with an approved water supply shall be provided in lay-down areas where the need is determined by the individual responsible for fire prevention and fire protection.	11.5.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Combustible materials shall be separated by a clear space to allow access for manual fire-fighting equipment.	11.5.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Access shall be provided and maintained to all fire-fighting equipment, including fire hoses, extinguishers, and hydrants.	11.5.3	Conform		CTS-01140

Table 9.5.1-2R (Sheet 69 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Noncombustible or fire-retardant scaffolds, formwork, decking, and partitions shall be used both inside and outside permanent buildings where a fire could cause substantial damage or delay construction schedules.	11.6.1	Conform	.	CTS-01140
~~CP~~STD COL 9.5(1)	The use of listed pressure-impregnated fire-retardant lumber or listed fire-retardant coatings shall be provided.	11.6.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Tarpaulins (fabrics) and plastic films shall be certified to conform to the weather-resistant and fire-retardant materials described in NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.	11.6.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Where it is necessary to store new nuclear fuel in areas other than the permanent storage facilities, a written procedure shall be developed to address separation from the following: (1) Combustible materials. (2) Security. (3) Nuclear criticality. (4) Packing material. (5) Noncombustible or limited-combustible building materials. (6) Standpipe. (7) Portable fire extinguishers. (8) Hydrant protection.	11.6.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The permanent underground yard system, fire hydrants, and water supply (at least one water source), as indicated in Chapter 10, shall be installed during the early stages of construction.	11.7.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Where provision of all or part of the permanent underground system and water supply is not practical, temporary systems shall be provided.	11.7.1.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Temporary water supplies shall be hydrostatically tested, flushed, and arranged to maintain a high degree of reliability, including protection from freezing and loss of power.	11.7.1.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Hydrants shall be installed as specified in 11.7.2.1 and 11.7.2.2.	11.7.2	Conform		CTS-01140

Table 9.5.1-2R (Sheet 70 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Hydrants shall be installed in the vicinity of main plant buildings, important warehouses, office or storage trailer complexes, and outside structures with combustible construction or combustible concrete formwork (e.g., cooling towers).	11.7.2.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The underground main shall be arranged to minimize the possibility that any one break will remove from service any fixed water extinguishing system or leave any area without accessible hydrant protection.	11.7.2.2	Conform	See Subsection 9.5.1.6.	CTS-01140
~~CP~~STD COL 9.5(1)	A fire protection water supply shall be provided on the construction site and shall be capable of furnishing the larger of the following for a minimum 2-hour duration: (1) 500 gpm (1892.5 L/min). (2) The in-service fixed water extinguishing system with the highest water demand and 500 gpm (1892.5 L/min) for hose streams.	11.7.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The highest water demand shall be determined by the hazards present at the stage of construction, which might not correspond with the highest water demand of the completed plant.	11.7.3.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	As fixed water extinguishing systems are completed, they shall be placed in service, even when the available construction phase fire protection water supply is not able to meet the designed system demand, and the following criteria shall be met: (1) When the permanent hazard is introduced, the water supply shall be capable of providing the designed system demand. (2) Where construction water is used in permanent systems, adequate strainers shall be provided to prevent clogging of the system by foreign objects and dirt.	11.7.3.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	The water supply shall provide the required pressure for hose connections at the highest elevation.	11.7.3.3	Conform		CTS-01140

Table 9.5.1-2R (Sheet 71 of 71)
CPNPP Units 3 & 4 Fire Protection Program Conformance with NFPA 804

	Standard Requirement	Paragraph	Conformance	Remarks	
~~CP~~STD COL 9.5(1)	Fire-fighting equipment shall be provided in accordance with NFPA 600, Standard on Industrial Fire Brigades, and NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.	11.8.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Portable fire extinguishers of the required capacity shall be provided in accordance with NFPA 10, Standard for Portable Fire Extinguishers, where one or more of the following conditions exist: (1) Flammable liquids are stored or handled. (2) Combustible materials are stored. (3) Temporary oil- or gas-fired equipment is used. (4) A tar or asphalt kettle is used. (5) Welding or open flames are in use.	11.8.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	A standpipe system shall be provided in any permanent building that has walls erected that are equivalent to two floors in height.	11.8.3	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Additional standpipe hose connections shall be added to each floor level as soon as sufficient landings are available to fight fires from that level.	11.8.3.1	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Protection from freezing shall be provided.	11.8.3.2	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	Hoses and nozzles shall be available at strategic locations, such as inside hose cabinets or hose houses or on dedicated fire response vehicles.	11.8.4	Conform		CTS-01140
~~CP~~STD COL 9.5(1)	If fire hose connections are not compatible with local fire-fighting equipment, adapters shall be made available.	11.8.5	Conform		CTS-01140

APPENDIX 9AFIRE HAZARD ANALYSIS

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

9A.1 INTRODUCTION

CP COL 9.5(2) Add the following information after the first paragraph in DCD Subsection 9A.1.

This fire hazard analysis (FHA) is performed on the basis of one unit. The fire zones and arrangement of CPNPP Units 3 and 4 are identical. When unit specificity is required, the fire area and fire zone designation if prefixed with a "3" or "4" numeral. For example, Fire Zone "FA1-101-01" within the FHA is designated as "3-FA1-101-01" for Unit 3, and as "4-FA1-101-01" for Unit 4.

9A.3 FIRE HAZARD ANALYSIS RESULTS

~~CP~~STD COL 9.5(2) Add the following information after second paragraph in DCD Subsection 9A.3. CTS-01140

The FHA is also conducted for the following site-specific plant structures and associated fire area and/or fire zones which are depicted in Figures 9A-201 and 9A-202.

- Essential Service Water (ESW) Pumping Station
- Ultimate Heat Sink (UHS)
- Transformer Yard
- Plant Support Buildings

Plant buildings are located such that unacceptable exposure to environmental impact such as wildfires does not occur. Structures are located such that non-safety related structures do not pose unacceptable exposure to safety-related structures. For a fire zone by fire zone review, Table 9A-202 identifies the type and quantity of combustible materials in each fire zone of the site-specific plant structures and provides a summary of the FHA for the associated fire zone. The discussion below reviews the fire hazards for each fire area on an area by area basis. Table 9A-203 shows the fire zone to fire zone interface which also depicts fire area to fire area boundaries that must be protected for 3-hour fire rated boundaries.

CP COL 9.5(2) Add the following new subsections after DCD Subsection 9A.3.100.

CP COL 9.5(2)

9A.3.101 FA7-201 A-ESW Pump Room

CTS-01140

The A-ESW pump room is shown on Figure 9A-201. The room contains the train A ESW pump, circuits, and controls. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. The door and all openings or penetrations into this room are protected with 3-hour fire resistive seals or components. The combustible material associated with the ESW pump installation is lube oil and electrical cables.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression in accordance with RG 1.189 Positions 3.1.1.k and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

CTS-01140

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train A ESW system. The electrical circuits from other safety trains in this area will be protected by a one-hour fire rated wrap. As such, a fire in this area could only adversely impact the safety train A safe-shutdown functions. The fire would be confined to this area, by fire rated barriers and/or by physical separation. Therefore, equipment within safety trains B, C, and D would remain free of fire damage and able to obtain and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

The ESW pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.102 FA7-202 A-UHS Transfer Pump Room

CTS-01140

The A-UHS transfer pump room is shown on Figure 9A-201. The room contains an UHS transfer pump capable of transferring water from the A-cooling tower basin. Its circuits and controls are powered by either the D Class 1E bus. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. The door and all openings or penetrations into this room are protected with 3-hour fire resistive seals or components. The combustible material associated with the UHS transfer pump installation is lube oil and electrical cables.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression in accordance with RG 1.189 Positions 3.1.1.k and 6.1.9. This will assure that any fire damage occurring within this room is minimized in damage and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

CTS-01140

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

CP COL 9.5(2)

Safe Shutdown Evaluation

CTS-01140

The electrical circuits located within this area are associated with the safety train C or D depending on the manual breaker alignment. The transfer pump circuits are protected from a fire in the adjacent ESW pump room to assure the transfer pump can perform its safe-shutdown function for a fire in the train A ESW pump room. As such, a fire in this area could only adversely impact the transfer pump functions from the A-cooling tower basin. The fire would be confined to this area by the 3-hour fire rated walls. Therefore, equipment within safety trains A, B, C, or D would remain free of fire damage and able to obtain and maintain safe-shutdown.

STD COL 9.5(2) Radioactive Release to Environment Evaluation CTS-01140

The UHS transfer pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.103 FA7-203 A-UHS

CTS-01140

The A-UHS is shown on Figure 9A-201. A-UHS is a two-fan unit non-combustible constructed cooling tower that serves as the environmental heat sink for safety-related cooling loads served by safety train A ESW system. The unit has two redundant air circulating fans and is constructed chiefly of reinforced concrete.

Fire Detection and Suppression Features

The principal fire protection feature of the UHS cooling tower safety train A is that it is constructed on non-combustible construction. A-UHS is fully separated from the adjacent B-UHS by a 3-hour fire rated wall of reinforced concrete. Since the combustible materials associated with the cooling tower structure are minimal and a fire would be confined to this specific safety train, no automatic fire detection or suppression feature are provided.

STD COL 9.5(2) Smoke Control Features CTS-01140

The cooling tower structure is an outside component and any smoke from a fire such as associated with a fan motor would be freely released to the surrounding plant environment and not constitute an impediment to fire brigade response.

Fire Protection Adequacy Evaluation

Based on the minimal combustible material and the confinement of any fire that could occur to the location of occurrence, fire protection provided by the noncombustible construction is deemed adequate.

Fire Protection System Integrity

Fire protection of the cooling tower is inherent in its non-combustible design. Therefore, the cooling tower structure does not require automatic or manual fire suppression systems. The fire protection system integrity for this area is assured by the significant fire protection provided by the cooling tower's concrete structure, which provides fire separation.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train A ESW system and the associated ESW cooling for the train A CCW safe-shutdown cooling functions. As such, a fire in this are could adversely impact safety train A safe-shutdown functions. Since the fire would be confined to this area, equipment within safety trains B, C, and D would remain free of fire damage and able to obtain safe-shutdown.

Radioactive Release to Environment Evaluation

The A-UHS is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the cooling tower structure is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.104 FA7-204 B-ESW Pump Room

CTS-01140

The B-ESW pump room is shown on Figure 9A-201. The room contains the train B ESW pump, circuits, and controls. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. The door and all openings or penetrations into this room are protected with 3-hour fire resistive seals or components. The combustible material associated with the ESW pump installation is lube oil and electrical cables.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression in accordance with RG 1.189 Positions 3.1.1.k and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2) Smoke Control Features CTS-01140

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train B ESW system. The electrical circuits from other safety trains in this area will be protected by a one-hour fire rated wrap. As such, a fire in this area could only adversely impact safety train B safe-shutdown functions. The fire would be confined to this area, by fire rated barriers and/or by physical separation. Therefore, equipment within safety trains A, C and D would remain free of fire damage and able to obtain and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

The ESW pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.105 FA7-205 B-UHS Transfer Pump Room

CTS-01140

The B-UHS transfer pump room is shown on Figure 9A-201. The room contains an UHS transfer pump capable of transferring water from the B-cooling tower basin. Its circuits and controls are powered by either the D Class 1E bus. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. The door and all openings or penetrations into this room are protected with 3-hour fire resistive seals or components. The combustible material associated with the UHS transfer pump installation is lube oil and electrical cables.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression in accordance with RG 1.189 Positions 3.1.1.k and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

CTS-01140

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

CP COL 9.5(2) Safe Shutdown Evaluation CTS-01140

The electrical circuits located within this area are associated with the safety train C or D depending on the manual breaker alignment. The transfer pump circuits are protected from a fire in the adjacent ESW pump room to assure the transfer pump can perform its safe-shutdown function for a fire in the train B ESW pump room. As such, a fire in this area could only adversely impact the transfer pump functions from the B-cooling tower basin. The fire would be confined to this area by the 3-hour fire rated walls. Therefore, equipment within safety trains A, B, C, or D would remain free of fire damage and able to obtain and maintain safe-shutdown.

STD COL 9.5(2) Radioactive Release to Environment Evaluation CTS-01140

The UHS transfer pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

CP COL 9.5(2) **9A.3.106 FA7-206 B-UHS** CTS-01140

The B-UHS is shown on Figure 9A-201. B-UHS is a two-fan unit non-combustible constructed cooling tower that serves as the environmental heat sink for safety-related cooling loads served by safety train B ESW system. The unit has two redundant air circulating fans and is constructed chiefly of reinforced concrete.

Fire Detection and Suppression Features

The principal fire protection feature of the UHS cooling tower safety train B is that it is constructed on non-combustible construction. B-UHS is fully separated from the adjacent A-UHS by a 3-hour fire rated wall of reinforced concrete. Since the combustible materials associated with the cooling tower structure are minimal and a fire would be confined to this specific safety train, no automatic fire detection or suppression feature are provided.

STD COL 9.5(2) Smoke Control Features CTS-01140

The cooling tower structure is an outside component and any smoke from a fire such as associated with a fan motor would be freely released to the surrounding plant environment and not constitute an impediment to fire brigade response.

Fire Protection Adequacy Evaluation

Based on the minimal combustible material and the confinement of any fire that could occur to the location of occurrence, fire protection provided by the noncombustible construction is deemed adequate.

Fire Protection System Integrity

Fire protection of the cooling tower is inherent in its non-combustible design. Therefore, the cooling tower structure does not require automatic or manual fire suppression systems. The fire protection system integrity for this area is assured by the significant fire protection provided by the cooling tower's concrete structure, which provides fire separation.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train B ESW system and the associated ESW cooling for the train B CCW safe-shutdown cooling functions. As such, a fire in this are could adversely impact safety train B safe-shutdown functions. Since the fire would be confined to this area, equipment within safety trains A, C, and D would remain free of fire damage and able to obtain safe-shutdown.

Radioactive Release to Environment Evaluation

The B-UHS is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the cooling tower structure is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.107 FA7-207 C-ESW Pump Room CTS-01140

The C-ESW pump room is shown on Figure 9A-201. The room contains the train C ESW pump, circuits, and controls. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. The door and all openings or penetrations into this room are protected with 3-hour fire resistive seals or components. The combustible material associated with the ESW pump installation is lube oil and electrical cables.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression in accordance with RG 1.189 Positions 3.1.1.k and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2) Smoke Control Features CTS-01140

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train C-ESW system. The electrical circuits from other safety trains in this area will be protected by a one-hour fire rated wrap. As such, a fire in this area could only adversely impact the safety train C safe-shutdown functions. The fire would be confined to this area, by fire rated barriers and/or by physical separation. Therefore, equipment within safety trains A, B, and D would remain free of fire damage and able to obtain and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

The ESW pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.108 FA7-208 C-UHS Transfer Pump Room

CTS-01140

The C-UHS transfer pump room is shown on Figure 9A-201. The room contains an UHS transfer pump capable of transferring water from the C-cooling tower basin. Its circuits and controls are powered by either the A Class 1E bus. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. The door and all openings or penetrations into this room are protected with 3-

hour fire resistive seals or components. The combustible material associated with the UHS transfer pump installation is lube oil and electrical cables.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression in accordance with RG 1.189 Positions 3.1.1.k and 6.1.9. This will assure that any fire damage occurring within this room is minimized in damage and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2) Smoke Control Features CTS-01140

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

CP COL 9.5(2) Safe Shutdown Evaluation CTS-01140

The electrical circuits located within this area are associated with the safety train A or B depending on the manual breaker alignment. The transfer pump circuits are protected from a fire in the adjacent ESW pump room to assure the transfer pump can perform its safe-shutdown function for a fire in the train C ESW pump room. As such, a fire in this area could only adversely impact the transfer pump functions from the C-cooling tower basin. The fire would be confined to this area by the 3-hour fire rated walls. Therefore, equipment within safety trains C, D, A, or B would remain free of fire damage and able to obtain and maintain safe-shutdown.

STD COL 9.5(2) Radioactive Release to Environment Evaluation CTS-01140

The UHS transfer pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.109 FA7-209 C-UHS

CTS-01140

STD COL 9.5(2)

The C-UHS is shown on Figure 9A-201. C-UHS is a two-fan unit non-combustible constructed cooling tower that serves as the environmental heat sink for safety-related cooling loads served by safety train C ESW system. The unit has two redundant air circulating fans and is constructed chiefly of reinforced concrete.

Fire Detection and Suppression Features

The principal fire protection feature of the UHS cooling tower safety train C is that it is constructed on non-combustible construction. C-UHS is fully separated from the adjacent D-UHS by a 3-hour fire rated wall of reinforced concrete. Since the combustible materials associated with the cooling tower structure are minimal and a fire would be confined to this specific safety train, no automatic fire detection or suppression feature are provided.

Smoke Control Features

The cooling tower structure is an outside component and any smoke from a fire such as associated with a fan motor would be freely released to the surrounding plant environment and not constitute an impediment to fire brigade response.

Fire Protection Adequacy Evaluation

Based on the minimal combustible material and the confinement of any fire that could occur to the location of occurrence, fire protection provided by the noncombustible construction is deemed adequate.

Fire Protection System Integrity

Fire protection of the cooling tower is inherent in its non-combustible design. Therefore, the cooling tower structure does not require automatic or manual fire suppression systems. The fire protection system integrity for this area is assured by the significant fire protection provided by the cooling tower’s concrete structure, which provides fire separation.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train C ESW system and the associated ESW cooling for the train C CCW safe-shutdown cooling functions. As such, a fire in this are could adversely impact safety train C safe-shutdown functions. Since the fire would be confined to this area, equipment within safety trains A, B, and D would remain free of fire damage and able to obtain safe-shutdown.

Radioactive Release to Environment Evaluation

The C-UHS is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the cooling tower structure is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.110 FA7-210 D-ESW Pump Room

CTS-01140

The D-ESW pump room is shown on Figure 9A-201. The room contains the train D ESW pump, circuits, and controls. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. The door and all openings or penetrations into this room are protected with 3-hour fire resistive seals or components. The combustible material associated with the ESW pump installation is lube oil and electrical cables.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression in accordance with RG 1.189 Positions 3.1.1.k and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2) Smoke Control Features CTS-01140

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train D ESW system. The electrical circuits from other safety trains in this area will be protected by a one-hour fire rated wrap. As such, a fire in this area could only adversely impact the safety train D safe-shutdown functions. The fire would be confined to this area, by fire rated barriers and/or by physical separation.

Therefore, equipment within safety trains A, B and C would remain free of fire damage and able to obtain and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

The ESW pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.111 FA7-211 D-UHS Transfer Pump Room

CTS-01140

The D-UHS transfer pump room is shown on Figure 9A-201. The room contains an UHS transfer pump capable of transferring water from the D-cooling tower basin. Its circuits and controls are powered by either the A Class 1E bus. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. The door and all openings or penetrations into this room are protected with 3-hour fire resistive seals or components. The combustible material associated with the UHS transfer pump installation is lube oil and electrical cables.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression in accordance with RG 1.189 Positions 3.1.1.k and 6.1.9. This will assure that any fire damage occurring within this room is minimized in damage and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

CTS-01140

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

CP COL 9.5(2) Safe Shutdown Evaluation CTS-01140

The electrical circuits located within this area are associated with the safety train A or B depending on the manual breaker alignment. The transfer pump circuits are protected from a fire in the adjacent ESW pump room to assure the transfer pump can perform its safe-shutdown function for a fire in the train D ESW pump room. As such, a fire in this area could only adversely impact the transfer pump functions from the D-cooling tower basin. Since the fire would be confined to this area by the 3-hour fire rated walls. Therefore, equipment within safety trains C, D, A, or B would remain free of fire damage and able to obtain and maintain safe-shutdown.

STD COL 9.5(2) Radioactive Release to Environment Evaluation CTS-01140

The UHS transfer pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

CP COL 9.5(2) **9A.3.112 FA7-212 D-UHS** CTS-01140

STD COL 9.5(2) The D-UHS is shown on Figure 9A-201. D-UHS is a two-fan unit non-combustible constructed cooling tower that serves as the environmental heat sink for safety-related cooling loads served by safety train D ESW system. The unit has two redundant air circulating fans and is constructed chiefly of reinforced concrete.

Fire Detection and Suppression Features

The principal fire protection feature of the UHS cooling tower safety train D is that it is constructed on non-combustible construction. D-UHS is fully separated from the adjacent C-UHS by a 3-hour fire rated wall of reinforced concrete. Since the combustible materials associated with the cooling tower structure are minimal and a fire would be confined to this specific safety train, no automatic fire detection or suppression feature are provided.

