

PMComanchePeakPEm Resource

From: Conly, John [John.Conly@luminant.com]
Sent: Friday, February 18, 2011 5:06 PM
To: Aitken, Diane; Barrie, Ashley; Bell, Russ; 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; 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; 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 Hill, Craig
Cc:
Subject: Submittal to NRC
Attachments: TXNB-11009 RAI 196, 197.pdf

Luminant has submitted the attached response to RAIs 196 and 197 addressing the reliability assurance program and communications systems. If there are any questions regarding the response, please contact me or contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com).

Thanks,

John Conly

Luminant
COLA Project Manager
(254) 897-5256

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Hearing Identifier: ComanchePeak_COL_Public
Email Number: 1246

Mail Envelope Properties (D7A32D47A61872409CE74F57B83C8B011C99F12038)

Subject: Submittal to NRC
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Received Date: 2/18/2011 5:05:10 PM
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Files	Size	Date & Time
MESSAGE	954	2/18/2011 5:05:10 PM
TXNB-11009 RAI 196, 197.pdf		1799289

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
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CP-201100218
Log # TXNB-11009

Ref. # 10 CFR 52

February 18, 2011

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. 5312
(SECTION 17.4) AND NO. 5369 (SECTION 9.5.2)

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein the response to Request for Additional Information (RAI) No. 5312 (CP RAI #197) and No. 5369 (CP RAI #196) for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. The RAIs address the reliability assurance program and the communications systems, respectively.

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

One commitment is made in this letter and is tracked as Regulatory Commitment #8254:

"MHI will submit marked-up DCD Table 17.4-1 Sheets 28, 29, 43, and 44
as part of an RAI response by the end of February 2011."

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

Executed on February 18, 2011.

Sincerely,

Luminant Generation Company LLC

A handwritten signature in black ink, appearing to read "Rafael Flores", followed by the word "for" in a cursive script.
Rafael Flores

Attachments: 1. Response to Request for Additional Information No. 5312 (CP RAI #197)
2. Response to Request for Additional Information No. 5369 (CP RAI #196)

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Luminant Records Management (.pdf files only)

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.: 5312 (CP RAI #197)

SRP SECTION: 17.04 - Reliability Assurance Program (RAP)

QUESTIONS for PRA and Severe Accidents Branch (SPRA)

DATE OF RAI ISSUE: 1/18/2011

QUESTION NO.: 17.04-5

Based on COL Information Item 17.4(1) in Section 17.4.9 ("Combined License Information") of the US-APWR DCD, Revision 2, the structures, systems, and components (SSCs) in Phase II of the Design Reliability Assurance Program (D-RAP) should include the combination of site-specific risk-significant SSCs and risk-significant SSCs identified in the US-APWR DCD to form a complete list for the specific plant. This complete list of SSCs would be subjected to the D-RAP process in Phase III. However, Section 17.4.7.4 ("Phase II D-RAP Implementation and SSCs Included") of the Comanche Peak, Units 3 and 4 COL FSAR, Revision 1, states: "The SSCs included in Phase II are listed in Table 17.4-201." Also, Section 17.4.8 ("ITAAC for the D-RAP") of the COL FSAR states: "A list of the risk-significant SSCs for the Phase II D-RAP is provided in Table 17.4-201." But, Table 17.4-201 only lists the site-specific risk-significant SSCs (i.e., cooling tower fan[s]) and is not a complete list of risk-significant SSCs.

The staff requests that the applicant clarify in Sections 17.4.7.4 and 17.4.8 of the Comanche Peak, Units 3 and 4 COL FSAR that the SSCs included in Phase II of the D-RAP include the combination of site-specific risk-significant SSCs (i.e., SSCs listed in Table 17.4-201) and risk-significant SSCs identified in the US-APWR DCD (and modified for any departures) to form a complete list for the specific plant.

ANSWER:

FSAR Subsections 17.4.7.4 and 17.4.8 have been revised to clarify that the RAP SSCs included in Phase II of the D-RAP include components listed in DCD Table 17.4-1 in addition to the site specific components listed in FSAR Table 17.4-201. FSAR Subsection 17.4.7.4 has also been revised to identify standard content.

Impact on R-COLA

See attached marked-up FSAR Revision 1 page 17.4-4.