Smoke Control Features

The cooling tower structure is an outside component and any smoke from a fire such as associated with a fan motor would be freely released to the surrounding plant environment and not constitute an impediment to fire brigade response.

Fire Protection Adequacy Evaluation

Based on the minimal combustible material and the confinement of any fire that could occur to place of occurrence, fire protection provided by the non-combustible construction is deemed adequate.

Fire Protection System Integrity

Fire protection of the cooling tower is inherent in its non-combustible design. Therefore, the cooling tower structure does not require automatic or manual fire suppression systems. The fire protection system integrity for this area is assured by the significant fire protection provided by the cooling tower's concrete structure, which provides fire separation.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train D ESW system and the associated ESW cooling for the train D CCW safe-shutdown cooling functions. As such, a fire in this are could adversely impact safety train D safe-shutdown functions. Since the fire would be confined to this area, equipment within safety trains A, B, and C would remain free of fire damage and able to obtain safe-shutdown.

Radioactive Release to Environment Evaluation

The D-UHS is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the cooling tower structure is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.113 FA7-301 Transformer Yard

CTS-01140

The transformer yard is shown in Figure 9A-202. The area is located on the south end of each unit's turbine building. Due to the significant plant impact of a transformer fire, the transformer yard is designated as fire area FA7-301. The fire zones in FA7-301 are presented in Table 9A-201.

The transformer yard is located closer than 50 ft. to the turbine building and the 345kV GIS Building for the RATs due to site space restrictions. To compensate for the close spacing, a freestanding 3-hour fire rated barrier separates the transformer yard from the turbine building. A one-hour fire rated barrier separates each transformer from any adjacent transformer. The separation features meet RG 1.189, NFPA 804, and nuclear property insurer's requirements.

STD COL 9.5(2) Provision for drainage and oil spill containment is in accordance with NFPA 804, and IEEE 980. CTS-01140

Fire Detection and Suppression Features

Each transformer is provided with an automatic fire detection system (heat detectors) which alarms to the plant fire alarm system and actuates an automatic water spray system installed in accordance with NFPA 15 (Reference 9.5.1-22) requirements.

Smoke Control Features

The transformers are outside components and any smoke from a fire such as associated with a transformer fluid fire would be freely released to the surrounding plant environment and not constitute an impediment to fire brigade response.

Fire Protection Adequacy Evaluation

The fire protection features installed for the transformer yard, fire walls, automatic fire detection and water spray systems, meet industry accepted practices, NFPA code guidance, NRC guidance, and nuclear plant property insurer's recommendations. On this basis, the fire protection features are considered adequate for the fire hazard present.

Fire Protection System Integrity

The firewalls for the transformer yard are freestanding walls designed for wind resistance and seismic occurrences. The fire protection systems are designed, installed, and tested in accordance with NFPA codes and standards under a nuclear quality assurance program. This assures a high degree of fire protection system integrity required for an operating nuclear power plant.

Safe Shutdown Evaluation

A fire involving one of the transformer yard's units would likely necessitate plant shutdown. The yard is located away from safety-related systems, components, and structures and would not spread to impact such features due to the firewalls, automatic fire detection and suppression systems provided. Since none of the four safety trains of equipment provided to assure plant shutdown would be affected, no adverse impact of safe-shutdown would result from a fire in the transformer yard.

Radioactive Release to Environment Evaluation

The transformer yard is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the transformer yard is not deemed capable of producing a radioactive release.

CP COL 9.5(2)

9A.3.114 Miscellaneous Plant Support Structures

CTS-01140

The CPNPP Units 3 and 4 design features a number of miscellaneous plant support structures such as the office building, security structures, warehouse, fire pump house, makeup pumping station, circulating water system cooling towers, maintenance and storage building, auxiliary boiler building, etc. These structures do not contain any equipment that performs a safety-related function. The structures are located on the CPNPP Units 3 and 4 site such that they do not represent an unacceptable fire exposure to any safety-related structure, system, or component.

STD COL 9.5(2)

Fire Detection and Suppression Features

CTS-01140

Fire detection and suppression system features vary for the miscellaneous plant support structures according to their importance to personnel safety, continued operation, and the influence of applicable NFPA codes and standards, building code requirements, and nuclear plant property insurer's requirements or recommendations.

Smoke Control Features

Smoke control features are provided for the miscellaneous plant support structures according to building code requirements and personnel safety concerns. Additional smoke removal in these structures can be provided by portable fans units and ducting by the plant fire brigade of standard firefighting practices.

Fire Protection Adequacy Evaluation

Based on the compliance with accepted industry practices, the fire protection features provided for the miscellaneous CPNPP Units 3 and 4 structures are deemed adequate for the fire hazards present.

Fire Protection System Integrity

Fire protection systems provided for the miscellaneous plant structures are designed, installed, tested, and maintained in accordance with applicable NFPA codes and standards. This assures a high degree of system integrity.

CP COL 9.5(2) Safe Shutdown Evaluation CTS-01140

The miscellaneous CPNPP Units 3 and 4 structures do not contain any safety-related or safe-shutdown features. The structures are located such that they do not pose an unacceptable fire exposure to any safety-related or safe-shutdown structure, system, or component. As such, a fire in any of the miscellaneous CPNPP Units 3 and 4 support structure will not compromise the ability to obtain safe plant shutdown.

Radioactive Release to Environment Evaluation

The miscellaneous CPNPP Units 3 and 4 support structures are non-radiological areas with no piping system containing radioactive material and no other radioactive material located within the areas. As such, any fire that could occur within one of the site support structures is not deemed capable of producing a radioactive release."

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
RCOL2_10.02.03-2	10.2.3.5	10.2-1	Response to RAI No. 169 Luminant Letter no.TXNB-10056 Date 8/9/2010	Added a statement to clarify the consistency of turbine inservice inspection procedure between DCD and COLA FSAR.	-
RCOL2-12.03-12.04-11	10.4.8.2.1	10.4-7	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Added the piping information of the SG blowdown discharge line in response to RG 4.21.	-
CTS-01140	10.4.8.2.1 10.4.8.2.3 10.4.8.5 10.4.12	10.4-6 10.4-7 [10.4-8] 10.4-8 [10.4-9] 10.4-9 [10.4-10]	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

10.4.7.7 Water Hammer Prevention

STD COL 10.4(6) Replace the first sentence of 6th paragraph in DCD Subsection 10.4.7.7 with the following.

The operating and maintenance procedures regarding water hammer are included in system operating procedures in Subsection 13.5.2.1. A milestone schedule for implementation of the procedures is also included in Subsection 13.5.2.1.

10.4.8.1.2 Non-safety Power Generation Design Bases

CP COL 10.4(2) Add the following text before the first paragraph in DCD Subsection 10.4.8.1.2.

Throughout this subsection 10.4.8, “waste water system (WWS)" described in DCD 10.4.8 is replaced with "existing waste water management Pond C".

CP COL 10.4(2) Add the following text after the last bullet in DCD Subsection 10.4.8.1.2.

- Discharge secondary side water (after cooling) to existing waste water management Pond C or LWMS during plant start up and abnormal chemistry conditions.
- Monitor the concentration of radioactive material in the cooled blowdown water with startup SG blowdown heat exchanger downstream radiation monitor downstream of startup blowdown heat exchanger.

10.4.8.2.1 General Description

~~CP~~STD COL 10.4(2) Replace the first and second paragraph in DCD Subsection 10.4.8.2.1 with the following. CTS-01140

The steam generator blowdown system (SGBDS) flow diagrams are shown in Figures 10.4.8-1R, 10.4.8-2R, and 10.4.8-201. Classification of equipment and components in the SGBDS is provided in Subsection 3.2.

The SGBDS equipment and piping are located in the containment, the reactor building, the auxiliary building, the turbine building(T/B), and outdoors.

~~CP~~STD COL 10.4(2) Add the following text after the third paragraph in DCD Subsection 10.4.8.2.1. CTS-01140

Tanks (CST). This portion of the piping is in the same concrete trench as the condensate transfer piping to the CST. The concrete trench is sloped and has an epoxy coating to facilitate drainage. This design eliminates liquid accumulation in the trench and thus minimizes unintended release. Using single-wall carbon steel pipe in the trench facilitates additional radial cooling of the fluid and enables the use of High Density Polyethylene (HDPE) piping for underground burial; RCOL2_12.03-12.04-11

5. From the transition manhole, the discharge piping is connected to a buried double-walled HDPE piping to an existing waste water management Pond C for discharge. A transition manhole is constructed near the plant pavement boundary. HDPE pipe has the property of good corrosion resistance in the soil environment;

6. The trench and the double-walled HDPE piping are both sloped towards the nearby manhole so that leakage can be collected at the manholes. This approach also facilitates the determination of the segment of pipe that is leaking. Analysis of samples of the liquid collected in the manholes can also differentiate whether the leakage is rain water, groundwater or condensate.

Additional manholes are provided for testing and inspection for the buried piping. Each manhole is equipped with drain collection basins and leak detection instruments. This design approach minimizes unintended releases and provides accessibility to facilitate periodic hydrostatic or pressure testing and visual inspection to maintain pipe integrity. This design feature is in compliance with the guidance of RG 4.21, provided in Subsection 12.3.1.3.1. A radiation monitor located downstream of the startup SG blowdown heat exchanger measures radioactive level in the blowdown water. When an abnormally high radiation level is detected, the blowdown lines are isolated and the blowdown water included in the SGBDS is transferred to waste holdup tank in the LWMS. 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~~will be developed during the detail design phase~~. RCOL2_11.05-2

With abnormal water chemistry, the flow of blowdown rate up to approximately 3 % of MSR at rated power is directed to the existing waste water management pond C via the startup SG blowdown flash tank for processing. In this mode, flashed vapor from the startup SG blowdown flash tank flows to the deaerator.

During normal operation, blowdown rate is approximately 0.5 to 1 % of MSR at rated power. At the 1% of MSR at rated power blowdown rate, both cooling trains are used.

~~CP~~STD COL 10.4(2)

Add the following text after last bullet of the seventeenth paragraph in DCD Subsection 10.4.8.2.1. CTS-01140

- High radiation signal from startup SG blowdown water radiation monitor

- High water level in the startup SG blowdown flash tank
- High pressure in the startup SG blowdown flash tank

10.4.8.2.2.4 Steam Generator Drain

CP COL 10.4(5) Replace the first paragraph in DCD Subsections 10.4.8.2.2.4 with the following.

Pressurized nitrogen is used to send secondary side water in the steam generators under pressure to the existing waste water management Pond C or the condenser. An approximate 20 psig pressure is maintained. This pressure facilitates draining steam generators without using a pump. If the SG drain temperature exceeds the operating temperature limit of the existing waste water management Pond C prior to discharging to this Pond C, the SG drain is cooled in the Startup SG blowdown Heat Exchanger.

10.4.8.2.3 Component Description

~~CP~~STD COL 10.4(2) Replace the first sentence of first paragraph in DCD Subsections 10.4.8.2.3 with the following. CTS-01140

Component design parameters are provided in Table 10.4.8-1R.

CP COL 10.4(2) Add the following text after the last paragraph in DCD Subsection 10.4.8.2.3.

(9)Startup SG blowdown flash tank

The startup SG blowdown flash tank is located outdoors. During plant startup operation and abnormal secondary water chemistry conditions, up to 3 % MSR at rated power conditions, blowdown fluid is separated into flashing vapor and saturated liquid in this tank by lowering the pressure and temperature in the tank.

(10)Startup SG blowdown heat exchanger

The startup SG blowdown heat exchanger is located outdoors. One 100 % capacity heat exchanger for the SG blowdown water flow rate and temperature conditions at 3% of MSR at rated power is provided. The SG blowdown water from the startup SG blowdown flash tank or SG drain is cooled in this heat exchanger by the CWS not to exceed permissible temperature of waste water management Pond C.

10.4.8.5 Instrumentation Applications

~~CP~~STD COL 10.4(2) Add the following after the last paragraph in DCD Subsection 10.4.8.5. CTS-01140

High pressure and high water level in the startup SG blowdown flash tank closes the upstream flow control valve.

The startup SG blowdown heat exchanger downstream radiation monitor, located in the piping downstream of the startup SG blowdown heat exchanger, detects the presence of radioactivity in the SGBDS. Upon detection of the significant levels of radioactivity, the blowdown water is diverted to the LWMS.

A high radiation signal of the startup SG blowdown heat exchanger downstream radiation monitor closes the SGBDS isolation valves.

10.4.9.2.2 System Operation

STD COL 10.4(6) Replace the first sentence of last paragraph in DCD Subsection 10.4.9.2.2 with the following.

The operating and maintenance procedures regarding water hammer are included in system operating procedures in Subsection 13.5.2.1. A milestone schedule for implementation of the procedures is also included in Subsection 13.5.2.1.

10.4.12 Combined License Information

Replace the content of the DCD Subsection 10.4.12 with the following.

CP COL 10.4(1) ***10.4(1)*** *Circulated Water System*

This COL item is addressed in Subsection10.4.5, Table 10.4.5-1R, Figure 10.4.5-1R and Figure 10.4.5-201.

CP COL 10.4(2) STD COL 10.4(2) ***10.4(2)*** *Steam Generator Blowdown System* CTS-01140

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_11.0 2-9	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_11.0 5-2	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_11.0 5-2	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
CTS-01105	11.3.3.1	11.3-2 [11.3-3]	Access change to SCR	Revised text to include a discussion of the doses to the maximally exposed individual at Squaw Creek Reservoir and clarify requirements.	3
CTS-01105	Table 11.3-8R	11.3-4 [11.3-5] [11.3-6]	Access change to SCR	Revised table to include the input parameters for the GASPAR II Code for SCR.	3
CTS-01105	Table 11.3-9R	11.3-5 11.3-6 [11.3-7] [11.3-8]	Access change to SCR	Revised table to update doses for SCR access.	3
CTS-01105	Table 11.3-203	11.3-9 [11.3-12] [11.3-13]	Access change to SCR	Revised table to include the input parameters for dose calculation from the evaporation pond for SCR.	3
CTS-01105	Table 11.3-204	11.3-10 [11.3-14]	Access change to SCR	Revised table to update doses for SCR access.	3
CTS-01105	Table 11.3-205	11.3-11 [11.3-16]	Access change to SCR	Revised table to update doses for SCR access.	3

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-01105	Table 11.3-206	11.3-11 [11.3-18]	Access change to SCR	Created new table to reflect the total gaseous doses to the maximally exposed individual at SCR.	3
RCOL2-12.03-12.04-11	11.2.2	11.2-2	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Replaced "the bypass valve" with "the piping and the valves inside the buildings."	-
RCOL2-12.03-12.04-11	11.2.3.4	11.2-8	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Revised the information of the LWMS effluent release piping to show compliance with RG 4.21.	-
CTS-01140	11.2.1.6 11.2.4 11.3.7 Figure 11.3-201 11.4.1.3 11.4.1.6 11.4.2.1.1 11.4.3.2 11.4.4.5 11.4.8 Figure 11.4-201 11.5.2.7 11.5.2.8 11.5.2.9 11.5.2.10 11.5.2.11 11.5.5	11.2-1 11.2-10 [11.2-11] 11.3-3 11.3-12 Through 11.3-14 11.4-1 11.4-2 11.4-4 11.4-5 11.4-6 11.5-2 11.5-3 11.5-4	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

11.2 LIQUID WASTE MANAGEMENT SYSTEM

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

11.2.1.5 Site-Specific Cost-Benefit Analysis

CP COL 11.2(5) Replace the third paragraph in DCD Subsection 11.2.1.5 with the following.

A site-specific cost benefit analysis using the guidance of regulatory guide (RG) 1.110 was performed based on the site-specific calculated radiation doses as a result of radioactive liquid effluents during normal operations, including anticipated operational occurrences (AOOs). The result of the dose analysis indicated a public exposure of less than 1 person-rem per year resulting from the discharge of radioactive effluents, effecting a dose cost of less than $1000 per year, in 1975 dollars. Based on a population dose results of 2.14 person-rem per year (Total Body), 2.04 person-rem per year (Thyroid) and the equipment and operating costs as presented in RG 1.110, the cost benefit analysis demonstrates that addition of processing equipment of reasonable treatment technology is not favorable or cost beneficial, and that the design provided herein complies with Title 10, Code of Federal Regulations (CFR), Part 50, Appendix I.

11.2.1.6 Mobile or Temporary Equipment

~~CP~~STD COL 11.2(1) Replace the last sentence in the paragraph in DCD Subsection 11.2.1.6. CTS-01140

Process piping connections have connectors different from the utility connectors to prevent cross-connection and contamination. The use of mobile or temporary equipment will require ~~Luminant to address~~ applicable regulatory requirements and guidance such as 10 CFR 50.34a, 10 CFR 20.1406 and RG 1.143 to be addressed. As such the purchase or lease contracts for any temporary and mobile equipment will specify the applicable criteria. CTS-01140

The space allocated for the temporary and mobile equipment is located in the Auxiliary Building to minimize the impact to the environment in the event of an accident or spillage of radioactive materials. Shield walls are provided on three sides with one side open for access during installation, operation, inspection, and maintenance. The shield walls also serve to minimize spread of contamination to the entire area. A shield door is provided with truck bay access door from the common walkway inside the A/B. At the door opening a curb with sloped sided is RCOL2_11.02-6 after each time the pond is emptied. Sampling procedures will also need to be established to confirm the tritium concentration in the SCR is below the pre-determined setpoint, and that the tritium concentration in the evaporation pond is acceptable for release. RCOL2_11.02-8

11.2.4 Combined License Information

Replace the content of DCD Subsection 11.2.4 with the following.

~~CP~~STD COL 11.2(1) ***11.2(1)*** *The mobile and temporary liquid radwaste processing equipment* CTS-01140

This combined license (COL) item is addressed in Subsection 11.2.1.6.

CP COL 11.2(2) ***11.2(2)*** *Site-specific information of the LWMS*

This COL item is addressed in Subsections 11.2.2 and 11.2.3.1.

CP COL 11.2(3) ***11.2(3)*** *The liquid containing tank failure*

This COL item is addressed in Subsection 11.2.3.2.

CP COL 11.2(4) ***11.2(4)*** *The site-specific dose calculation*

This COL item is addressed in Subsection 11.2.3.1, Table 11.2-10R, Table 11.2-11R, Table 11.2-12R, Table 11.2-13R, Table 11.2-14R and Table 11.2-15R.

CP COL 11.2(5) ***11.2(5)*** *Site-specific cost benefit analysis*

This COL item is addressed in Subsection 11.2.1.5.

CP COL 11.2(6) ***11.2(6)*** *Piping and instrumentation diagrams*

This COL item is addressed in Subsection 11.2.2 and Figure 11.2-201.

11.2.5 References

Add the following references after the last reference in DCD subsection 11.2.5.

11.2-201 *Offsite Dose Calculation Manual for CPNPP Units 1 & 2*, Revision 26.

11.2-202 U.S. Nuclear Regulatory Commission, *Methods for Demonstrating LWR Compliance With the EPA Uranium Fuel Cycle Standard (40 CFR 190),* NUREG-0543, Washington, DC, 1980.

aerosol ~~and~~or vapor. The annual release rates from the evaporation pond to atmosphere are listed in Table 11.3-202, and parameters for the GASPAR II Code calculation are listed in Table 11.3-203. Liquid effluents contain no noble gases. Therefore, noble gases are not presented in the evaporation pond. Calculated individual doses are listed in Table 11.3-204. ~~t~~The maximum organ dose is 2.37E+00 mrem/yr (Adult's GI-Tract). ~~And~~The population doses, including recreational use of SCR, are ~~1.01~~1.05 person-rem (Total body) and ~~0.995~~1.04 person-rem (Thyroid). Moreover, the total of individual doses from the vent stack and the evaporation pond are listed in Table 11.3-205. ~~t~~The maximum organ dose is ~~2.48E+00~~2.55E+00 mrem/yr (Adult's GI-Tract). ~~And the total of population doses~~The total population doses resulting from normal plant and evaporation pond releases are ~~2.59~~3.77 person-rem (Total body) and ~~2.97~~4.29 person-rem (Thyroid). The results are well below the dose criteria in 10 CFR 50 Appendix I. According to NUREG-0543 (Reference 11.3-201), there is reasonable assurance that sites with up to four operating reactors that have releases within Appendix I design objective values are also in conformance with the EPA Uranium Fuel Cycle Standard, 40 CFR 190. Once the proposed CPNPP Units 3 and 4 are constructed, the Comanche Peak site will consist of four operating reactors.

CTS-01105

CTS-01105

11.3.7 Combined License Information

Replace the content of DCD Subsection 11.3.7 with the following.

11.3(1) *Deleted from the DCD.*

11.3(2) *Deleted from the DCD.*

CP COL 11.3(3) ***11.3(3)*** *Onsite vent stack design parameters*

This COL item is addressed in Subsection 11.3.2.

11.3(4) *Deleted from the DCD.*

11.3(5) *Deleted from the DCD.*

CP COL 11.3(6) ***11.3(6)*** *Site-specific dose calculation*

This COL item is addressed in Subsection 11.3.3.1, Table 11.3-8R, Table 11.3-9R, Table 11.3-201, Table 11.3-202, Table 11.3-203, Table 11.3-204 and Table 11.2-205.

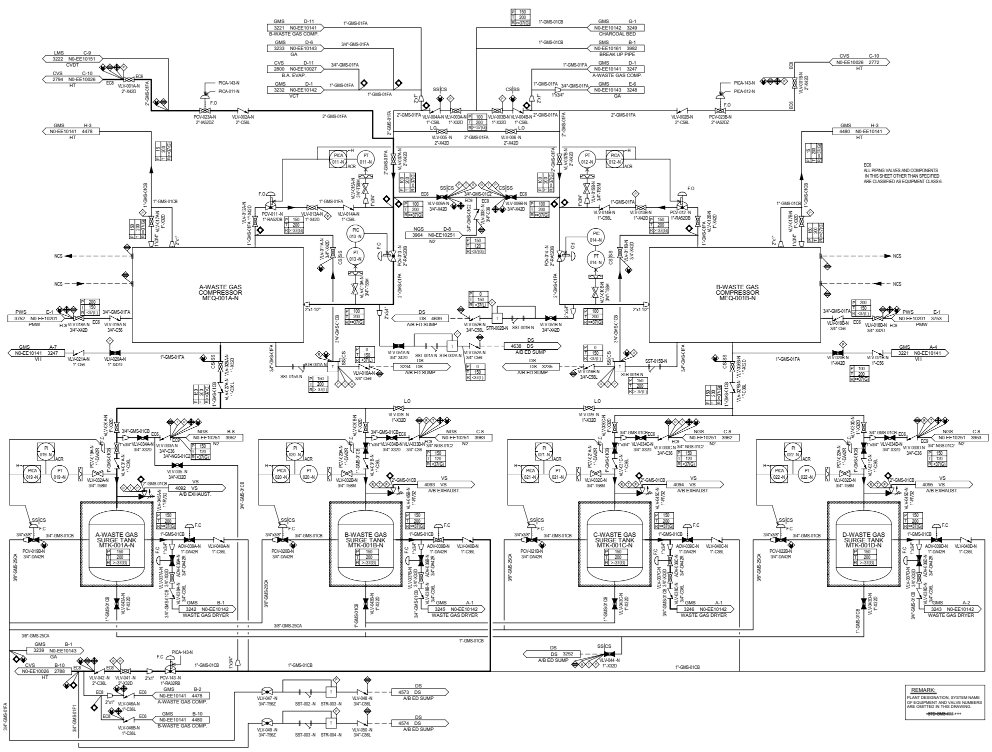
11.3(7) *Deleted from the DCD.*

CP COL 11.3(8) ***11.3(8)****Site-specific cost-benefit analysis*

This COL item is addressed in Subsection 11.3.1.5.

STD COL 11.3(9) CP COL 11.3(9) ***11.3(9)*** *Piping and instrumentation diagrams* CTS-01140

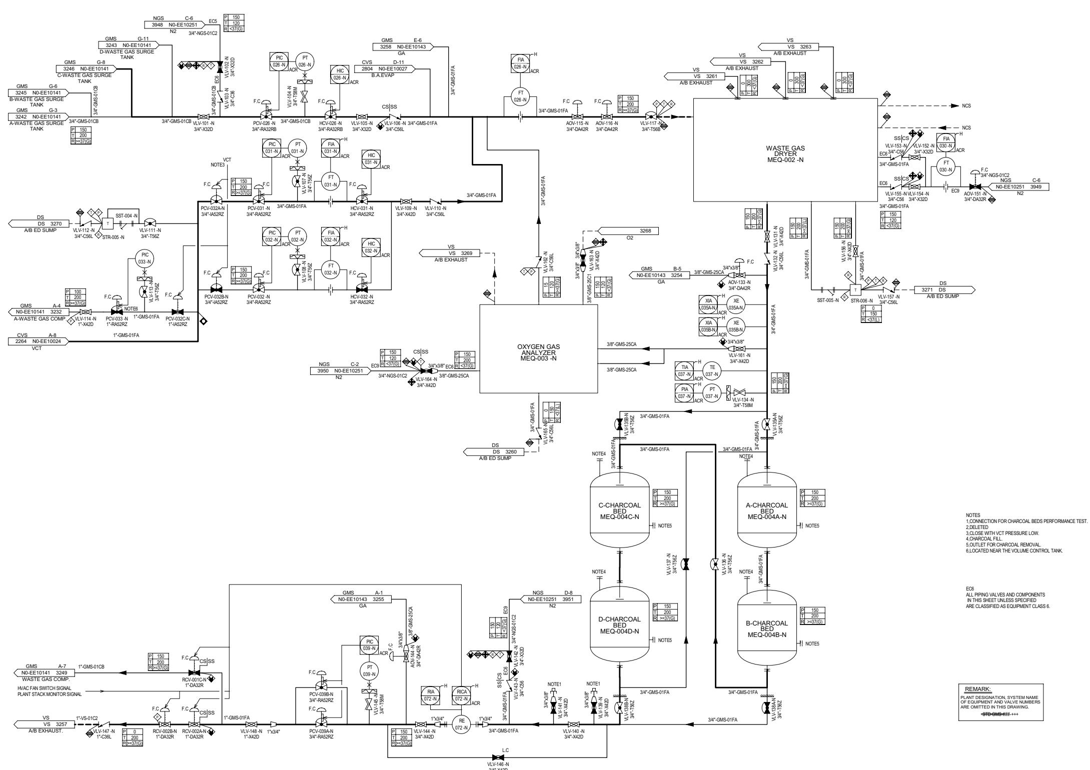
This COL item is addressed in Subsection 11.3.2 and Figure 11.3-201.



~~STD~~CP COL 11.3(9)

Figure 11.3-201 Gaseous Waste Management System Piping and Instrumentation Diagram (Sheet 1 of 3)

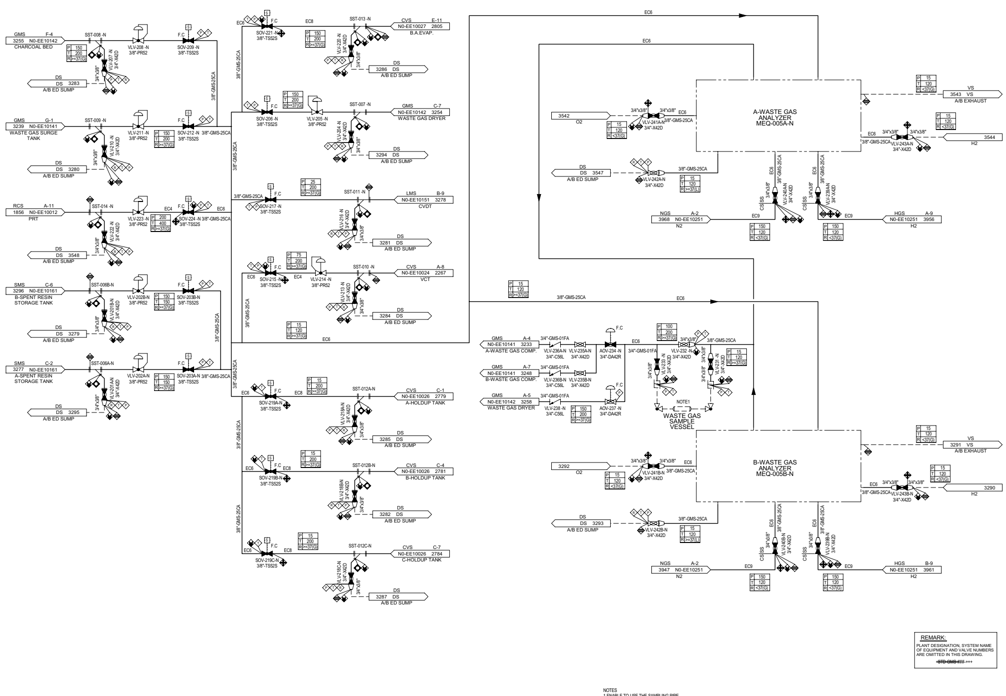
CTS-01140



~~STD~~CP COL 11.3(9)

Figure 11.3-201 Gaseous Waste Management System Piping and Instrumentation Diagram (Sheet 2 of 3)

CTS-01140



STDCP COL 11.3(9)

Figure 11.3-201 Gaseous Waste Management System Piping and Instrumentation Diagram (Sheet 3 of 3)

CTS-01140

11.4 SOLID WASTE MANAGEMENT SYSTEM

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

11.4.1.3 Other Design Considerations

~~CP~~STD COL Replace the fourth bullet in DCD Subsection 11.4.1.3 with the following. CTS-01140

- The current design provides collection and packaging of potentially contaminated clothing for offsite processing and/or disposal. Laundry services are performed offsite at appropriate vendor facilities. Waste resulting from these processes is forwarded directly from the vendor's location to the disposal facility or returned to the long-term storage facility, as appropriate.

11.4.1.5 Site-Specific Cost-Benefit Analysis

STD COL 11.4(6) Replace the second paragraph in DCD Subsection 11.4.1.5 with the following.

The solid waste management system (SWMS) is designed to handle spent resin, sludge, oily waste, spent filters, and dry active waste including contaminated clothing, broken equipment, and maintenance items that cannot be easily decontaminated and reused. The SWMS provides staging areas and handling equipment for waste packaging and storage for the above wastes. Any liquid and gaseous wastes resulting from the solid waste handling operation are collected and returned to LWMS and GWMS, for processing. As such, there is no unique direct release pathway from the solid waste handling operation to the environment, and a cost benefit analysis for the SWMS is included in the consideration of the LWMS and GWMS.

11.4.1.6 Mobile or Temporary Equipment

~~CP~~STD COL 11.4(5)
~~CP~~STD COL 11.4(7)

Replace the last sentence in the paragraph in DCD Subsection 11.4.1.6 with the following. CTS-01140

The de-watering station is contracted for vendor services.

11.4.2.1.1 Dry active wastes

~~CP~~STD COL 11.4(1) Replace the last paragraph in DCD Subsection 11.4.2.1.1 with the following. CTS-01140

Descriptions of wastes other than normally accumulated non-radioactive wastes such as wasted activated carbon from GWMS charcoal beds, solid wastes coming from component (Steam generator, Reactor vessel etc.) replacement activities, and other unusual cases will be described in the process control program and will be implemented in accordance with the milestone listed in Table 13.4-201.

11.4.2.2.1 Spent Resin Handling and De-watering Subsystem

STD COL 11.4(8) Replace the least sentence in the second paragraph in DCD Subsection 11.4.2.2.1 with the following.

The P&ID for the SWMS is provided in Figure 11.4-201.

11.4.2.3 Packaging, Storage, and Shipping

Replace the third paragraph in DCD Subsection 11.4.2.3 with the following. MAP-11-201

CP COL 11.4(7) Some of the dry active waste is only slightly contaminated and permits contact handling. The SWMS design does not include compaction equipment or drum dryer equipment. These wastes are treated by contract services from specialized facilities.

CP COL 11.4(1) Replace the last sentence of the fourth paragraph in DCD Subsection 11.4.2.3 with the following.

A common radwaste interim storage facility is provided between Units 3 and 4 and is designed to store classes A, B, and C wastes from all four CPNPP units for up to 10 years. The common radwaste facility is designed to maintain onsite and offsite radiological doses within the limits in 10 CFR Part 20 and to maintain occupational exposures ALARA. This common radwaste interim storage facility filled. In particular, in 2004, Waste Control Specialists applied for a license from the Texas Commission on Environmental Quality to develop a disposal facility in Andrews County, Texas, for Class A, B, and C waste. In August 2008 Waste Control Specialists received a draft license from the Texas Commission on Environmental Quality. According to its website, Waste Control Specialists plans on opening the Andrews County site in about December of 2010. Notwithstanding this, if additional storage capacity were eventually to be needed, CPNPP could expand the interim storage facility or construct additional storage facilities in accordance with applicable NRC guidance, such as Regulatory Issue Summary 2008-12, Considerations for Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Materials Licenses, and Standard Review Plan 11.4.

11.4.3.2 Process Control Program

~~CP~~STD COL 11.4(3)

Replace the content of DCD Subsection 11.4.3.2 with the following. CTS-01140

This subsection adopts NEI 07-10A. The Process Control Program (PCP) describes the administrative and operational controls used for the solidification of liquid or wet solid waste and the dewatering of wet solid waste. The purpose of the PCP is to provide the necessary controls such that the final disposal waste product meets applicable federal regulations (10 CFR Parts 20, 50, 61, 71, and 49 CFR Part 173), state regulations, and disposal site waste form requirements for burial at a low level waste disposal site that is licensed in accordance with 10 CFR Part 61. Waste processing (solidification and/or dewatering) equipment and services may be provided by third-party vendors. The process used in the existing design meets the applicable requirements of the PCP. Table 13.4-201 provides the milestone for PCP implementation.

Additional onsite radioactive solid waste storage is provided and is discussed in Subsection 11.4.2.3.

11.4.4.5 Mobile De-watering System

~~CP~~STD COL 11.4(4)
~~CP~~STD COL 11.4(7)

Replace the last sentence in DCD Subsection 11.4.4.5 with the following. CTS-01140

The mobile de-watering station is vendor supplied and operated within the specific requirements and layout based on vendor specifications. The mobile system includes the necessary connections and fittings to the interface with the plant piping. The connectors are uniquely designed to prevent inadvertent cross connection between the radioactive and non-radioactive plant piping. The piping also includes backflow inhibitors. Liquid effluent from the mobile de-watering station is routed to the Liquid Waste Management System and the non-condensables are vented to the A/B ventilation system. An operating procedure will be provided prior to fuel load to ensure proper operation of the mobile de-watering station to prevent the contamination of non-radioactive piping or uncontrolled releases of radioactivity into the environment.

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_11.04-1

11.4.8 Combined License Information

Replace the content of DCD Subsection 11.4.8 with the following.

CP COL 11.4(1) STD COL 11.4(1) ***11.4(1)*** *Plant-specific needs for onsite waste storage* CTS-01140

This COL item is addressed in Subsection 11.4.2.1.1 and 11.4.2.3.

11.4(2) *Deleted from the DCD*

~~CP~~STD COL 11.4(3) ***11.4(3)*** *Plan for the process control program describing the process and effluent monitoring and sampling program* CTS-01140

This COL item is addressed in Subsection 11.4.3.2.

~~CP~~STD COL 11.4(4) ***11.4(4)*** *Mobile/portable SWMS connections* CTS-01140

This COL item is addressed in Subsection 11.4.4.5.

~~CP~~STD COL 11.4(5) ***11.4(5)*** *Offsite laundry facility processing and/or a mobile compaction* CTS-01140

This COL item is addressed in Subsections 11.4.1.3 and 11.4.1.6.

STD COL 11.4(6) ***11.4(6)*** *Site-specific cost benefit analysis*

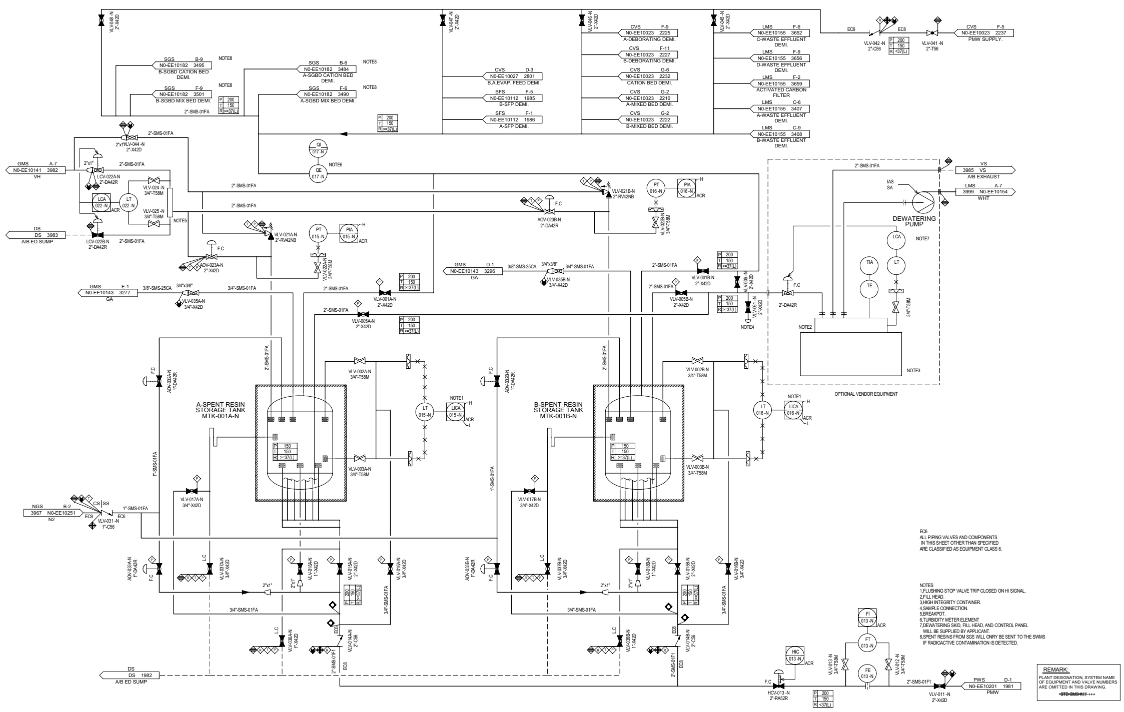
This COL item is addressed in Subsection 11.4.1.5.

~~CP~~STD COL 11.4(7) ***11.4(7)*** *Site-specific solid waste processing facility* CTS-01140

This COL item is addressed in Subsections 11.4.1.6 and 11.4.4.5.

STD COL 11.4(8) CP COL 11.4(8) ***11.4(8)*** *Piping and instrumentation diagrams* CTS-01140

This COL item is addressed in Subsection 11.4.2.2.1 and Figure 11.4-201.



~~STD~~CP COL 11.4(8)

Figure 11.4-201 Solid Waste Management System Piping and Instrumentation Diagram

CTS-01140

Main Control Room and Radwaste Control Room are alarmed automatically. The monitor is not safety-related and does not perform any safety function. RCOL2_11.05-2

11.5.2.6 Reliability and Quality Assurance

CP COL 11.5(4)
CP COL 11.5(5)

Replace ~~the first sentence in~~ the third paragraph and the forth paragraph in DCD Subsection 11.5.2.6 with the following. MAP-11-201

The procedures for acquiring and evaluating samples of radioactive effluents, as well as procedures for inspection, calibration, and maintenance of the monitoring and sampling equipment are developed in accordance with RG 1.21 and RG 4.15. The procedures for the radioactive waste systems are developed in accordance with RG 1.33. The analytical procedures are developed in accordance with RG 1.21. These procedures, described in Subsection 13.5.2, are prepared and implemented under the quality assurance program referenced in Chapter 17. Inspections are conducted daily on the process and effluent monitoring and sampling system through observance of the system channels. Periodically, the system is further checked during the course of reactor operation through the implementation of a check source. The detector response is compared to the instrument's background count rate to determine functionality. Calibration of monitors is conducted through the use of known radionuclide sources as documented by national standards. Maintenance is conducted routinely on the monitoring and sampling system, which is easily accessible, as is the accompanying power supply. Electronic and sampling components undergo a full servicing, periodically, as detailed in the operational instructions in order to maintain consistent operation. MAP-11-201

11.5.2.7 Determination of Instrumentation Alarm Setpoints for Effluents

~~CP~~STD COL 11.5(2)

Replace the second sentence in DCD Subsection 11.5.2.7 with the following. CTS-01140

The methodology for the calculation of the alarm setpoints is part of the ODCM described in Subsection 11.5.2.9.