Impact on S-COLA

This response is considered to be standard.

Impact on DCD

None.

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

Phases II and III of the D-RAP occur before initial fuel load.

Phase II, the site-specific phase, introduces the site-specific design information to the D-RAP process.

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 STD COL
17.4(1)

Add the following new Subsection after the last paragraph in **DCD Subsection 17.4.7.3**.

RCOL2_17.0
4-5

17.4.7.4 Phase II D-RAP Implementation and SSCs included

~~The implementation~~Implementation of the Phase II D-RAP, ~~as it applies to the design process,~~ is the responsibility of Luminant site-specific. The SSCs included in Phase II are listed in Table 17.4-201 and DCD Table 17.4-1 (incorporated by reference).

RCOL2_17.0
4-5

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 and DCD Table 17.4-1 (incorporated by reference).

RCOL2_17.0
4-5

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.

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.: 5312 (CP RAI #197)

SRP SECTION: 17.04 - Reliability Assurance Program (RAP)

QUESTIONS for PRA and Severe Accidents Branch (SPRA)

DATE OF RAI ISSUE: 1/18/2011

QUESTION NO.: 17.04-6

From US-APWR DCD Tier 2, Revision 2, Section 9.2.1.2.2.1 ("ESWPs"), the essential service water pump (ESWP) motors are water cooled. The SSCs that provide cooling water to the ESWP motors are considered risk-significant in Table 17.4-1 of US-APWR DCD Tier 2, Revision 2, Section 17.4 (e.g., EWS-VLV-602A, B, C, D; EWS-VLV-601A, B, C, D; EWS-FT-070, 071, 072, 073; ESWP motor cooling line orifices, and ESWP cooling line in Table 17.4-1). However, based on Section 19.1.4.1.2 ("Results from the Level 1 PRA for Operations at Power") of the Comanche Peak, Units 3 and 4 COL FSAR, Revision 1, it is the staff's understanding that the ESWP motors for Comanche Peak 3 & 4 are air-cooled. As such, the risk-significant SSCs listed in Table 17.4-1 of the US-APWR DCD Tier 2 that provide cooling water to the ESWP motors may not be applicable to the Comanche Peak 3 & 4 design and, therefore, should not be included in the complete list of risk-significant SSCs for the plant. The staff considers the removal of these SSCs from Table 17.4-1 to be a departure from the US-APWR DCD, which was not identified in the COL FSAR. The staff requests that the applicant identify this departure in Section 17.4 of the Comanche Peak 3 & 4 COL FSAR; or otherwise provide a justification for not making this change.

ANSWER:

On September 24, 2010, MHI's response to DCD RAI No. 585-4464 Revision 0 (UAP-HF-10256), revised the DCD to clarify that the UHS and associated HVAC systems are not included in the US-APWR standard scope of design. Thus, the design of the ESW pumps is site-specific.

MHI has added the ESW pump room exhaust fans to DCD Table 17.4-1 as risk-significant SSCs, and has deleted the ESW pump cooling water lines and related equipment from the table as shown in the attached marked-up Sheets 28, 29, 43, and 44. MHI will submit these pages as part of an RAI response by the end of February 2011. The CPNPP Units 3 and 4 FSAR incorporates DCD Table 17.4-1 by reference and does not need to be revised in light of the revision to the DCD.

Impact on R-COLA

None.

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

Attachments

Excerpt from MHI Letter UAP-HF-10256 (three pages)

Marked-up DCD Table 17.4-1 Sheets 28, 29, 43, and 44

MITSUBISHI HEAVY INDUSTRIES, LTD.
16-5, KONAN 2-CHOME, MINATO-KU
TOKYO, JAPAN

September 24, 2010

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Jeffrey A. Ciocco

Docket No. 52-021
MHI Ref: UAP-HF-10256

Subject: MHI's Responses to US-APWR DCD RAI No. 585-4464 Revision 0

Reference: [1] "Request for Additional Information No. 585-4464 Revision 0, SRP Section: 09.02.01 – Station Service Water System - Design Certification and New License Applicants, Application Section: 9.2.1," dated May 10, 2010.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Response to Request for Additional Information No. 585-4464 Revision 0".

Enclosure 1 contains the responses to 28 questions in Reference [1].