11.5.2.8 Compliance with Effluent Release Requirements

~~CP~~STD COL 11.5(4)
~~CP~~STD COL 11.5(5)

Replace the last sentence in the first paragraph and the second paragraph in DCD Subsection 11.5.2.8 with the following. CTS-01140

Site-specific procedures on equipment inspection, calibration, maintenance, and regulated record keeping, which meet the requirements of 10 CFR 20.1301, 10 CFR 20.1302, and 10 CFR 50 Appendix I, are prepared and implemented under the quality assurance program referenced in Chapter 17.

11.5.2.9 Offsite Dose Calculation Manual

Replace ~~the first sentence in~~ the first paragraph and the second paragraph in DCD Subection 11.5.2.9 with the following. MAP-11-201

~~CP~~STD COL 11.5(1)
~~CP~~STD COL 11.5(2)

Fulfillment of the 10 CFR 50 Appendix I guidelines requires effluent monitor data. A description of the monitor controls and the calculation of the monitor setpoints are part of the ODCM. The ODCM also provides the rationale for compliance with the radiological effluent Technical Specifications and for the calculation of appropriate setpoints for effluent monitors. The ODCM follows the guidance of NEI 07-09A. The ODCM and radiological effluent Technical Specifications, which reflect the new reactor units, are implemented in accordance with the milestone listed in Table 13.4-201. The ODCM will be re-written to apply to all ~~four CPNPP~~ units and to conform with the NEI template before receipt of radioactive material ~~in Unit 3~~ in accordance with FSAR Table 13.4-201. The manual will also contain the planned effluent discharge flow rates and addresses the numerical guidelines stated in 10 CFR 50, Appendix I (Ref. 11.5-3). The manual will be produced in accordance with the guidance of NUREG-1301 (Ref. 11.5-21), and NUREG-0133 (Ref. 11.5-18), and with the guidance of RG 1.109 (Ref. 11.5-22), RG 1.111 (Ref. 11.5-23), or RG 1.113 (Ref. 11.5-24). The manual will include a discussion of how the NUREGs, RGs, or alternative methods are implemented. CTS-01140 CTS-01140 MAP-11-201

11.5.2.10 Radiological Environmental Monitoring Program

~~CP~~STD COL 11.5(3)

Replace the content of DCD Subsection 11.5.2.10 with the following. CTS-01140

The program ~~for CPNPP Units 3 and 4~~ is going to be described in the plant Technical Specification ~~of CPNPP Units 3 and 4~~ and the ODCM, which reflect the new reactor units, is implemented in accordance with the milestone listed in Table 13.4-201. This program measures direct radiation using thermoluminescent dosimeters as well as analyses of samples of the air, water, vegetation, and fauna in the surrounding area. The guidance outlined in NUREG-1301 (Reference 11.5-21) and NUREG-0133 (Reference 11.5-18) is to be used when developing the radiological environmental monitoring program. The radiological environmental monitoring program ~~for CPNPP Units 3 and 4~~ follows the guidance of NEI 07-09A. CTS-01140

11.5.2.11 Site-Specific Cost-Benefit Analysis

~~CP~~STD COL 11.5(6)

Replace the content of DCD Subsection 11.5.2.11 with the following. CTS-01140

The results of site-specific cost-benefit analysis are described in Subsections 11.2.1.5 and 11.3.1.5.

11.5.5 Combined License Information

Replace the content of DCD Subsection 11.5.5 with the following.

CP COL 11.5(1)
STD COL 11.5(1)

11.5(1) *Site-specific aspects* CTS-01140

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

~~CP~~STD COL 11.5(2)

11.5(2) *Offsite dose calculation manual* CTS-01140

This COL item is addressed in Subsection 11.5.2.7 and 11.5.2.9.

~~CP~~STD COL 11.5(3)

11.5(3) *Radiological and environmental monitoring program* CTS-01140

This COL item is addressed in Subsection 11.5.2.10.

CP COL 11.5(4)
STD COL 11.5(4)

11.5(4) *Inspection, decontamination, and replacement* CTS-01140

This COL item is addressed in Subsections 11.5.2.6 and 11.5.2.8.

CP COL 11.5(5)
STD COL 11.5(5)

11.5(5) *Analytical procedures* CTS-01140

This COL item is addressed in Subsections 11.5.2.6 and 11.5.2.8.

~~CP~~STD COL 11.5(6)

11.5(6) *The site-specific cost benefit analysis* CTS-01140

This COL item is addressed in Subsection 11.5.2.11.

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 ascension testing and	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				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 ANSI N323A-1997, as it relates to the calibration and maintenance of	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				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 Unit 1 Turbine Building. In accordance with the Radiation Protection	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				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."	-
RCOL2_12.05-4	12.5	12.5-1	Response to RAI No.117. Luminant Letter	Add following paragraphs after the sixth paragraph of Section 12.5;	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
			No.TXNB-09068 Date 11/16/2009	“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 (RWP) process. Physical access controls for Very High Radiation Areas are provided by physical barriers such as lockable	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				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 records during construction to facilitate updating the conceptual site model for groundwater movement	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				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, radiation survey instruments, and laboratory equipment.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
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
RCOL2-12.03-12.04-11	12.1.3	12.1-2	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Revised the fourth paragraph to indicate that guidance of RG 4.21 is followed.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2-12.03-12.04-11	12.1.4	12.1-3	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Added “and Subsection 12.3.1.3.2” to COL Action Items 12.1(6) and 12.1(7).	-
RCOL2-12.03-12.04-11	12.1.4	12.1-3	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Added COL Action Item 12.1(8).	-
RCOL2-12.03-12.04-11	12.3.1.2.2	12.3-1	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Added Subsection 12.3.1.3.1 Design Considerations, Subsection 12.3.1.3.1.1 Design Considerations for Site Specific Design, and Subsection 12.3.1.3.2 Operational/Programmatic Considerations.	-
RCOL2-12.03-12.04-11	12.3.6	12.3-2	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Added COL Action Item 12.1(10).	-
RCOL2-12.03-12.04-11	12.3	12.3-2	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Added Table 12.3-201 Regulatory Guide 4.21 Design Objectives and Applicable FSAR Subsection Information for Minimizing Contamination and Generation of Radioactive Waste.	-
RCOL2-12.03-12.04-11	12.3	12.3-3	Response to RAI No. 135 Luminant Letter no.TXNB-10065 Date 9/22/2010	Added Figure 12.3-201 Yard Piping Routing and Building Penetration Schematic (Not to scale).	-
CTS-01140	12.1.3 12.1.4 12.2.1.1.10 12.2.3 12.3.1.2.1.1 12.3.2.2.8 12.3.4 12.3.6	12.1-2 12.2-1 12.2-3 12.3-1 12.3-2 [12.3-3] [12.3-4]	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
DCD_12.02-29	12.2.3	12.2-3	Response to DCD RAI No.532	COL Action Items (CP COL12.2 (3) and 12.2 (4)) were added.	4
DCD_12.02-30	12.3.6	12.3-2 [12.3-4]	Response to DCD RAI No.532	COL Action Item (CP COL 12.3(9)) was added.	4
DCD_12.02-29 DCD_12.02-30	12.5	12.5-2	Response to DCD RAI No.532	Resolution to COL Action Items (CP COL12.2 (3) 12.2 (4) and 12.3 (9)) was added.	4
DCD_12.02-29 DCD_12.02-30	12.5	12.5-2 [12.5-3]	Response to DCD RAI No.532	Resolution to COL Action Items (CP COL12.2 (3) 12.2 (4) and 12.3 (9)) was added.	4

*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.

12.1.3 Operational Considerations

~~CP~~STD COL 12.1(3)

Replace the first and second paragraphs in DCD Subsection 12.1.3 with the following. CTS-01140

The operational radiation protection program for ensuring that operational radiation exposures are as low as reasonably achievable (ALARA) is discussed in Section 12.5, by utilizing of NEI 07-03A (Reference 12.1-25)~~ in combination with existing or modified CPNPP Units 1 and 2 site program information~~. The program follows the guidance of RG 8.2, 8.4, 8.6, 8.7, 8.9, 8.13, 8.15, 8.25, 8.27, 8.28, 8.29, 8.34, 8.35, 8.36, and 8.38. RCOL2_12.05-3

CP COL 12.1(6)
CP COL 12.1(7)

Replace the last sentence of third paragraph in DCD Subsection 12.1.3 with the following.

STD COL 12.1(8)

~~To achieve this objective, two kinds of operational procedures are developed. First operational procedures are developed to~~COL Applicant performs periodic reviews of operational practices to ensure that operating procedures ~~are revised to~~ reflect the installation of new or modified equipment, personnel qualification and training are kept current, and facility personnel are following the operating procedures. RCOL2_12.03-12.04-11 ~~The other operational procedures are developed to track implementation of requirements for record retention according to~~In accordance with 10 CFR 50.75(g) and 10 CFR 70.25(g) as applicable,~~. This~~ records~~,~~ containing facility design and construction, facility design changes, site conditions before and after construction, onsite waste disposal and contamination, and results of radiological surveys, ~~is~~are used to facilitate decommissioning. RCOL2_12.03-12.04-11 ~~These procedures are addressed in the Plant Radiation Protection Procedures, described in 13.5.2.2.~~The guidance of RG 4.21 (Reference 12.1-27) is followed in developing and implementing operational procedures for SSCs which could be potential sources of contamination, with the objective of limiting leakage and the spread of contamination within the plant. These procedures are subject to the requirements of Subsection 13.5.2. RCOL2_12.03-12.04-11

12.1.4 Combined License Information

Replace the content of DCD Subsection 12.1.4 with the following.

CP COL 12.1(1)

***12.1(1)** Policy considerations regarding plant operations*

This Combined License (COL) item is addressed in Subsections 12.1.1.3.1, 12.1.1.3.2 and 12.1.1.3.3.

***12.1(2)** Deleted from the DCD.*

~~CP~~STD COL 12.1(3)

***12.1(3)** Following the guidance regarding radiation protection* CTS-01140

This COL item is addressed in Subsection 12.1.3.

12.2 RADIATION SOURCES

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

12.2.1.1.10 Miscellaneous Sources

CP COL 12.2(2)

Replace the second and third sentences of the sixth paragraph in DCD Subsection 12.2.1.1.10 with the following.

CPNPP Units 3 and 4 have no additional storage space for radwaste inside the plant structures. An additional storage space for radwaste, to be named the Interim Radwaste Storage Building, is planned for the future construction outside the plant structures. The radiation protection program (see Section 12.5) associated with this additional radwaste storage space is in place to ensure compliance with ~~Title~~ 10~~, Code of Federal Regulations (~~CFR~~) Part~~ 20, 10 CFR 50, Appendix A, GDC 61 and 63, 40 CFR 190 and to be consistent with the recommendations of RG 8.8 and Generic Letter 81.38. The Interim Radwaste Storage Building design criteria is described in Subsection 11.4.2.3. RCOL2_12.03-12.04-4

~~CP~~STD COL 12.2(2)

Replace the second sentence of the seventh paragraph in DCD Subsection 12.2.1.1.10 with the following. CTS-01140

~~CPNPP Units 3 and 4 have~~There are no additional radwaste facilities for dry active waste. CTS-01140

CP COL 12.2(1)

Replace the last paragraph in DCD Subsection 12.2.1.1.10 with the following.

The Evaporation Pond is described in FSAR Subsection 11.2.3.4. Access to the radioactive material in the pond will be restricted by use of a fence with locked gate, surrounding the pond area with posting and labeling, such as the appropriate radioactive placards, in accordance with the Operational Radiation Protection Program. The fence will be placed at a distance from the pond, so that the dose rate at the fence is below the maximum dose rate for Zone I (0.25 mrem/hr). Additionally, the evaporation pond is located within the Owner Property Boundary and the area is subject to surveillance by random Security patrols. Potential exposure to airborne activity is discussed in FSAR Subsections 11.2.3.1 and 11.2.3.4. RCOL2_12.02-2

12.2.3 Combined License Information

Replace the content of DCD Subsection 12.2.3 with the following.

CP COL 12.2(1) ***12.2(1)*** *Additional sources*

This COL item is addressed in Subsection 12.2.1.1.10.

CP COL 12.2(2) STD COL 12.2(2) ***12.2(2)*** *Additional storage space and radwaste facilities* CTS-01140

This COL item is addressed in Subsection 12.2.1.1.10 and Section 12.5.

CP COL 12.2(3) ***12.2(3)*** *Radiation Protection Program provisions for limiting the radiation levels of the RWSAT and PMWTs.* DCD_12.02-29

This COL item is addressed in Section 12.5.

CP COL 12.2(4) ***12.2(4)*** *Ensuring the radioactivity concentration in the RWSAT and PMWTs remain under the levels described in the DCD.*

This COL item is addressed in Section 12.5.

12.3 RADIATION PROTECTION DESIGN FEATURES

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

12.3.1.2.1.1 Radiation Zoning

~~CP~~STD COL 12.3(4) Replace the fourth sentence of the fourth paragraph in DCD Subsection 12.3.1.2.1.1 with the following. CTS-01140

Site radiation zones for ~~CPNPP Units 3 and 4~~ plant arrangement plan under normal operation/shutdown conditions are shown in Figure 12.3-1R (COL information provided on Sheet 1 of 34). CTS-01140

12.3.1.2.2 Accident Conditions

CP SUP 12.3(1) Add the following information after the last sentence of the second paragraph in DCD Subsection 12.3.1.2.2.

The essential service water (ESW) pipe tunnel structure at elevation 793’-1” has been changed in the site-specific layout. However, the radiation protection design in DCD Chapter 12 is not affected by the modification of ESW pipe tunnel structure, and Figures 12.3-2 through 12.3-6 can be used except for the structure of ESW pipe tunnel. Thus, these figures are not replaced in Final Safety Analysis Report (FSAR) Chapter12. The structure of the ESW pipe tunnel is shown on Figure 1.2-2R.

12.3.1.3.1 Design Considerations

RCOL2_12.03-12.04-11

CP COL 12.3(10) Add the following information after DCD Subsection 12.3.1.3.1.

12.3.1.3.1.1 Design Considerations for Site Specific Design

The radwaste evaporation pond is designed with two layers of High Density Polyethylene (HDPE) with smooth surfaces and a drainage net in between for leak detection and collection. By this and operating procedures, the evaporation

12.3.2.2.8 Spent Fuel Transfer Canal and Tube Shielding Design

---

~~CP~~STD COL 12.3(5)

Replace the last paragraph in DCD Subsection 12.3.2.2.8 with the following. CTS-01140

Administrative control of the fuel transfer tube inspection and the access control of the area near the seismic gap below the fuel transfer tube will be addressed in a radiation protection program, described in Section 12.5.

12.3.4 Area Radiation and Airborne Radioactivity Monitoring Instrumentation

---

~~CP~~STD COL 12.3(1)

Replace the last paragraph in DCD Subsection 12.3.4 with the following. CTS-01140

Portable instruments to be used in the event of an accident are placed so as to be readily available to personnel responding to an emergency.

The use of portable instruments and the associated training and procedures to accurately determine the airborne iodine concentration in areas within the facility where plant personnel may be present during an accident, in accordance with the requirements of 10 CFR 50.34(f)(2)(xxvii) and the criteria in Item III.D.3.3 of NUREG-0737 will be addressed in radiation protection program, described in Section12.5.

Procedures for locating suspected high-activity areas are part of the radiation protection program that is described in Section 12.5.

12.3.6 Combined License Information

Replace the content of DCD Subsection 12.3.6 with the following.

~~CP~~STD COL 12.3(1)

12.3(1) *Portable instruments* CTS-01140

This COL item is addressed in Subsection 12.3.4 and Section 12.5.

12.3(2) *Deleted from the DCD.*

12.3(3) *Deleted from the DCD.*

~~CP~~STD COL 12.3(4)

12.3(4) *Site radiation zones* CTS-01140

This COL item is addressed in Subsection 12.3.1.2.1.1 and Figure 12.3-1R (sheet 1 of 34).

CP COL 12.3(5) STD COL 12.3(5) ***12.3(5)*** *Administrative control of the fuel transfer tube inspection* CTS-01140

This COL item is addressed in Subsection 12.3.2.2.8 and Section 12.5.

CP COL 12.3(9) ***12.3(9)*** *Radiation Protection Program contains provisions to ensure the B.A. evaporator room does not become a VHRA.* DCD_12.02-30

This COL item is addressed in Section 12.5

CP COL 12.3(10) ***12.3(10)*** *The COL Applicant will address the site-specific design features, operational and post-construction objectives of Regulatory Guide 4.21.* RCOL2_12.03-12.04-11

This COL item is addressed in Subsections 12.3.1.3.1.1, 12.3.1.3.2 and Table 12.3-201.

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_12.05-4

CP COL 12.2(3)
CP COL 12.2(4)
CP COL 12.3(9)

Modify the third paragraph of Subsection 12.5.4.1 of NEI 07-03A as indicated below. DCD_12.02-29 DCD_12.02-30

The frequency and extent of the surveys will depend upon several factors, such as location, actual or potential radiation levels, plant operational status and work in progress, and accessibility/occupancy. The frequency of surveys may be weekly, monthly, quarterly, semiannually, annually, or as directed by the Radiation Protection Manager. Surveys are performed more frequently in accessible areas subject to changes in radiological conditions. For example, periodic routine surveillance activities are required to ensure that the dose rate at 2 meters from the surface of both the RWSAT and the PMWTs remain below 0.25 mrem/h. Similarly, the radiological protection procedures must stipulate routine surveillance activities for the B.A. evaporator room during the end of cycle to ensure that continued operation of the evaporator does not lead to the B.A. evaporator room inadvertently becoming a VHRA. Site specific procedures define the survey frequencies and extent.

Add the following information after the paragraph in the discussion on Radwaste Handling in Subsection 12.5.4.2 of NEI 07-03A.

CPNPP Units 3 and 4 have a plan to store temporarily radioactive wastes/materials in Interim Radwaste Storage/Staging Building outside the plant structures. Entry into the radiologically controlled areas of this building is allowed only through the issuance of a Radiation Work Permit. Non-radiologically controlled areas allow for general access.

CP COL 12.2(3)
CP COL 12.2(4)
CP COL 12.3(9)

Add the following information after the paragraph in the discussion on Normal Operation in Subsection 12.5.4.2 of NEI 07-03A. DCD_12.02-29 DCD_12.02-30

If the activity concentration in the RWSAT and the PMWTs becomes higher than the levels described in the DCD, the dose rate at 2 meters from the surface of the tank will exceed 0.25 mrem/h. Therefore, a method of ensuring that the radioactivity concentration in both the RWSAT and the PMWTs remain under the specified concentration level described in the DCD is to be implemented. Additionally, the radiological surveillance procedures provide for periodic routine surveillances to verify that the dose rate at 2 meters from the surface of the RWSAT and the PMWTs remains below 0.25 mrem/h.

In order to ensure that the B.A. evaporator room does not become a VHRA during the end of cycle, routine surveillance for the B.A. evaporator room during the end of cycle is stipulated in the Radiation Protection Program. In the event that the routine surveillance shows an increase in dose level, an appropriate strategy to sufficiently reduce the dose rate below the criteria for a VHRA is to be provided. DCD_12.02-29 DCD_12.02-30

Add the following information after the last paragraph in the discussion on Calibration in Subsection 12.5.4.2 of NEI 07-03A. RCOL2_12.05-6

Source Term Reduction Strategy

The plant source term is described by the level of radiation, or radioactive material, given off or contained in plant systems, structures, or components that results in occupational radiation exposure from routine operation of the plant, including anticipated operational occurrences. The source term includes, but is not limited to, activated components in the primary coolant, corrosion and wear products activated in the reactor and distributed in plant systems, or sealed sources maintained to support plant operations. The reduction and control of the plant radiation source term is an essential element of meeting the requirements of 10 CFR 20.1101(b). RCOL2_12.05-6

FSAR Subsection 12.1.1.3.2 commits the administrative programs and procedures to comply with RG 8.8, which provides several strategies for reducing personnel exposure, including some options that would limit the overall source term, such as crud control and equipment isolation and decontamination. Additionally, the following DCD Subsections, which describe design considerations for the reduction of the overall source term, are already incorporated into the FSAR by reference:

- Subsection 12.1.2.1
- Subsection 12.1.2.2.3
- Subsection 12.3.1.1.1.1 Item (E)
- Table 12.3-7

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

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~~provided~~ by the Plant Manager~~'s~~ (or designee) RCOL2_12.03-12.04-2

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 of 7) (Sheet 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 of 8) (Sheet 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
RCOL2_13.06.01-1	13.6	13.6-1	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added first sentence to first paragraph.	-
RCOL2_13.06.01-1	13.6.2	13.6-1	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added new Section 13.6.2.	-
RCOL2_13.06.01-1	13.6.2.2	13.6-3	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Replaced the last sentence.	-
RCOL2_13.06.01-3	13.1.1.2.1	13.1-3	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added “and safety/security interface” to the first sentence of the third bullet.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_13.06.01-4	Table 13.4-201 (sheet 6 of 9) (Sheet 7 of 9)	13.4-7 13.4-8	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Revised the milestone statement for Item #15 to read as follows: Prior to receipt of fuel on-site for Units 3 and 4.	-
RCOL2_13.06.01-6	13.6.1	13.6-1	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added Reference 13.06-7 to the last paragraph.	-
RCOL2_13.06.01-7	13.6	13.6-1	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added statement that the Security Plan for Units 3 and 4 is part of the Combined License Application.	-
RCOL2_13.06.01-7	13.6.1	13.6-1	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Deleted the words “as separate licensing documents” from the section.	-
RCOL2_13.06.01-8	13.6.2.1	13.6-2	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added Reference 13.06-7 to the first paragraph.	-
RCOL2_13.06.01-8	13.6.2.5	13.6-4	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added Reference 13.06-7.	-
RCOL2_13.06.01-10	13.6.2.3	13.6-3	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added last sentence which includes References 13.06-7 and 13.06-201.	-
RCOL2_13.06.01-11	13.6.2.4	13.6-4	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added Reference 13.06-7 to last sentence.	-
RCOL2_13.06.01-12	13.6.4	13.6-4	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added Table 13.4-201 and Section 3 of Part 10 to COL Information Item 13.6(1).	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_13.06.01-12	13.6.4	13.6-4	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Deleted "and the physical security plan" from COL Information Item 13.6(2)	-
RCOL2_13.06.01-12	13.6.4	13.6-5	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Deleted "and the physical security plan" from COL Information Item 13.6(5)	-
RCOL2_13.06.01-18	13.1.1.2.1	13.1-3	Response to RAI No. 161 Luminant Letter no.TXNB-10047 Date 6/24/2010	Added fourth bullet, "Programmatic Controls," to address the programmatic controls including safety/security interface.	-
RCOL2_13.04-1 S01	Table 13.4-201 (Sheets 4 and 5 of 9)	13.4-5 13.4-6	Supplemental Response to RAI No. 71 Luminant Letter no.TXNB-10066 Date 9/29/2010	Deleted Groundwater Monitoring Program from Chapter 11 and added to Chapter 12 group.	-
CTS-01140	13.3 13.3.1 13.3.4 13.4.1 Table 13.4-201 13.6	13.3-1 13.3-2 13.4-1 13.4-2 Through 13.4-10 13.6-1	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

13.3 EMERGENCY PLANNING

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

~~CP~~STD COL 13.3(1)

Replace the fourth sentence of the first paragraph in the DCD Subsection 13.3 with the following. CTS-01140

Interfaces of design features with site specific designs and site parameters are addressed in ~~the CPNPP Units 3 and 4~~ Combined License Application Part 5 "Emergency Plan". CTS-01140

~~CP~~STD COL 13.3(7)

Add the following paragraph to the end of DCD Section 13.3. CTS-01140

The description of the operation support center is provided in ~~the CPNPP Units 3 and 4~~ Combined License Application Part 5 "Emergency Plan".

13.3.1 Combined License Application and Emergency Plan Content

CP COL 13.3(2)

Replace the first and second sentence of the first paragraph in the DCD Subsection 13.3.1 with the following.

The Emergency Plan for the CPNPP Units 3 and 4 is provided in Combined License Application Part 5 "Emergency Plan". It incorporates, by reference, State and local emergency plans and includes copies of letters of agreement from state and local governmental agencies with emergency planning responsibilities.

~~CP~~STD COL 13.3(3)
~~CP~~STD COL 13.3(4)

Replace the second paragraph in the DCD Subsection 13.3.1 with the following. CTS-01140

Emergency classifications and action levels, and the security-related aspects of emergency planning are addressed in ~~the CPNPP Units 3 and 4~~ Combined License Application Part 5 "Emergency Plan".

13.3.2 Emergency Plan Considerations for Multi-Unit Site

CP COL 13.3(5)

Replace the sentence in the DCD Subsection 13.3.2 with the following.

The interface between the Emergency Plan for CPNPP Units 3 and 4 and the Emergency Plan for CPNPP Units 1 and 2 is addressed in the CPNPP Units 3 and 4 Combined License Application Part 5 "Emergency Plan".

13.3.3 Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria

CP COL 13.3(6) Replace the sentence in the DCD Subsection 13.3.3 with the following.

Emergency planning inspections, tests, analyses, and acceptance criteria are addressed in the CPNPP Units 3 and 4 Combined License Application Part 5 "Emergency Plan" and are provided in the CPNPP Units 3 and 4 Combined License Application Part 10 "ITAAC and ITAAC Closure".

13.3.4 Combined License Information

Replace the content of DCD Subsection 13.3.4 with the following.

~~CP~~STD COL 13.3(1) ***13.3(1)*** *Interfaces of design features with site specific designs and site parameters*
This COL item is addressed in Section 13.3. CTS-01140

CP COL 13.3(2) ***13.3(2)*** *Comprehensive emergency plan*
This COL item is addressed in Subsection 13.3.1.

~~CP~~STD COL 13.3(3) ***13.3(3)*** *Emergency classification and action level scheme* CTS-01140
This COL item is addressed in Subsection 13.3.1.

~~CP~~STD COL 13.3(4) ***13.3(4)*** *Security-related aspects of emergency planning* CTS-01140
This COL item is addressed in Subsection 13.3.1.

CP COL 13.3(5) ***13.3(5)*** *Multi-unit site interface plan depending on the location of the new reactor on, or near, an operating reactor site with an existing emergency plan*
This COL item is addressed in Subsection 13.3.2.

CP COL 13.3(6) ***13.3(6)*** *Emergency planning inspections, tests, analyses, and acceptance criteria*
This COL item is addressed in Subsection 13.3.3.

~~CP~~STD COL 13.3(7) ***13.3(7)*** *Operation support center* CTS-01140
This COL item is addressed in Section 13.3.

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)
CP 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. CTS-01140

CP 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~~CP COL 13.4(1)

Table 13.4-201 (Sheet 1 of 9) CTS-01140

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation: Milestone	Implementation: 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 CTS-01140
	• Highly Radioactive Fluid Systems Outside Containment Monitoring Program (CP COL 13.4(2))	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~~CP COL 13.4(1)

CTS-01140

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	Implementation: 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
	• 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
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)
5.	Reactor Vessel Material Surveillance Program	10 CFR 50.60 10 CFR 50, Appendix H	5.3.1	Prior to initial criticality	License Condition

CP COL 13.4(2)

RCOL_13.04-2

CTS-01140

RCOL_13.04-3
DCD_09.03.02-13

RCOL2_13.04-4

~~STD~~CP COL 13.4(1)

CTS-01140

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
	• 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				

CP COL 13.4(2)

CTS-01140
RCOL_13.04-3
DCD_09.03.02-13

~~STD~~CP COL 13.4(1)

Table 13.4-201 (Sheet 4 of 9)

CTS-01140

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation Milestone	Implementation Requirement
	• Radiological Effluent Technical Specifications/ Standard Radiological Effluent Controls	10 CFR 20.1301 and 20.1302 10 CFR 50.34a 10 CFR 50.36a 10 CFR 50, Appendix I, section II and IV	11.5	Receipt of radioactive material on-site	License Condition
	• Offsite Dose Calculation manual	Same as above	11.5	Receipt of radioactive material on-site	License Condition
	• Radiological Environmental Monitoring Program	Same as above	11.5	Receipt of radioactive material on-site	License Condition
	• Process Control Program	Same as above	11.4	Receipt of radioactive material on-site	License Condition
10.	Radiation Protection Program	10 CFR 20.1101	12.5	Prior to initial receipt of by-product, source, or special nuclear materials (excluding Exempt Qualities as described in 10 CFR 30.18) for those elements of the Radiation Protection (RP) Program necessary to support such receipt	License Condition

RCOL_13.04-1
RCOL2_13.04-1 S01

~~STD~~CP COL 13.4(1)

Table 13.4-201 (Sheet 5 of 9)

CTS-01140

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation Milestone	Implementation Requirement
				Prior to fuel receipt for those elements of the RP Program necessary to support receipt and storage of fuel on-site Prior to fuel load for those elements of the RP Program necessary to support fuel load and plant operation Prior to first shipment of radioactive waste for those elements of the RP Program necessary to support shipment of radioactive waste	
	• Ground Water Monitoring Program	10 CFR 20.1406	12.5	Prior to fuel load	License Condition
11.	Non licensed Plant Staff Training Program	10 CFR 50.120 10 CFR 52.78	13.2.1	18 months prior to scheduled fuel load	10 CFR 50.120(b)
12.	Reactor Operator Training Program	10 CFR 55.13 10 CFR 55.31 10 CFR 55.41 10 CFR 55.43 10 CFR 55.45	13.2.1	18 months prior to scheduled fuel load	License Condition

RCOL2_13.04-1 S01

~~STD~~CP COL 13.4(1)

STD COL 13.6(1)

Table 13.4-201 (Sheet 6 of 9)

CTS-01140

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation	
				Milestone	Requirement
13.	Reactor Operator Requalification Program	10 CFR 50.34(b) 10 CFR 50.54(i) 10 CFR 55.59	13.2.1	Within 3 months after issuance of an operating license or the date the Commission makes the finding under 10 CFR 52.103(g)	10 CFR 50.54 (i-1)
14.	Emergency Planning	10 CFR 50.47 10 CFR 50, Appendix E	13.3	Full participation exercise conducted within 2 years of scheduled date for initial loading of fuel. Onsite exercise conducted within 1 year before the schedule date for initial loading of fuel. Detailed implementing procedures for emergency planning submitted no less than within 180 days prior to scheduled date for initial loading of fuel.	10 CFR 50, Appendix E.IV.F.2a(ii) 10 CFR 50, Appendix E.IV.F.2a(ii) 10 CFR 50, Appendix E.V.
15.	Security Program	10 CFR 50.34(c)			
	• Cyber Security Program	10 CFR 73.54	13.6	Prior to receipt of fuel on-site in the protected area	License Condition
	• Physical Security Program	10 CFR 73.55 10 CFR 73.56 10 CFR 73.57 10 CFR 26	13.6	Prior to receipt of fuel on-site in the protected area	License Condition

RCOL2_13.06.01-4
CTS-01140
RCOL2_13.06.01-4

~~STD~~CP COL 13.4(1)

STD COL 13.6(1)

Table 13.4-201 (Sheet 7 of 9)

Operational Programs Required by NRC Regulation and Program Implementation

CTS-01140

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation: Milestone	Implementation: Requirement
	• Safeguards Contingency Program	10 CFR 50.34(d) 10 CFR 73, Appendix C	13.6	Prior to receipt of fuel on-site in the protected area	License Condition
	• Training and Qualification Program	10 CFR 73, Appendix B	13.6	Prior to receipt of fuel on-site in the protected area	License Condition
16.	Quality Assurance Program Operation	10 CFR 50.54(a) 10 CFR 50, Appendix A (GDC 1) 10 CFR 50, Appendix B	17.5	30 days prior to scheduled date for the initial loading of fuel	10 CFR 50.54(a)(1)
17.	Maintenance Rule	10 CFR 50.65	17.6	Prior to fuel load authorization per 10 CFR 52.103(g)	10 CFR 50.65(a)(1)
18.	Motor-Operated Valve Testing	10 CFR 50.55a(b)(3)(ii)	3.9.6	Prior to Initial fuel load	License Condition
19.	Initial Test Program	10 CFR 50.34 10 CFR 52.79(a)(28)	14.2	Prior to the first construction test for the Construction Test Program Prior to the first preoperational test for the Preoperational Test Program Prior to Initial fuel loading for the Startup Test Program	License Condition
20.	Fitness for Duty Program ~~Construction Mgt & Oversight personnel~~	10 CFR ~~Part~~ 26 ~~10 CFR Part 26 A-H, N and O~~	~~13.7~~	~~Prior to on-site construction of safety or security related SSCs.~~	~~License Condition~~

RCOL2_13.06.01-4 CTS-01140

RCOL2_13.06.01-4 CTS-01140

RCOL2_NONE-2

~~STD~~CP COL 13.4(1)

Table 13.4-201 (Sheet 8 of 9)

CTS-01140

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation Milestone	Implementation Requirement
	~~Construction Workers & First Line Supv.~~	~~10 CFR 26 Subpart K~~	~~13.7~~	~~Prior to on-site construction of safety or security related SSCs.~~	~~License Condition~~
	~~Operations Phase Program~~ FFD Program for Construction (workers and first-line supervisors) FFD Program for Construction (management and oversight personnel)	~~10 CFR 26~~ 10 CFR 26.4(f) 10 CFR 26.4(e)	~~13.7~~ 13.7 13.7	~~Prior to fuel receipt~~ Prior to onsite construction of safety-or security-related SSCs Prior to onsite construction of safety-or security-related SSCs	~~License Condition~~ 10 CFR 26, Subpart K, or 10 CFR 26, Subparts A-H, N, and O 10 CFR 26, Subparts A-H, N, and O
	FFD Program for Security Personnel	10 CFR 26.4(e)(1) 10 CFR 26.4(a)(5)	13.7	Prior to fuel assemblies being received on site Prior to the earlier of: Licensee's receipt of fuel assemblies onsite or Establishment of a protected area or The 10 CFR 52.103(g) finding	10 CFR 26,Subparts A-H, N, and O 10 CFR 26, Subparts A-H, N, and O, with Subpart I
	FFD Program for FFD Program Personnel	10 CFR 26.4(g)	13.7	Prior to initiating 10 CFR 26 construction activities	10 CFR 26, Subparts A, B, D-H, N, O, and possibly C
	FFD Program for persons required to physically report to the TSC or EOF	10 CFR 26.4(c)	13.7	Prior to the conduct of the first full-participating emergency preparedness exercise under 10 CFR 50, App. E, Section F.2.a	10 CFR 26, Subparts A-H, N, and O, except for §§ 26.205-209

RCOL2_NONE-2

~~STD~~CP COL 13.4(1)

Table 13.4-201 (Sheet 9 of 9)

CTS-01140

Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR (SRP) Section	Implementation	
				Milestone	Requirement
	FFD Program for Operation	10 CFR 26.4(a) and (b)	13.7	Prior to the earlier of: Licensee's receipt of fuel assemblies onsite or Establishment of a protected area or The 10 CFR 52.103(g) finding	10 CFR 26, Subparts A-H, N, and O, except for individuals listed in § 26.4(b), who are not subject to §§ 26.205-209

RCOL2_NONE-2

13.6 SECURITY

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

STD COL 13.6(1) Replace the first paragraph in DCD Subsection 13.6 with the following:

The comprehensive physical security program is addressed in the Security Plan. The Security Plan consists of the physical security plan, training and qualification plan, the safeguards contingency plan. The Security Plan (provided in Combined License Application Part 8) and Cyber Security Plan are submitted to the NRC ~~as separate licensing documents~~ to fulfill the requirements of 10 CFR 52.79(a)(35) and 10 CFR 52.79(a)(36). The Security Plan and Cyber Security Plan meet the requirements contained in 10 CFR 26 and 10 CFR 73 and will be maintained in accordance with the requirements of 10 CFR 52.98. The Security Plan is categorized as security safeguards Information and is withheld from public disclosure pursuant to 10 CFR 73.21. RCOL2_13.06.01-1 CTS-01140 RCOL2_13.06.01-7

CP COL 13.6(2)

13.6.1 Physical Security – Combined License

Replace the content of DCD Subsection 13.6.1 with the following:

As stated above, the Security Plan and the Cyber Security Plan are submitted to the NRC ~~as separate licensing documents~~ to fulfill the requirements of 10 CFR 52.79(a)(35) and 10 CFR 52.79(a)(36). The site specific physical security features and capabilities that are beyond the scope of the certified standard plant design are described in the CPNPP Units 3 and 4 physical security plan (PSP) (Ref. 13.06-201), Appendix A of the High Assurance Evaluation Assessment (Ref. 13.06-7) and in Section 13.6.2 below. RCOL2_13.06.01-7 RCOL2_13.06.01-6

CP COL 13.6(2)

13.6.2 US-APWR Physical Security

RCOL2_13.06.01-1

Replace the second paragraph of DCD Subsection 13.6.2 with the following two paragraphs:

(SRI)

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
CTS-01140	14.2.11 14.2.12 14.2.12.1.112 14.2.12.1.113 14.2.12.1.114 14.2.13 Table 14.2-201 14.3.4.7 APPENDIX 14A	14.2-4 14.2-5 14.2-6 [14.2-7] 14.2-7 [14.2-8] 14.2-9 14.3-1 14A-1	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

progress. Schedule preparation will include an assessment of overlapping test program schedules between CPNPP Units 3 and 4 and provide assurance that CPNPP Unit 3 will be given priority during the period when testing and plant staff personnel will be working on both units. Periodic reviews of the schedules for CPNPP Units 3 and 4 will ensure that overlapping test program schedules do not result in significant divisions of responsibilities or dilutions of the staff implementing the test program. RCOL2_14.02-6

~~CP~~STD COL 14.2(7) Replace the third sentence of the last paragraph in DCD Subsection 14.2.11 with the following. CTS-01140

Preoperational tests which satisfy inspections, tests analyses, and acceptance criteria (ITAAC) test requirements, and ITAAC test requirements which can be incorporated into preoperational tests, are correlated in Table 14.2-202. This correlation is used to assure that ITAAC test requirements are included in the development of preoperational testing procedures.

14.2.12 Individual Test Descriptions

CP COL 14.2(10) Replace the first sentence of the last paragraph in DCD Subsection 14.2.12 with the following.

Testing outside the scope of the certified design is addressed in Subsections ~~14.2.12.1.112,~~ 14.2.12.1.113, and 14.2.12.1.114. Additional testing for the Fire Protection System Preoperational Test is identified in Subsection 14.2.12.1.90. Table 14.2-201 shows the comprehensive list for the new added subsections. CTS-01140

14.2.12.1 Preoperational Tests

STD COL 14.2(10) Add new item after item C.7 in DCD Subsection 14.2.12.1.90 as follows.

8. Verify that local offsite fire departments utilize hose threads or adapters capable of connecting with onsite hydrants, hose couplings, and standpipe risers.

Add new subsections after DCD Subsection 14.2.12.1.111 as follow.

~~STD COL 14.2(10)~~ **~~14.2.12.1.112 Personnel Monitors and Radiation Survey Instruments Preoperational Test~~** RCOL2_14.02.01-1 CTS-01140

~~A. Objective~~

1. ~~To demonstrate the operation, indication, and alarm functions of radiological personnel monitors and radiation survey instruments.~~ RCOL2_14.02-12

~~B. Prerequisites~~

1. ~~Required construction testing is completed.~~
2. ~~Test instrumentation is available and calibrated.~~
3. ~~Required support systems are available.~~
4. ~~Indicators, power supplies, and sensors have been calibrated as required in accordance with vendor instructions.~~ RCOL2_14.02-9 RCOL2_14.02-13 RCOL2_14.02-14

~~C. Test Method~~

1. ~~Performance of each monitor and survey unit is observed and recorded during individual component tests for each unit during calibration using standard radiation sources, including verification of all alarms, annunciators, and indicators, operation of bypass, interlock, permissive, self-test and loss of power functions, as applicable.~~

~~D. Acceptance Criterion~~

1. ~~Component and, where applicable, integrated testing demonstrates that each monitor or survey unit operates as specified by vendor technical information and plant procedures, including the following, as applicable:~~ RCOL2_14.02-9 RCOL2_14.02-13 RCOL2_14.02-14
   i. ~~Alarms, annunciators, and indicators.~~
   ii. ~~Bypass, interlock, permissive, self-test, and loss of power functions.~~

~~CP~~STD COL 14.2(10) **14.2.12.1.113 Ultimate Heat Sink (UHS) System Preoperational Test** CTS-01140

A. Objectives

1. To demonstrate operation of the UHS cooling towers and associated fans, essential service water (ESW) pumps, and UHS transfer pumps.