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of the submittals. His contact information is below.

Sincerely,

 *Yoshiaki Kamakura*

Yoshiaki Ogata,
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosures:

1. Responses to Request for Additional Information No. 585-4464 Revision 0

Docket No. 52-021
MHI Ref: UAP-HF-10256

Enclosure 1

UAP-HF-10256
Docket No. 52-021

Responses to Request for Additional Information
No. 585-4464 Revision 0

September 2010

installation includes a site-specific portion of the facility. Contrary to this, Section 1.8 indicates that the standard scope of design for the US-APWR includes the entire nuclear island and all safety-related systems that would be required for constructing the plant at a site. Section 1.8 goes on to state that the standard site plan for US-APWR design certification is shown in Figure 1.2-1. However, it is not clear from Figure 1.2-1 what parts of the site plan are plant-specific (conceptual design) vs. what parts are within the scope of the certified design. Sections 1.2.1.6 and 1.8, and Figure 1.2-1 need to clearly distinguish what is within the scope of the standard plant design and what is not.

Answer: d)

The last two sentences in the 3rd paragraph of Tier 2 DCD Section 1.8 have been revised to correct the inconsistency between Section 1.8 and the statement in Section 1.2.1.6 as follows:

"This standard scope of design includes the entire nuclear island and all safety systems except the UHS and associated HVAC system that would be required for construction of the US-APWR at a nuclear power plant site. However, the cooling water intake and discharge structures and the ESWPT towards the intake and discharge structures are site specific. A The standard typical site plan for the US-APWR design included in this application for design certification is shown in Figure 1.2-1."

See also response to Question 09.02.01-32(e) below.

Question: e) For example, Table 1.8-1 indicates that portions of the ESWS outside the USAPWR buildings are outside the scope of the standard plant design. Based on this description, the ESW pumps, piping, pipe tunnel, valves, and instrumentation up to the point where the ESWS enters and exits the reactor and power source buildings are outside the scope of the US-APWR standard plant design. Because there is no way to distinguish CDI from SPDI, the descriptive information provided for the ESWS in Section 9.2.1 and shown on Figure 9.2.1-1 does not distinguish CDI from SPDI. This makes it difficult for the NRC staff and COL applicants to recognize what parts of the description are actually CDI that will need to be replaced by plant-specific information. This lack of clarity also makes it more difficult to properly identify interface requirements and COL information items that should be established. Therefore, the DCD needs to be revised to eliminate this confusion by providing a way to clearly distinguish CDI from SPDI.

Answer: e)

See above response (d).

The standard design portion of the ESWS are those components and piping within the R/B and PS/B and the components in the ultimate heat sink related structures (UHSRS) such as the ESW pump and pump discharge strainers, piping and valves. The design and physical layout of the essential service water pipe tunnel (ESWPT) piping is site specific and depends on the design of the UHS but whose existence is a standard design requirement. See also responses to Questions 09.02.01-33(f), 09.02.01-33(m), 09.02.01-33(n), 09.02.01-37, 09.02.01-38, and 09.02.01-39.

Tier 2 DCD Section 9.2.1 has been revised for clarity and to distinguish SPDI from CDI which are enclosed in brackets.

Tier 2 DCD Figure 9.2.1-1 has been revised to include CDI.

Question: f)

For example, Table 3.2-2 specifies classification information for all parts of the ESWS. However, for those parts of the ESWS that are not included within scope for the standard plant design, it's not clear to what extent and on what basis this information applies to the COL applicants. Furthermore, additional confusion is added by COL Information Items 3.2(4) and (5) which indicate that the COL applicant is to identify the classifications for site-specific SSCs without

Table 17.4-1 Risk-significant SSCs (sheet - 2845 of 44)

#	Systems, Structures and Components (SSCs)	Rationale ⁽¹⁾	Failure Mode ⁽²⁾	Insights and Assumptions
12	Heating, ventilation, and air conditioning (HVAC) system			
1	B,C-Emergency feedwater pump room fans [VRS-MFN-401B, C]	FV(FL1, FR2) RAW(FL1, FL1-CC, FR1, FR1-CC, FR2, FR2-CC), LP	AD, LR, SR	EFW M/D pump room fans maintain room temperature when pumps are running. EFW M/D pumps are assumed to be unavailable within the mission time without room cooling due to high room temperature. HVAC systems of other rooms are considered not to be risk significant for the following reasons. - HVAC of emergency gas turbine room Gas turbine units itself has function to intake outer air to remove heat out to atmosphere. Accordingly, HVAC is considered not essential to maintain gas turbine function. - HVAC of ESF room (RHR/CSS pump, SI pump) According to room temperature analysis, room temperature will not exceeds limit of the system during the mission time regardless of availability of HVAC. - HVAC of class1E electric power room (Class 1E I&C, switch gear, battery, battery charger) This system is running during normal operation and continues to run after initiating events. Reliability of normally operating HVAC systems are considered to be high and failure of this system is unlikely to occur during the mission time.
2	B,C-Emergency feedwater pump air handling unit [VRS-MAH-401B, C]	RAW(L1-CC, L2-CC)	AD, LR, SR	- HVAC of EFW T/D pump room Since T/D driven EFW pump room can operate under high room temperature conditions, they are assumed to be available regardless of room cooling during the mission time.

Table 17.4-1 Risk-significant SSCs (sheet - 2945 of 44)

#	Systems, Structures and Components (SSCs)	Rationale ⁽¹⁾	Failure Mode ⁽²⁾	Insights and Assumptions
3	ESW pump room exhaust fans	EJ	LR	Based on the assumption that the ESW pump motors are air-cooled, the ESW pump room ventilation system is included in this table. The ESW pump room ventilation system provides convection air cooling to ESW pump motors in the ESW room.
13	Containment fan cooler system			
1	Containment fan cooler units [VCS-MAH-001A (B, C, D)]	EP RAW(L2)	EL, PR	Temperature control of Containment Vessel atmosphere is judged important by experts from a point of view of keeping function of safety components in Containment Vessel.
14	Main control room HVAC system			
1	Main control room air handling units [VRS-MAH-101A (B, C, D)]	EP	FC	Temperature control of main control room atmosphere is judged important by experts from the viewpoint of operator habitability during an accident.
2	Air conditioner ducts	SM	SS	

Table 17.4-1 Risk-significant SSCs (sheet - 4345 of 44)

#	Systems, Structures and Components (SSCs)	Rationale ⁽¹⁾	Failure Mode ⁽²⁾	Insights and Assumptions
25		Essential service water system (ESWS)		
1	EWS pump discharge line check valves [EWS-VLV-502A (B,C,D)]	RAW(L1, L1-CC, L2,L2-CC, LP ,LP-CC, FL1, FL1-CC, FR1, FR1-CC, FL2, FR2, FR2-CC,)	EL,PR,OD	The essential service water system (ESWS) transfers heat from the CCW system as Ultimate Heat Sink (UHS). This system supports the CCW system, which supports various safety and non-safety mitigation systems. Accordingly, reliability of CCWS EFW system has significant impact on risk. Since ESWS consists of four independent trains, failure of one train does not have significant impact on risk. However, failures of SSCs that impact multiple trains have risk-significant impact on risk. Accordingly, SSCs that have potential to cause common cause failures among multiple trains are risk significant.
2	Essential service water pump motor cooling line check valves [EWS-VLV-602A (B,C,D)]	RAW(L1, L1-CC, L2,L2-CC, LP ,LP-CC, FL1, FL1-CC, FR1, FR1-CC, FL2, FR2, FR2-CC)	EL,PR,OD	
32	Essential service water pumps [EWS-MPP-001A (B,C,D)]	FV(L1-CC, L2-CC, LP-CC, FL1, FR1,-CC, FL2, FR2, FR2-CC) RAW(L1, L1-CC, L2, L2-CC, LP, LP-CC, FL1, FL1-CC, FR1, FR1-CC, FL2, FL2-CC,FR2, FR2-CC) SM	BD, YR, EL, SS, FS	
43	CCW heat exchanger inlet strainers [EWS-SST-003A (B, C, D)]	RAW(L1, L2, LP, FL1, FR1, FL2) LP	PR	
54	Essential service water pump outlet strainers [EWS-SST-001A (B,C,D)] [EWS-SST-002A(B,C,D)]	RAW(L1, L2, LP, L1, R2, L2)	PR	
6	Valves located in essential service water pump motor cooling line [EWS-VLV-601A(B,C,D)]	RAW(L1, 2, P, P,L1, R1, L2, R2)	EL,PR	