D. Acceptance Criteria

1. With the basin at minimum level (end of the 30 day emergency period), each ESW pump and UHS transfer pump maintain~~s~~ design flow rates. RCOL2_14.02-16

2. UHS transfer pumps ~~and associated interlocks~~operate as discussed in Subsection 9.2.5. RCOL2_14.02-16

3. UHS basin water level sensors and basin water level controls, and water chemistry monitors, controls, interlocks and associated blowdown equipment operate as discussed in Subsection 9.2.5.

4. ESWS maintains required flows and pressures while water is provided to the FSS as described in Subsection 9.2.1.3. RCOL2_14.02-15

~~CP~~STD COL 14.2(10)

14.2.12.1.114 UHS ESW Pump House Ventilation System Preoperational Test

CTS-01140

A. Objectives

1. To demonstrate operation of the UHS ESW pump house ventilation system.

B. Prerequisites

1. Required construction testing is completed.

2. Component testing and instrument calibration are completed.

3. Test instrumentation is available and calibrated.

4. Required support systems are available.

C. Test Method

1. Simulate interlock signals for each exhaust fan and unit heater and verify operation and annunciation.

2. Verify that alarms and status indications are functional.

3. Verify design airflow.

D. Acceptance Criteria

1. UHS ESW pump house ventilation system operates on the proper signal (see Subsection 9.4.5).

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) STD COL 14.2(7) ***14.2(7)*** *Initial test program schedule and cross-reference of test abstracts with ITAAC* CTS-01140

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*. CTS-01140

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

Table 14.2-201

Comprehensive Listing of Additional Tests

	Section	Test	
STD COL 14.2(10)	14.2.12.1.90.C.8	Local Fire Department Hose Thread Compatibility Tes	
~~STD COL 14.2(10)~~	~~14.2.12.1.112~~	~~Personnel Monitors and Radiation Survey Instruments Preoperational Test~~	CTS-01140
~~CP~~STD COL 14.2(10)	14.2.12.1.113	Ultimate Heat Sink (UHS) Preoperational Test	
~~CP~~STD COL 14.2(10)	14.2.12.1.114	UHS ESW Pump House Ventilation System Preoperational Test	

14.3 INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA

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

14.3.4.6 ITAAC for Electrical Systems

STD COL 14.3(1) Add the following paragraph as the last paragraph in DCD Subsection 14.3.4.6.

The ITAAC for the site-specific interfaces in the electrical systems are developed to correspond to Section 3.2 of Tier 1 of the referenced DCD. The site-specific interfaces are the offsite power system and the ITAAC for the interface requirement with the offsite power system is provided in Part 10 of the Combined License Application (COLA).

14.3.4.7 ITAAC for Plant Systems

~~CP~~STD COL 14.3(1) Replace the last paragraph in DCD Subsection 14.3.4.7 with the following. CTS-01140

The selection criteria and methodology provided in Section 14.3 of the referenced DCD are utilized as the site-specific selection criteria and methodology for ITAAC for site-specific systems. In general, the ITAAC for site-specific systems are developed to correspond to the interface requirements in Tier 1 of the referenced DCD. For those site-specific systems that do not have a safety function sufficiently significant to meet the selection criteria for ITAAC, the system is identified with the designation “No entry for this system”. ITAAC for the site-specific portion of the plant systems are provided in Part 10 of the Combined License Application (COLA). There are only two site-specific systems, the UHS system and ESWS (portions of the outside scope of the certified design) including the site-specific structures, and the UHS ESWS pump house ventilation system, which are addressed in Part 10 of the COLA.

APPENDIX 14A COMPARISON OF RG 1.68 APPENDIX A VERSUS US-APWR TEST ABSTRACTS

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

~~CP~~STD COL (10) Add the following text after the last sentence. CTS-01140

The added test abstracts in the Final Safety Analysis Report (FSAR) are correlated to Regulatory Guide (RG) 1.68 Appendix A in Table 14A-201.

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
RCOL2_02.03.04-11	15.0.3.3 15.0.4	15.0-1	Response to RAI No 158 Luminant letter TXNB-10048 Date 6/25/2010	Added *x*/Q information for TSC	-

*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 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.

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.	-
CTS-01140	17.0 17.1 17.2 17.4.8 17.4.9 17.5.1 17.6	17.1-1 17.2-1 17.4-4 17.5-1 17.6-1	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

*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.

17.0 QUALITY ASSURANCE AND RELIABILITY ASSURANCE

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

~~CP~~STD COL 17.5(1)

Add the following paragraph after the paragraph in DCD Section 17.0. CTS-01140

The Quality Assurance Program (QAP) described in Sections 17.1, 17.2, 17.3 and 17.5 is applicable for the site-specific design, construction and operation.

17.1 QUALITY ASSURANCE DURING THE DESIGN PHASE

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

~~CP~~STD COL 17.5(1)

Replace the last paragraph in DCD Section 17.1 with the following. CTS-01140

Quality Assurance (QA) for the site-specific design is described in Sections 17.3 and 17.5.

17.2 QUALITY ASSURANCE DURING THE CONSTRUCTION AND OPERATION PHASES

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

~~CP~~STD COL 17.5(1) Replace the paragraph in DCD Section 17.2 with the following. CTS-01140

QA for construction and operation is described in Sections 17.3 and 17.5.

The program of Phase III, the last phase of the D-RAP, will be established prior to the procurement, fabrication, construction, and pre-operational testing.

The O-RAP, which addresses the specific plant operation and maintenance activities, will be developed and implemented prior to the initial fuel loading by integrating the RAP activities into the specific plant operational program (Maintenance Rule, surveillance testing, in-service inspection, in-service testing and QA, as appropriate).

CP COL 17.4(1) Add the following new Subsection after the last paragraph in DCD Subsection 17.4.7.3.

17.4.7.4 Phase II D-RAP Implementation and SSCs included

The implementation of the Phase II D-RAP, as it applies to the design process, is the responsibility of Luminant. The SSCs included in Phase II are listed in Table 17.4-201.

17.4.8 ITAAC for the D-RAP

~~CP~~STD COL 17.4(1) Add the following paragraph after the last paragraph in DCD Subsection 17.4.8. CTS-01140

A list of the risk-significant SSCs for the Phase II D-RAP is provided in Table 17.4-201.

17.4.9 Combined License Information

Replace the contents of DCD Subsection 17.4.9 with the following.

CP COL 17.4(1)
STD COL 17.4(1) ***17.4(1)*** *Implementation of Phases II and III of the D-RAP* CTS-01140

This COL item is addressed in Subsections 17.4.3, 17.4.4, 17.4.7, 17.4.8, and Table 17.4-201.

CP COL 17.4(2) ***17.4(2)*** *Implementation of the O-RAP*

This COL item is addressed in Subsections 17.4.3, 17.4.4, 17.4.5, and 17.4.7.

17.5 QUALITY ASSURANCE PROGRAM DESCRIPTION

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

CP COL 17.5(1) Replace the last paragraph in DCD Section 17.5 with the following.

The implementation of the QAP for CPNPP Units 3 and 4 will transition, upon issuance of the COL and as project progresses, from the NuBuild QAPP to the "Comanche Peak Nuclear Power Plant Units 3 and 4 Quality Assurance Program Description." The QAPD is based on NEI 06-14A "Quality Assurance Program Description" (Reference 17.5-201) which was approved by the NRC.

17.5.1 Combined License Information

Replace the content of DCD Subsection 17.5.1 with the following.

CP COL 17.5(1)
STD COL 17.5(1)

17.5(1) *Development and implementation of the QAP for the site specific design activities (i.e., non-standard plant design) and for the construction and operation* CTS-01140

This COL item is addressed in Sections 17.0, 17.1, 17.2, 17.3 and 17.5.

17.5.2 References

CP COL 17.5(1) Add the following reference and Subsection 17.5.3 after the last reference in DCD Subsection 17.5.2.

17.5-201 *Quality Assurance Program Description,* NEI 06-14A, Revision 5, NEI, May 2008.

17.5.3 Evaluation of QAPD Against the SRP and QAPD Submittal Guidance

As described in Section 17.3 ~~of this Final Safety Analysis Report (FSAR), for design, construction and operation phases~~, Luminant will ~~utilize~~initially use the existing NRC approved QAP for CPNPP Units 1 and 2 for the engineering, procurement, and construction (EPC) phase. The QAP for CPNPP Units 1 and 2 is based on the guidance of ANSI/ASME N45.2-1971, "Quality Assurance Program Requirements for Nuclear Facilities" and its daughter standards. This differs from Standard Review Plan (SRP) Section 17.5 which is based on ASME RCOL2_17.05-8

17.6 DESCRIPTION OF THE APPLICANT'S PROGRAM FOR IMPLEMENTATION OF 10 CFR 50.65, THE MAINTENANCE RULE

~~CP~~STD COL 17.6(1) Replace the contents of DCD Section 17.6 with the following. CTS-01140

17.6.1 Combined License Information

17.6(1) *Implementation of the Maintenance Rule.*

This COL item is addressed in Section 17.6

17.6.2 Maintenance Rule Program

This subsection incorporates by reference NEI 07-02A, "Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed under 10 CFR Part 52," (Reference 17.6-201) which was approved by the NRC.

The text of the template provided in NEI 07-02A is generically numbered as "17.X" and "17.Y." When the template is incorporated by reference into this FSAR, section numbering is changed from "17.X" to "17.6.2" and from "17.Y" to 17.4."

Descriptions of the programs listed in Subsection 17.6.2.3 of NEI 07-02A are provided in the following Part 2 FSAR chapters/sections or Part 4:

- Maintenance Rule Program (Section 17.6)
- Quality Assurance Program (Chapter 17)
- Inservice Inspection Program (Sections 5.2 and 6.6)
- Inservice Testing Program (Sections 3.9 and 5.2)
- Technical Specifications Surveillance Test Program (Part 4)

17.6.3 Reference

17.6-201 *Generic FSAR Guidance for Maintenance Rule Program Description for Plants Licensed Under 10 CFR Part 52*, NEI 07-02A, Revision 0, NEI, March 2008.

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
RCOL2_19-9	19.1.5	19.1-8	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added second paragraph to identify LOOP events and what they are applied to.	-
RCOL2_19-9	19.1.5	19.1-8	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced “tornado-induced” with “tornado—induced.”	-
RCOL2_19-9	19.1.5	19.1-8	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added fifth paragraph to clarify F-scale intensity F1 and F2 scenarios for CDF calculations. Added sixth paragraph to clarify the assumption of plant switchyard damage for enhanced F-scale intensity F1 and F2 LOOP scenarios that lead to the RCP seal LOCA CDF. Replaced “Tornado strike-induced” with “Enhanced F-scale intensity of F3, F4, and F5 tornado strike-induced.”	-
RCOL2_19-9	19.1.5	19.1-8	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Revised eighth paragraph to clarify the wind speed range for plant switchyard damage by the tornado strike.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_19-9	19.1.5	19.1-8	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced "Reactor coolant pump (RCP) seal loss of coolant accident (LOCA)" with "RCP seal LOCA."	-
RCOL2_19-9	Table 19.1-201	19.1-12 [19.1-13]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added the following to Table 19.1-201 for tornado strike and exceedance frequency: Beyond design base enhanced F-scale tornado intensity, wind speed, strike frequency, and strike exceedance frequency.	-
RCOL2_19-11	Table 19.1-206	19.1-39 [19.1-51]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added statement to clarify operational procedures will be prepared for main control room water level basin monitoring.	-
RCOL2_19-11	Table 19.1-206	19.1-39 [19.1-51]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added statement to clarify operational procedures will be prepared for main control room water level basin monitoring.	-
RCOL2_19-11	Table 19.1-206	19.1-39 [19.1-51]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added Subsection FSAR 19.1.5.1 and Subsection DCD Tier 1 ITAAC #24	-
RCOL2_19-10	Table 19.1-206	19.1-39 [19.1-51]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added Subsection FSAR 9.5 and description identifying Owner Controlled Area procedural maintenance and vegetation clearance with the NFPA 1144 minimum setback distance.	-
RCOL2_19-11	19.1.5.1.1	19.1- 9 [19.1-10]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added Subsection 19.1.5.1.1 to describe the replacement of DCD Subsection 19.1.5.1.1 page 19.1-63 referring to the seismic margin analysis.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_19-11	19.1.5.1.2	19.1- 9 [19.1-10]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added Subsection 19.1.5.1.2 to describe the addition of a paragraph to DCD Subsection 19.1.5.1.2 page 19.1-73 referring to the confirmation of plant-specific HCLPFs using the design specific in-structure response.	-
RCOL2_19-12	19.1.4.1.2	19.1-3	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced "the basins can be effective in removing decay heat more than 24 hours" with "two basins are effective in removing decay heat for more than 24 hours without replenishment or transferring water from another basin."	-
RCOL2_19-13	19.1.9	19.1-11 [19.1-12]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added new Subsection 19.1-202 with the reference "*Climatology Models for Extreme Hurricane Winds Near the United States*. Thomas H. Jagger and James B. Elsner, January 19.2006." Added new Subsection 19.1-203 with the reference "*A Simple Empirical Model for Predicting the Decay of Tropical Cyclone Winds after Landfall*. John Kaplan and Mark Demaria. JOURNAL OF APPLIED METEOROLOGY, Volume 34. November, 1995."	-
RCOL2_19-13	Table 19.1-205 (Sheet 2 of 34)	19.1-17 [19.1-18]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added third paragraph to clarify which explosions will not affect the plant and why.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_19-13	Table 19.1-205 (Sheet 4 of 34)	19.1-19 [19.1-20]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added third paragraph to clarify which flammable vapor clouds cannot affect the plant and why.	-
RCOL2_19-13	Table 19.1-205 (Sheet 6 of 34)	19.1-21 [19.1-22]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added fifth paragraph to clarify why the main control room is habitable for toxic chemicals from mobile or stationary sources.	-
RCOL2_19-10	Table 19.1-205 (Sheet 7 of 34)	19.1-22 [19.1-23]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added to second paragraph description identifying Owner Controlled Area procedural maintenance and vegetation clearance with the NFPA 1144 minimum setback distance. Also, added to second paragraph the established distances of the Protected Area and security isolation zone to ensure no wildfire temperature that would affect the PRA's CDF.	-
RCOL2_19-13	Table 19.1-205 (Sheet 8 of 34)	19.1-22 [19.1-24]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added third paragraph describing what fire hazards and on-site fuel storage facilities cannot affect the plant and why.	-
RCOL2_19-13	Table 19.1-205 sheet 7 of 22 (9 of 34)	19.1-22 [19.1-25]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Revised first paragraph to clarify the role of the ESWS and CWS and explain that the intake structure is not safety related. Replaced Criteria value "3" with "1." Added second paragraph to clarify intake structure collision is of equal or lesser potential for which	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				the plant has been designed. Replaced third paragraph to clarify the effects of the accidental release of petroleum and why they would not affect the operation of the plant. Added fourth paragraph to clarify why liquid spills cannot affect the plant.	
RCOL2_19-10	Table 19.1-205 (Sheet 10 of 34)	19.1-23 [19.1-26]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Deleted description as follows: “The probability of aircraft related accidents for CPNPP Units 3 and 4 is less than an order of magnitude of 10^{-7} per year for aircraft, airway, and airport information reflected in Subsection 2.2.2.7.”	-
RCOL2_19-13	Table 19.1-205 (Sheet 10 of 34)	19.1-23 [19.1-26]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced first paragraph defining the probability of aircraft-related hazards for CPNPP Units 3 and 4.	-
RCOL2_19-10	Table 19.1-205 (Sheet 10 of 34)	19.1-23 [19.1-26]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added the explanation and formula/conclusion for nearby airports to the CPNPP site and the probability of an aircraft crashing into the plant, respectively.	-
RCOL2_19-10	Table 19.1-205 (Sheet 11 of 34)	19.1-23 [19.1-27]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added first paragraph clarifying the annual number of aircraft operations near CPNPP to explain the probability of aircraft-related hazards.	-
RCOL2_19-13	Table 19.1-205 (Sheet 11 of 34)	19.1-23 [19.1-27]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Deleted description as follows: “No potential site proximity missile hazards.” Replaced second paragraph clarifying potential site-proximity missile hazards and where they are identified. Added third paragraph	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				explaining that no site proximity missile hazard is identified.	
RCOL2_19-10	Table 19.1-205 (Sheet 12 of 34)	19.1-23 [19.1-28]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Deleted description as follows: "The probability of turbine failure resulting in the ejection of turbine rotor (or internal structure) fragments through the turbine casing, P1, as less than 10^{-5} per year. The acceptable risk rate P4 = P1 x P2 x P3 is therefore maintained as less than 10^{-7} per year." Replaced first paragraph clarifying that no postulated low trajectory turbine missiles from CPNPP Units 1 and 2 can affect CPNPP Units 3 and 4. Added second paragraph explaining, mathematically, the acceptable risk rate for the probability of turbine missile accidents.	-
RCOL2_19-13	Table 19.1-205 (Sheet 14through 16 of 34)	19.1-24 [19.1-30 through 19.1-32]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added paragraph explaining the determination of the possible hurricane frequency for the CPNPP site. Added paragraph describing background information of the tropical storm and hurricane history for the Texas coast in the past century. Added the formula provided by Kaplan and Demaria on calculating the tropical cyclone wind speed after landfall with a correction factor accounting for inland distance and a prediction	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
				for the upper bound of possible hurricane wind speed at the CPNPP site. Added paragraph describing the parameters for predicting the maximum possible wind speed (upper bound) at the CPNPP site. Added paragraph describing the history of hurricanes that came nearby the CPNPP site in the past 150 years, and paired with the upper bound wind speed to explain why hurricane winds can be screened out as not risk significant.	
RCOL2_19-13	Table 19.1-205 (Sheet 19 of 34)	19.1-26 [19.1-35]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced fourth paragraph clarifying that thunder storms cannot affect the plant and why	-
RCOL2_19-13	Table 19.1-205 (Sheet 19 of 34)	19.1-26 [19.1-35]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced sixth paragraph clarifying that lightning cannot affect the plant and why.	-
RCOL2_19-13	Table 19.1-205 (Sheet 20 of 34)	19.1-27 [19.1-36]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced second paragraph clarifying that hail cannot affect the plant and why.	-
RCOL2_19-13	Table 19.1-205 (Sheet 21	19.1-29 [19.1-37]	Response to RAI No. 166 Luminant Letter	Replaced second paragraph clarifying that air pollution is not a significant	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
	of 34)		no.TXNB-10046 Date 6/24/2010	site hazard and is less severe than the impact from toxic chemicals and why.	
RCOL2_19-13	Table 19.1-205 (Sheet 23 of 34)	19.1-30 [19.1-39]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added second paragraph clarifying that precipitation cannot affect the plant and why.	-
RCOL2_19-13	Table 19.1-205 (Sheet 23 of 34)	19.1-30 [19.1-39]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced fourth paragraph clarifying that dust storms cannot affect the plant and why.	-
RCOL2_19-13	Table 19.1-205 (Sheet 24 of 34)	19.1-32 [19.1-40]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added Subsection 3.3.1.1	-
RCOL2_19-13	Table 19.1-205 (Sheet 25 of 34)	19.1-32 [19.1-41]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Removed first paragraph. Replaced second paragraph describing the extreme winds' maximum wind speed and what potential hazards might exist from them. Added third paragraph clarifying that extreme winds are insignificant potential hazards.	-
RCOL2_19-13	Table 19.1-205 (Sheet 26 of 34)	19.1-33 [19.1-42]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced third paragraph clarifying that surface winds cannot severely affect the plant and why.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_19-10	Table 19.1-205 (Sheet 27 of 34)	19.1-34 [19.1-43]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced “788.9” with “793.66,” Criteria number “3” with “2,” and Frequency number “None” with “$< 10^{-7}$.”	-
RCOL2_19-10	Table 19.1-205 (Sheet 27 of 34)	19.1-34 [19.1-43]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced “4.56” with “4.59,” “793.46” with “810.64,” and “28” with “11.”	-
RCOL2_19-10	Table 19.1-205 (Sheet 27 of 34)	19.1-34 [19.1-43]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added second paragraph describing the Probable Maximum Precipitation (PMP) distribution to determine the Probable Maximum Flood (PMF).	-
RCOL2_19-10	Table 19.1-205 (Sheet 27 of 34)	19.1-34 [19.1-43]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added third paragraph outlining the scenarios for the PMP distributions.	-
RCOL2_19-10	Table 19.1-205 sheet 19 of 22 (Sheet 28 of 34 Sheet 29 of 34)	19.1-34 [19.1-44 19.1-45]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added paragraph describing the critical storm center within the Paluxy River watershed used to determine the resulting peak runoff and the water surface elevation. Added paragraph describing the calculation for the overall and areal frequency of a U.S. PMP event for 6 hours and 25 inches over 10 square miles. Added paragraph clarifying the frequency of a PMP of 25 inches over 10 square miles is projected to be well below 10^{-7} per year.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_19-10	Table 19.1-205 (Sheet 29 of 34)	19.1-34 [19.1-45]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced Criteria number “3” with “2” and Frequency number “None” with “< 10^{-7}.”	-
RCOL2_19-10	Table 19.1-205 (Sheet 29 of 34)	19.1-34 [19.1-45]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced “788.9” with “793.66.”	-
RCOL2_19-10	Table 19.1-205 (Sheet 29 of 34)	19.1-34 [19.1-45]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced “809.28” with “810.64” and “805” with “795.”	-
RCOL2_19-13	Table 19.1-205 (Sheet 29 of 34)	19.1-34 [19.1-45]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added fourth paragraph clarifying that probable maximum flood cannot affect the plant and why.	-
RCOL2_19-10	Table 19.1-205 (Sheet 30 of 34)	19.1-34 [19.1-46]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added first paragraph describing the coincident wind wave activity and its effects on Squaw Creek Reservoir. Added second paragraph describing the estimated frequency of a PMF capable of reaching plant grade elevation.	-
RCOL2_19-10	Table 19.1-205 (Sheet 31 of 34)	19.1-35 [19.1-47]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced first paragraph clarifying the elevation of CPNPP safety-related facilities and that they could not be affected by flooding.	-
RCOL2_19-13	Table 19.1-205 (Sheet 31 of 34)	19.1-35 [19.1-47]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added second paragraph clarifying that no safety related structures could be affected by flooding due to dam failures and why.	-
RCOL2_19-13	Table 19.1-205 (Sheet 32 of 34)	19.1-35 [19.1-48]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added third paragraph clarifying that surge and seiche flooding cannot affect the plant and why.	-

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_19-13	Table 19.1-205 (Sheet 32 of 34)	19.1-35 [19.1-48]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added fifth paragraph clarifying that tsunamis cannot affect the plant and why.	-
RCOL2_19-10	Table 19.1-205 (Sheet 33 of 34)	19.1-36 [19.1-49]	Response to RAI No. 165 Luminant Letter no.TXNB-10046 Date 6/24/2010	Replaced "788.9" with "793.66" and "30" with "28."	-
RCOL2_19-13	Table 19.1-205 (Sheet 33 of 34)	19.1-36 [19.1-49]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added third paragraph clarifying that ice effects cannot affect the plant and why.	-
RCOL2_19-13	Table 19.1-205 (Sheet 33 of 34)	19.1-36 [19.1-49]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added "(criterion 3)" clarifying why the UHS does not rely on or depend on certain water formations.	-
RCOL2_19-13	Table 19.1-205 (Sheet 34 of 34)	19.1-37 [19.1-50]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added "(criterion 3)" clarifying why channel diversion cannot adversely affect CPNPP Units 3 and 4 safety-related structures or systems.	-
RCOL2_19-13	Table 19.1-205 (Sheet 34 of 34)	19.1-37 [19.1-50]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added "(criterion 3)" clarifying why no safety-related facilities could be affected by low-flow or drought conditions.	-
RCOL2_19-13	Table 19.1-205 (Sheet 34 of 34)	19.1-37 [19.1-50]	Response to RAI No. 166 Luminant Letter no.TXNB-10046 Date 6/24/2010	Added paragraph 4 clarifying that ground water cannot affect the plant and why.	-
CTS-01140	19.1.1.4.1 19.1.4.2.2 19.1.5.2.2 19.1.5.3.2 19.1.6.2 19.1.7.1 19.2.5	19.1-1 19.1-4 19.1-9 [19.1-10] 19.1-10 [19.1-11] 19.2-1	Standardization	Changed LMN to STD and where needed, removed or replaced reference to CPNPP Units 3 and 4	4

Change ID No.	Section	FSAR Rev. 1 Page*	Reason for change	Change Summary	Rev. of FSAR T/R
	19.2.6.1 19.2.6.1.1 19.2.6.2 19.2.6.5 19.3.3	19.2-2 19.2-3 19.3-1			
DCD_19-426	19.1.7.6	19.1-11	Reflect Response to DCD RAI No. 564	Replaced “RTMS and SFCP” with “RTMS, SFCP and peer review”	4
DCD_19-426	19.3.3	19.3-1	Reflect Response to DCD RAI No. 564	Replaced “RTMS” with “RTMS and peer review”	4

*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.

19.1 PROBABILISTIC RISK ASSESSMENT

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

19.1.1.2.1 Uses of Probabilistic Risk Assessment in Support of Licensee Programs

---

CP COL 19.3(4) Replace the second paragraph in DCD Subsection 19.1.1.2.1 with the following.

The probabilistic risk assessment (PRA) is updated to assess site-specific information and associated site-specific external events. A systematic process is used to develop the site-specific PRA from the design certification PRA. This process includes the following activities:

- Identify any design changes or departures from the certified design.
- Map the design changes and departures onto specific PRA elements, recognizing that some design changes and departures may be unrelated to any PRA element.
- Develop screening criteria to determine which of the remaining design changes and departures should be included in the plant-specific PRA model. In cases where it can be shown that assumptions in the certified design PRA (1) bound certain site-specific and plant-specific parameters, and (2) do not have a significant impact on the PRA results and insights, no change to the design certification PRA is necessary. Similarly, certain changes or deviations from the certified design or the certified design PRA need not be reflected in the plant-specific PRA as long as it can be shown that (1) they are not important changes or deviations, and (2) do not have a significant impact on the PRA results and insights.

Site-specific information is reviewed to identify information related to the assumptions used in the PRA and having a potential effect on the PRA insights. Identification of the site-specific design is described in Table 1.8-1R in Section 1.8. These site-specific design issues, except essential service water system (ESWS) and ultimate heat sink (UHS), are considered having no potential influence to the results of the PRA. PRA screening assessment are shown in Subsections 19.1.4 through 19.1.6.

19.1.1.4.1 Uses of Probabilistic Risk Assessment in Support of Licensee Programs

---

~~CP~~STD SUP 19.1(1) Add the following text after the first paragraph in DCD Subsection 19.1.1.4.1. CTS-01140 described below are considered sufficient and applicable.

19.1.4.2.2 Results from the Level 2 PRA for Operations at Power

~~CP~~STD COL 19.3(4) Add the following text after the first sentence in DCD Subsection 19.1.4.2.2. CTS-01140

The only site-specific design that has potential effect on level 2 PRA is the site-specific UHS.

As is the case of the Level 1 PRA for operations at power (Subsection 19.1.4.1.2), modeling of the site-specific UHS results in small effect on the reliability of the component cooling water system (CCWS) for internal events. There is only small increase of CDF resulting from loss of CCW initiating events, also the contribution of total loss of CCW initiation event to the large release frequency (LRF) for operations at power is considered insignificant. It has been therefore determined that consideration of the site-specific UHS would have no discernible effect on the Level 2 PRA results that are based on the standard US-APWR design. Therefore, the results described below are considered sufficient and applicable.

19.1.5 Safety Insights from the External Events PRA for Operations at Power

CP COL 19.3(4) Replace the second and third paragraphs in DCD Subsection 19.1.5 with the following.

The last three events listed above receive detailed evaluation in the following subsections. The first four events are subject to the screening criteria consistent with the guidance of ANSI/ANS-58.21-2007, taking into consideration the features of advanced light water reactors.

The assessment of the other external events is provided below:

The screenings for other external events are performed using the following steps taking into consideration the features of advanced light water reactors. At first, qualitative screenings are performed because they are easy to obtain lower risk from advanced reactors design features or site characteristics. The qualitative screenings are performed using the analysis reported in Chapter 2 in accordance with the guidelines of ANSI/ANS-58.21-2007. Section 4.4 of the standard defined the initial preliminary screening criteria as supporting technical requirement EXT-B1. The five qualitative screening criteria are:

19.1.5.1.1 Descriptions of the Seismic Risk Evaluation

RCOL2_19-11

Replace the last sentence of the first paragraph after the first bullet "Selection of review level earthquake" in DCD Subsection 19.1.5.1.1 page 19.1-63 with the following.

The seismic margin analysis of the DCD is incorporated by reference although the RLE of CPNPP is less than the DCD RLE of 0.5g, which is 1.67 times the SSE (0.3g).

19.1.5.1.2 Results from the Seismic Risk Evaluation

RCOL2_19-11

Add a paragraph after the last paragraph in DCD Subsection 19.1.5.1.2 page 19.1-73 with the following.

The plant-specific HCLPFs of CPNPP Units 3 and 4 that are not less than 1.67 times SSE will be confirmed using the design specific in-structure response and the results of the stress analysis of the US-APWR standard design.

19.1.5.2.2 Results from the Internal Fires Risk Evaluation

~~CP~~STD COL 19.3(4) Add the following text at the beginning of DCD Subsection 19.1.5.2.2. CTS-01140

The only site-specific design that has potential effect on internal fires risk is the site-specific UHS.

Four-train separation is maintained in the site-specific UHS design. Modeling of the site-specific UHS shows a small effect on the reliability of CCWS for internal fire events. As was the case with the results of the Level 1 PRA for operations at power (Subsection 19.1.4.1.2), it has been determined that consideration of the site-specific UHS would have no discernible effect on the fire PRA results that are based on the standard US-APWR design. Therefore, the results described below are considered sufficient and applicable.

19.1.5.3.2 Results from the Internal Flooding Risk Evaluation

~~CP~~STD COL 19.3(4) Add the following text at the beginning of DCD Subsection 19.1.5.3.2. CTS-01140

The only site-specific design that has potential effect on internal flooding risk is the site-specific UHS.

Four-train separation is maintained in the site-specific UHS design. Modeling of the site-specific UHS shows a small effect on the reliability of CCWS for internal flooding events. As was the case with the results of the Level 1 PRA for operations at power (Subsection 19.1.4.1.2), it has been determined that consideration of the site-specific UHS would have no discernible effect on the internal flooding PRA results that are based on the standard US-APWR design. Therefore, the results described below are considered sufficient and applicable.

19.1.6.2 Results from the Low-Power and Shutdown Operations PRA

~~CP~~STD COL 19.3(4) Add the following text at the beginning of DCD Subsection 19.1.6.2. CTS-01140

The only site-specific design that has potential effect on low-power and shutdown risk is the site-specific UHS.

As was the case with the Level 1 PRA for operations at power (Subsection 19.1.4.1.2), modeling of the site-specific UHS shows a small effect on the reliability of CCWS for internal events. Considering the small increase of loss of CCW initiating event frequency, it has been determined, that consideration of the site-specific UHS would have no discernible effect on the low-power and shutdown (LPSD) results that are based on the standard US-APWR design. Therefore, the results described below are considered sufficient and applicable.

19.1.7.1 PRA Input to Design Programs and Processes

~~CP~~STD COL 19.3(4) Add the following text after the last sentence of DCD Subsection 19.1.7.1. CTS-01140

Site-specific key assumptions are summarized in Table 19.1-206.

19.1.7.6 PRA Input to the Technical Specification

CP COL 19.3(1) Replace the last paragraph in DCD Subsection 19.1.7.6 with the following.

The PRA needed for implementation of RMTS, ~~and~~ SFCP, and peer review will be available one year prior to fuel load. DCD_19-426

19.2 SEVERE ACCIDENT EVALUATION

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

19.2.5 Accident Management

~~CP~~STD COL 19.3(6)

Add the following text after the last paragraph in DCD Subsection 19.2.5. CTS-01140

An accident management program will be developed, in which severe accident management procedures that capture important operator actions described in the severe accident management framework are included. The accident management program will incorporate the instructions provided in NEI 91-04 Revision 1 (Reference 19.2-201). Development of emergency operating procedures is addressed in Subsection 13.5.2.1. Training requirements will also be developed as part of the accident management program addressed in DCD Section 18.9, and training for operators will be completed prior to first fuel load.

19.2.6.1 Introduction

~~CP~~STD COL 19.3(4)

Replace the content of DCD Subsection 19.2.6.1 with the following CTS-01140

This section is prepared using site-specific PRA information to consider potential design improvements as required under 10 CFR 50.34(f) and follows content guidance provided in NRC Regulatory Guide 1.206. Information for this section is from Subsections 7.2 and 7.3 of the Environmental Report, Part 3 of the Combined License (COL) Application.

19.2.6.1.1 Background

~~CP~~STD COL 19.3(4)

Add the following text after the last paragraphs in DCD Subsection 19.2.6.1.1. CTS-01140

Design or procedural modifications that could mitigate the consequences of severe accidents are known as severe accident mitigation alternatives (SAMAs). For design certification, SAMAs are known as severe accident mitigation design alternatives (SAMDAs), which focus on design changes and do not consider procedural modifications for SAMAs. For an existing plant with a well-defined design and established procedural controls, the normal evaluation process for identifying potential SAMAs includes four steps:

1. Define the base case -The base case is the dose-risk and cost-risk of severe accidents before implementation of any SAMAs. A plant's PRA is the primary source of data in calculating the base case. The base case risks are converted to a monetary value to use for screening SAMAs.

2. Identify and screen potential SAMAs - Potential SAMAs can be identified from the plant's individual plant examination (IPE), the plant's PRA, and the results of other plants' SAMA analyses. This list of potential SAMAs is assigned a conservatively low implementation cost based on historical costs, similar design changes, and/or engineering judgment, then compared to the base case screening value. SAMAs with higher implementation cost than the base case are not evaluated further.

3. Determine the cost and net value of each SAMA - A detailed engineering cost evaluation is developed using current plant engineering processes for each SAMA remaining after step 2. If the SAMA continues to pass the screening value, step 4 is performed.

4. Determine the benefit associated with each screened SAMA - Each SAMA that passes the screening in step 3 is evaluated using the PRA model to determine the reduction in risk associated with implementation of the proposed SAMA. The reduction in risk benefit is then monetized and compared to the detailed cost estimate. Those SAMAs with reasonable cost-benefit ratios are considered for implementation.

In the absence of a completed plant with established procedural controls, the current analysis is limited to demonstrating that a US-APWR located at the ~~CPNPP~~ site is bounded by the DCD analysis, and determining what magnitude of plant-specific design or procedural modifications would be cost-effective. Determining the magnitude of cost effective design or procedural modifications is the same as step 1, "Define base case," for operating nuclear plants. The base case benefit value is calculated by assuming that the current dose risk of the unit could be reduced to zero, then assigning a defined dollar value for this change in risk. Any design or procedural change cost that exceeds the benefit value would not be considered cost-effective. CTS-01140

The dose-risk and cost-risk results (Section 7.2 of the Environmental Report) are monetized in accordance with methods established in NUREG/BR-0184. NUREG/BR-0184 presents methods for determination of the value of decreases in risk by using four types of attributes: public health, occupational health, off-site property, and on-site property. Any SAMAs in which the conservatively low implementation cost exceeds the base case monetization would not be expected to pass the screening in step 2. If the baseline analysis produces a value that is below that expected for implementation of any reasonable SAMA, no matter how inexpensive, then the remaining steps of the SAMA analysis are not necessary.

(Note: Hereafter where the word "SAMDA" appears in the DCD, it is replaced with "SAMA" in the Final Safety Analysis Report (FSAR) without any further notification.)

19.2.6.2 Estimate of Risk for Design

~~CP~~STD COL 19.3(4)

Replace the last sentence of the first paragraph in DCD Subsection 19.2.6.2 with the following. CTS-01140

The second analysis is a Level 3 PRA analysis that integrates the Level 2 source term to quantify the consequences based on the CPNPP site.

CP COL 19.3(4)

Replace after the second sentence of the third paragraph in DCD Subsection 19.2.6.2 with the following.

In the offsite dose risk quantification, three years of site-specific meteorological data are used. The 50-mile population distribution data are based on the projected population for calendar year 2056.

The total population dose risk is 3.0E-01 person-rem/reactor-year, and the largest contributor is from RC5 - containment failure condition including overpressure failure after core damage, hydrogen combustion failure after core damage, hydrogen combustion long after reactor vessel failure and basemat melt-through (49 percent).

19.2.6.4 Risk Reduction Potential of Design Improvements

CP COL 19.3(4)

Replace the last sentence in DCD Subsection 19.2.6.4 with the following.

The maximum averted cost is $305k.

19.2.6.5 Cost Impacts of Candidate Design Improvements

~~CP~~STD COL 19.3(4)

Replace the first sentence in the last paragraph in DCD Subsection 19.2.6.5 with the following. CTS-01140

19.3 OPEN, CONFIRMATORY, AND COL ACTION ITEMS IDENTIFIED AS UNRESOLVED

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

19.3.3 Resolution of COL Action Items

Replace the content of DCD Subsection 19.3.3 with the following.

CP COL 19.3(1) ***19.3(1)*** *Update of PRA and SA evaluation for input to RMTS and peer review* DCD_19-426

This COL item is addressed in Subsection 19.1.7.6.

19.3(2) *Deleted from the DCD.*

19.3(3) *Deleted from the DCD.*

CP COL 19.3(4) STD COL 19.3(4) ***19.3(4)*** *Update of PRA and SA evaluation based on site-specific information* CTS-01140

This COL item is addressed in Subsections 19.1.1.2.1, 19.1.4.1.2, 19.1.4.2.2, 19.1.5, 19.1.5.2.2, 19.1.5.3.2, 19.1.6.2, 19.1.7.1, 19.2.6.1, 19.2.6.1.1, 19.2.6.2, 19.2.6.4, 19.2.6.5 and 19.2.6.6, Tables 19.1-201, 19.1-202, 19.1-203, 19.1-204, 19.1-205, 19.1-206 and 19.2-9R, and Figures 19.1-201 and 19.1-2R. CTS-01140 CTS-01140

19.3(5) *Deleted from the DCD.*

~~CP~~STD COL 19.3(6) ***19.3(6)*** *Accident management program* CTS-01140

This COL item is addressed in Subsection 19.2.5.

Luminant

Rafael Flores
Senior Vice President &
Chief Nuclear Officer
rafael.flores@luminant.com

Luminant Power
P O Box 1002
6322 North FM 56
Glen Rose, TX 76043

T 254.897.5590
F 254.897.6652
C 817.559.0403

CP-201001367
Log # TXNB-10072

Ref. # 10 CFR 52

October 11, 2010

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
ATTN: David B. Matthews, Director
Division of New Reactor Licensing

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4
DOCKET NUMBERS 52-034 AND 52-035
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION NO. 4957, 5027, AND 5052

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein the response to Request for Additional Information (RAI) No. 4957, 5027, and 5052 for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. The RAIs involve communications systems, ITAAC, and paleoliquifaction, respectively.

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

There are no commitments in this letter.

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

Executed on October 11, 2010.

Sincerely,

Luminant Generation Company LLC

RD/[illegible]

Rafael Flores for

Attachments:
1. Response to Request for Additional Information No. 4957 (CP RAI #178)
2. Response to Request for Additional Information No. 5027 (CP RAI #177)
3. Response to Request for Additional Information No. 5052 (CP RAI #179)

Electronic distribution w/attachments:

Rafael.Flores@luminant.com
mlucas3@luminant.com
jeff.simmons@energyfutureholdings.com
Bill.Moore@luminant.com
Brock.Degeyter@energyfutureholdings.com
rbird1@luminant.com
Allan.Koenig@luminant.com
Timothy.Clouser@luminant.com
Ronald.Carver@luminant.com
David.Volkening@luminant.com
Bruce.Turner@luminant.com
Eric.Evans@luminant.com
Robert.Reible@luminant.com
donald.woodlan@luminant.com
John.Conly@luminant.com
JCaldwell@luminant.com
David.Beshear@txu.com
Ashley.Monts@luminant.com
Fred.Madden@luminant.com
Dennis.Buschbaum@luminant.com
Carolyn.Cosentino@luminant.com
NuBuild Licensing files
Luminant Records Management (.pdf files only)

shinji_kawanago@mnes-us.com
masanori_onozuka@mnes-us.com
ck_paulson@mnes-us.com
joseph_tapia@mnes-us.com
russell_bywater@mnes-us.com
william_mcconaghy@mnes-us.com
mutsumi_ishida@mnes-us.com
nan_sirirat@mnes-us.com
nicholas_kellenberger@mnes-us.com
ryan_sprengel@mnes-us.com
katsunori_kawai@mnes-us.com
masaya_hoshi@mnes-us.com
rjb@nei.org
kak@nei.org
michael.takacs@nrc.gov
cp34update@certrec.com
michael.johnson@nrc.gov
David.Matthews@nrc.gov
Balwant.Singal@nrc.gov
Hossein.Hamzehee@nrc.gov
Stephen.Monarque@nrc.gov
jeff.ciocco@nrc.gov
michael.willingham@nrc.gov
john.kramer@nrc.gov
Brian.Tindell@nrc.gov
Alicia.Williamson@nrc.gov
Elmo.Collins@nrc.gov
Loren.Plisco@nrc.com
Laura.Goldin@nrc.gov
James.Biggins@nrc.gov
Susan.Vrahoretis@nrc.gov
ComanchePeakCOL.Resource@nrc.gov
sfrantz@morganlewis.com
jrund@morganlewis.com
tmatthews@morganlewis.com
regina.borsh@dom.com
diane.aitken@dom.com

Attachment 1

Response to Request for Additional Information No. 4957 (CP RAI #178)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 4957 (CP RAI #178)

SRP SECTION: 09.05.02 - Communications Systems

QUESTIONS for Instrumentation, Controls and Electrical Engineering 1 (AP1000/EPR Projects) (ICE1)

DATE OF RAI ISSUE: 9/9/2010

QUESTION NO.: 09.05.02-2

Title 10 CFR 52.79(a)(21) requires emergency plans complying with the requirements of 10 CFR 50.47 and 10 CFR 50, Appendix E. Title 10 CFR 52.79(a)(17) requires the submission of information with respect to compliance with technically relevant positions of the Three Mile Island requirements in 10 CFR 50.34(f). Title 10 CFR Part 50, Appendix E, Part IV.E(9)(d), 10 CFR 50.34(f)(2)(xxv), 10 CFR Part 50.47(a)(8) require, in part, provisions for offsite communications for the onsite operations support center. In the US-APWR DCD, Section 9.5.2.2.5.1, it states: “Plant offsite communications arrangements are site-specific and are described by the COL applicant.” In the Comanche Peak Units 3 and 4 FSAR, Section 9.5.2.2.5.2, "Emergency Communications," Luminant states that “The offsite communications systems within the onsite Technical Support Center and operations support center provide for emergency response following a design basis accident. During emergencies, the TSC is the primary onsite communications center for the communications to the control room, the operations support center, and the NRC.” Luminant does not specify which offsite communications systems are “within” the onsite operations support center. This is COL Item Number 9.5(8).

Luminant is requested to provide additional information regarding provisions for offsite communication capabilities for the onsite operations support center. If the communications provisions are not of a type already discussed in the application, please provide details regarding operation, power supply and backup capabilities.

ANSWER:

The Operations Support Center (OSC) is equipped with a Private Automatic Branch Telephone Exchange (PABX) system similar to that provided for the Technical Support Center (TSC) and the Emergency Operating Facility (EOF). This PABX telephone system is connected to the offsite commercial telephone system and provides voice and facsimile communications capability for normal and emergency communications between the control room, TSC, EOF, OSC, corporate offices, NRC, state agencies, and county Sheriff’s offices.

The TSC is the primary off-site and on-site communications center for communications with the control room, the OSC, and the NRC until the EOF is activated and operational. The primary purpose of the OSC is to provide a centralized area and necessary support resources for the assembly of designated operations support personnel during emergency conditions. Although equipped with a means to communicate with off-site agencies through the PABX telephone system, the OSC does not have off-site emergency communications responsibility.

The PABX system is powered from the plant non safety-related load group and consists of independent chargers and batteries for each PABX node. The batteries have the capability to operate the plant telephone system for approximately eight hours following loss of normal ac. The PABX power source is described in DCD Subsection 9.5.2.2.2.3.

In addition to the PABX system, the plant communication systems for the OSC include the public address system/plant page–party system, the plant radio system, and the sound powered telephone system.

A review of the regulatory sections identified in the question concluded that there are no requirements for off-site communications for the on-site OSC.

FSAR Subsection 9.5.2.2.5.2 has been clarified

<u>Impact on R-COLA</u>

See attached marked-up FSAR Revision 1 page 9.5-21.

<u>Impact on DCD</u>

None.

The offsite communications systems within the onsite Technical Support Center ~~and operations support center~~ provide for emergency response following a design basis accident. During emergencies, the TSC is the primary onsite communication center for the communications to the control room, the operations support center and the NRC. RCOL2_09.05.02-2

In addition, provisions for communication with state and local operations centers are provided in the onsite TSC to initiate early notification and recommendations to offsite authorities prior to activation of the EOF. This is in accordance with the requirements of 10 CFR 50 Appendix E, Part IV.E.9.

~~CP~~STD COL 9.5(5)
~~CP~~STD COL 9.5(6)
~~CP~~STD COL 9.5(9)

Replace sixth paragraph in DCD Subsection 9.5.2.2.5.2 with the following. CTS-01140

The emergency offsite communication system serves as an alternate means of communication to notify local authorities of an emergency at the nuclear plant. Radios are provided for communications with the main control room, TSC, EOF, and local authorities.

This emergency radio communications system connects onsite and offsite monitoring teams with the operation support center and EOF respectively.

The plant is provided with separate telephone systems for operations and for security pursuant to 10 CFR 73.55(f). Data Communications is discussed in Section 7.9. Fire brigade communications is covered in Subsection 9.5.1.

The ~~CPNPP~~ emergency plan and security plan are described in Sections 13.3 and 13.6, respectively. These plans require testing of offsite communications links. CTS-01140

9.5.2.3 Safety Evaluation

~~CP~~STD COL 9.5(7)

Add the following paragraph after the first paragraph in DCD Subsection 9.5.2.3. CTS-01140

Plant specific safety evaluations and procedures are established by the plant operator to prevent any unauthorized access to secure locations and or unconfirmed removal of strategic special nuclear material in accordance with 10 CFR 73.45(e)(2)(iii).

9.5.4.3 Safety Evaluation

Attachment 2

Response to Request for Additional Information No. 5027 (CP RAI #177)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 5027 (CP RAI #177)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/9/2010

QUESTION NO.: 14.03.07-32

Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Items 2.a and 2.b in Table A.3-1

The regulatory basis for this question is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

The NRC staff requested the applicant to revise these ITAAC for RAI question 14.03.07-10 (RAI Number 81 (3293) Question 13068) because the AC of both of these ITAAC refer to the "appropriate locations" for either flood barriers and water-tight doors instead of actual locations or locations as shown on figures or as indicated in tables. The applicant in its response, dated November 13, 2009, revised both ITAAC to perform an inspection to verify the existence of reports that indicate the locations of the flood barriers and water-tight doors. The staff agreed in part with the applicant’s response in that the exact locations of the flood barriers and water-tight doors can be identified in a report similarly to figures and tables. Nevertheless, it is the staff's position that the inspections for both ITAAC are of the as-built installations in order to verify the locations and integrity of both the flood barriers and water-tight doors for ITAAC Items 2.a and 2.b in Table A.3-1, respectively not for the existence of reports. The applicant is requested to provide a response that addresses the staff's concerns.

ANSWER:

The ITA for Items 2.a and 2.b have been revised to state that inspections of the as-built divisional flood barriers and water tight doors will be performed. This is consistent with the latest version of the DCD and the response to RAI No. 5004 (CP RAI #174) in letter TXNB-10067 dated October 6, 2010.

<u>Impact on R-COLA</u>

See attached marked-up COLA Part 10 Revision 1 page 31.

<u>Impact on DCD</u>

None.

Appendix A.3

Table A.3-1 (Sheet 1 of 3)
UHSRS, ESWPT and PSFSV Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria	
1. The structural configurations of the UHSRS, ESWPT and PSFSV are as described in Table A.3-2 as shown ~~in~~on FSAR Figures 3.8-201 through 3.8-214 ~~and Table A.3-2~~.	1. Inspections of the as-built structural configurations of the UHSRS, ESWPT and PSFSV will be performed.	1. The as-built ~~design configurations of the~~ UHSRS, ESWPT and PSFSV conform to the structural configurations as described in Table A.3-2 and as shown on ~~are reconciled with descriptions in~~ FSAR Figures 3.8-201 through 3.8-214 ~~and Table A.3-2~~.	RCOL2_14.03.07-9 RCOL2_14.03.07-9
2.a Divisional flood barriers are provided in the UHSRS, ESWPT and PSFSV to protect against the internal and external flooding.	2.a ~~An inspection will be performed to verify that the as-built divisional flood barriers exist in the UHSRS, ESWPT and PSFSV.~~An inspection of the as-built divisional flood barriers in the UHSRS, ESWPT, and PSFSV will be performed.	2.a A report exists and concludes that ~~T~~the as-built divisional flood barriers ~~exist at the appropriate locations~~conform with the design bases for the protection against internal and external flooding in the UHSRS, ESWPT and PSFSV ~~against the internal and external flooding~~.	RCOL2_14.03.07-10 RCOL2_14.03.07-32
2.b Water-tight doors are provided in the UHSRS, ESWPT and PSFSV to protect against the internal and external flooding.	2.b ~~An inspection of the as-built water-tight doors will be performed.~~An inspection of the as-built water-tight doors in the UHSRS, ESWPT, and PSFSV will be performed.	2.b A report exists and concludes that~~The~~ as-built water-tight doors ~~exist at the appropriate locations~~conform with the design bases for the protection against internal and external flooding in the UHSRS, ESWPT and PSFSV ~~against the internal and external flooding~~.	RCOL2_14.03.07-10
3. Penetrations in the divisional walls of the UHSRS, ESWPT and PSFSV, except for water-tight doors, are ~~provided appropriately against~~sealed up to the internal and external flooding levels.	3. An inspection of the as-built penetrations will be performed.	3. The as-built penetrations in the divisional walls of the UHSRS, ESWPT and PSFSV, except for watertight doors, ~~are installed at an acceptable level above the floor, and~~ are sealed up to the internal and external flooding levels.	RCOL2_14.03.07-11
4. For the UHSRS, ESWPT and PSFSV, external wall thicknesses are as indicated in Table A.3-2 below flood level ~~is provided~~ to protect against water seepage.	4. An inspection of the as-built external wall thickness for the UHSRS, ESWPT and PSFSV will be performed.	4. For the UHSRS, ESWPT and PSFSV, the as-built external wall~~s~~ thicknesses are as indicated in Table A.3-2 below flood level ~~are provided with adequate thickness~~ to protect against water seepage.	RCOL2_14.03.07-7

Attachment 3

Response to Request for Additional Information No. 5052 (CP RAI #179)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 5052 (CP RAI #179)

SRP SECTION: 02.05.01 - Basic Geologic and Seismic Information

QUESTIONS for Geosciences and Geotechnical Engineering Branch 1 (RGS1)

DATE OF RAI ISSUE: 9/10/2010

QUESTION NO.: 02.05.01-21

NUREG-0800, Standard Review Plan (SRP), Chapter 2.5.1, 'Basic Geologic and Seismic Information, establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

In your response to RAI No. 21 (3015) question 2.5.1-17, dated September 10, 2009, requesting a detailed description of field reconnaissance investigations of Quaternary-age deposits, you stated the following:

> Generally, all publicly accessible locations in and around the site area were visited in order to verify the accuracy of the site area map, to search for signs of deformation in bedrock and surficial outcrops, and to search for paleoliquefaction features.

The response states that “significant aerial extents” of Quaternary alluvium exist in the site area and that these locations were inspected during the field reconnaissance for evidence of liquefaction or deformation. The response also states that little information was gathered on these deposits during the field reconnaissance investigations because they are flat, highly vegetated and not observable in outcrop.

The staff reviewed the WLA “Field Reconnaissance Report” that you provided to the NRC (ADAMS Number ML092290416) but found no specific mention of localities targeted to investigate paleoliquefaction features in Quaternary alluvial deposits. The staff also reviewed the GPS track log of areas covered during the field investigations, but found it difficult to identify locations specifically targeted to investigate liquefaction features because those locations were not identified in the field logs.

Please provide more detailed documentation of the locations investigated to specifically search for paleoliquefaction features or deformation in Quaternary alluvial deposits. Did you specifically search for locations, where outcrops of these deposits might exist? In addition, please explain if any follow up investigations were conducted to further investigate the presence or absence of such features.

(a) Did you re-investigate aerial photographs for signs of sand blows or fissures, separate from the lineament analysis? If not, why? (b) Did you re-investigate Quaternary alluvial surfaces when water levels and vegetative growth were at a minimum? If not, why?

Reference: Luminant responses to RAI 3015 02.05.01-17, dated September 10, 2009 (ADAMS Number ML092820486)

ANSWER:

The field reconnaissance records in the WLA “Field Reconnaissance Report” (ML092290416) do not specify any locations targeted for liquefaction inspection because no locations were identified from the initial evaluation of the aerial photography. As shown on the track log plots on Figure 1, the Quaternary deposits were visited where public access was available. No evidence for seismically-induced liquefaction was noted during geologic field reconnaissance. However, it was noted that much of the Quaternary surfaces are highly vegetated and exposures are limited. No follow-up investigations were conducted after the two site area reconnaissance visits.

(a) Aerial photographs were re-investigated to search for signs of sand blows and fissures. Figure 1 shows the coverage area of aerial photographs evaluated. As shown in the table below, these photographs are black-and-white images acquired by the U.S. Geological Survey (USGS) and Texas Natural Resources Information Services (TNRIS) between 1942 and 1958, predating construction activities at the site. These photographs include both stereo-paired and oblique imagery. A few of these photographs show semi-circular areas of light-colored surface material that could be interpreted as possible evidence for surficial sand-blow deposits. However, these features are located in areas of active cultivation as well as Glen Rose Formation outcroppings where the material is not susceptible to liquefaction (limestone and shale) and the water table is deep. Taken together, the results from geologic field reconnaissance and evaluation of aerial photographs indicate the absence of seismically-induced liquefaction features within the site area and beyond.

Date	Source	Scale	Description	Frame Numbers
1/2/1948	TNRIS	1:20,000	Black-and-white, stereo-paired	CGT-1E-135 through CGT-1E-144 (71 through 80); CGT-1E-157 through CGT-1E-166 (98 through 108); CGT-1E-193 through CGT-1E-202 (125 through 134); CGT-2E-3 through CGT-2E-13 (150 through 160); CGT-2E-53 through CGT-2E-60 (197 through 204); CGT-2E-103 through CGT-2E-108 (241 through 246); CGT-2E-149 through CGT-2E-153 (286 through 290)
1/14/1948	TNRIS	1:20,000	Black-and-white, stereo-paired	CGT-3E-6 through CGT-3E-16 (45 through 55); CGT-3E-20 through CGT-3E-29 (174 through 183); CGT-3E-60 through CGT-3E-66 (219 through 225)
2/9/1948	TNRIS	1:20,000	Black-and-white, stereo-paired	CGT-3E-118 through CGT-3E-123 (264 through 269);

Date	Source	Scale	Description	Frame Numbers
No date	TNRIS	No Scale	Black-and-white, stereo-paired	1 through 2; 6 through 9; 17 through 21; 31 through 35; 45 through 52; 61 through 68; 75 through 83; 88 through 95; 100 through 106; 108 through 116
7/30/1958	USGS	1:22,180	Black-and-white, oblique	1B-122 through 1B-131; 1F-122 through 1F-131
7/31/1958	USGS	1:22,180	Black-and-white, oblique	2B-2 through 2B-12; 2B-31 through 2B-36; 2B-38 through 2B-43; 2B-45 through 2B-54; 2B-56 through 2B-58; 2B-71 through 2B-79; 2B-81 through 2B-85; 2F-2 through 2F-5; 2F-7 through 2F-12; 2F-31 through 2F-43; 2F-45 through 2F-58; 2F-71 through 2F-85
8/12/1958	USGS	1:22,180	Black and white, oblique	3B-26 through 3B-32; 3F-26 through 3F-32

(b) The Quaternary surfaces in the site area as shown on Figure 1 were not re-investigated due to observations made during the initial geologic field reconnaissance investigations and aerial photography review, neither of which provided evidence for seismically-induced liquefaction. Further, the sparse historical seismicity of the region does not indicate a strong potential for the existence of seismically-induced liquefaction features within the site area.

Attachment

Figure 1, Map of Quaternary geology, geologic field reconnaissance, and aerial photograph coverage of the site area and beyond.

Impact on R-COLA

None.

Impact on DCD

None.

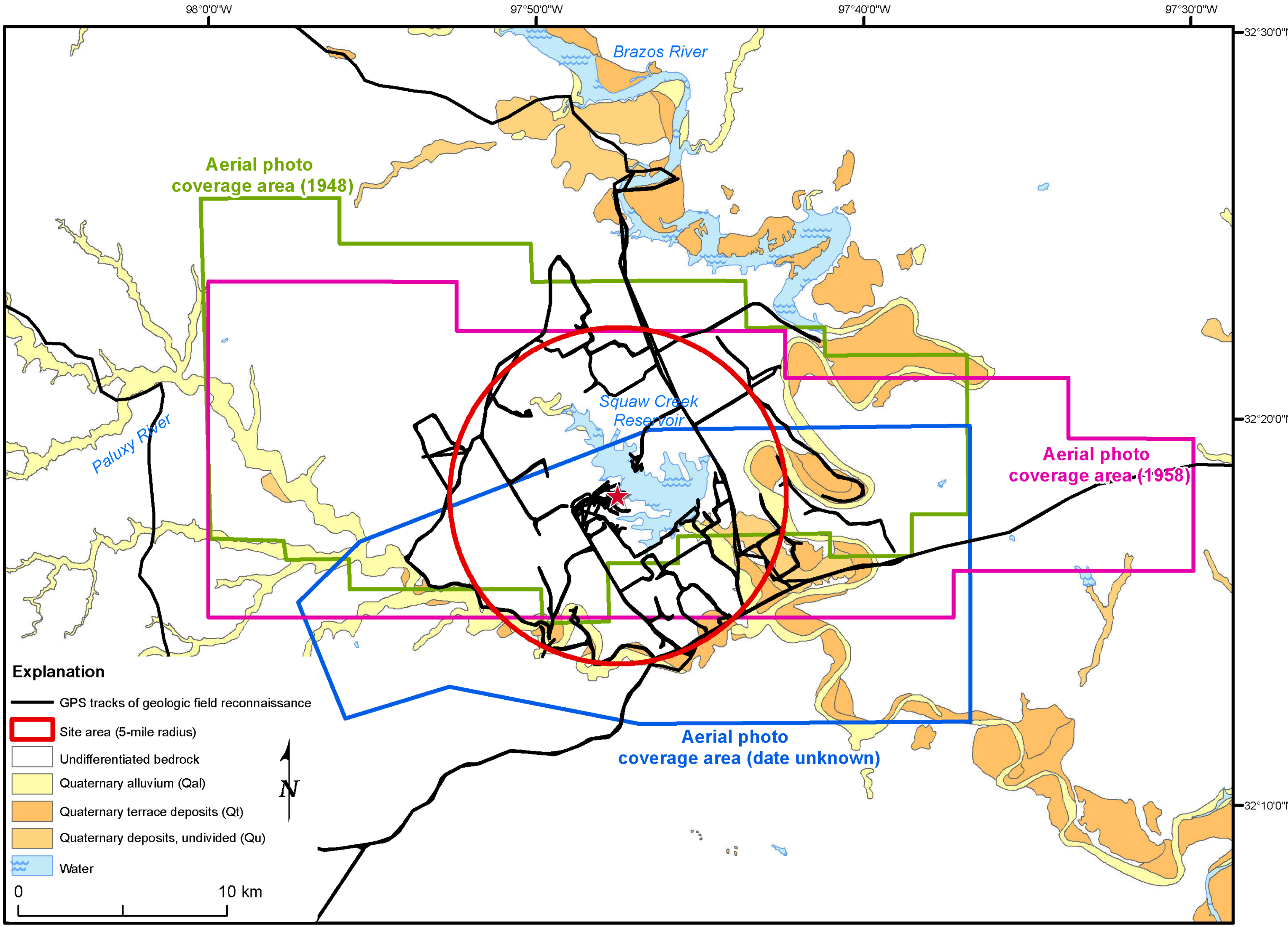


Figure 1. Map of Quaternary geology, geologic field reconnaissance, and aerial photograph coverage of the site area and beyond.