Table 17.4-1 Risk-significant SSCs (sheet - 4445 of 44)

#	Systems, Structures and Components (SSCs)	Rationale ⁽¹⁾	Failure Mode ⁽²⁾	Insights and Assumptions
7	ESW pump motor cooling line transmitters [EWS-FI-070(071,072,073)]	RAW(L1, L2, LP, FL1, FR1, FL2, FR2)	PR	
8	ESW pump motor cooling line orifices [EWS-SRO-002A (B, C, D)]	RAW(FL/FR) LP	PR	
59	Main piping orifices [EWS-FE-034(035, 036, 037)]	RAW(L1, L2, LP, FL1, FR1, FL2, FR2)/ SM	PR, SS	
649	ESW pump discharge line motor operated valves [EWS-MOV-503 A(B,C,D)]	RAW(L1, L2, LP, FL 1, FR1, FL2)	CM, EL, OD, PR,	

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.: 5312 (CP RAI #197)

SRP SECTION: 17.04 - Reliability Assurance Program (RAP)

QUESTIONS for PRA and Severe Accidents Branch (SPRA)

DATE OF RAI ISSUE: 1/18/2011

QUESTION NO.: 17.04-7

The applicant did not include the essential service water (ESW) room ventilation system in Table 17.4-201 of the Comanche Peak Units 3 and 4 COL FSAR, Revision 1, Section 17.4. Since the ESW pump motors are air cooled and considered risk-significant, it would suggest that the SSCs necessary to provide room ventilation for these pump motors are also risk-significant.

The staff requests that the applicant include in Table 17.4-201 of the Comanche Peak 3 & 4 COL FSAR, the risk-significant SSCs necessary to provide room ventilation for the ESW pump motors. Otherwise, provide the basis for not including these SSCs in Table 17.4-201 of the COL FSAR (include in the basis a discussion of the associated risk importance measures from the various PRA models, consideration of deterministic methods, e.g., defense-in-depth, and the expert panel's deliberation for not including these SSCs in RAP).

ANSWER:

See the response to Question 17.04-6.

Impact on R-COLA

None.

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

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.: 5312 (CP RAI #197)

SRP SECTION: 17.04 - Reliability Assurance Program (RAP)

QUESTIONS for PRA and Severe Accidents Branch (SPRA)

DATE OF RAI ISSUE: 1/18/2011

QUESTION NO.: 17.04-8

In RAI 17.04-2 the staff requested that the applicant list in Section 17.4.5 ("Integration into Existing Operational Programs") of the Comanche Peak 3 & 4 COL FSAR the "other" operational programs used for the integration of O-RAP and provide, if applicable, cross-references to the specific sections of the application where these programs are described. In a response to RAI 17.04-2, dated December 9, 2009, the applicant included operational programs such as maintenance rule, Quality Assurance, inservice inspection, inservice testing, and reactor vessel material surveillance programs. However, the applicant did not include the maintenance program and Technical Specifications surveillance test program. These programs are necessary to detect and mitigate degradation of a functioning system, structure, or component (SSC) or to restore to an acceptable level of performance the design functions of a failed SSC. Including these programs would be consistent with COL FSAR Section 17.6, which incorporates by reference NEI 07-02A. [Specifically, Section 17.X.3 of NEI 07-02A states: "Reliability during the operations phase is assured through the implementation of operational programs, i.e., the MR program, the Quality Assurance Program, inservice inspection and testing programs, the Technical Specifications surveillance test program, and maintenance programs.]"

The staff requests that the applicant also include under "other" operational programs in Section 17.4.5 of the COL FSAR the maintenance program and Technical Specifications surveillance test program, and provide, if applicable, cross-references to the specific sections of the application where these programs are described.

ANSWER:

FSAR Subsection 17.4.5 has been revised to include maintenance programs and Technical Specification surveillances.

Impact on R-COLA

See attached marked-up FSAR Revision 1 page 17.4-3.

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

Comanche Peak Nuclear Power Plant, Units 3 & 4
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17.4.5 Integration into Existing Operational Programs

CP COL 17.4(2) Add the following paragraphs after the last paragraph in **DCD Subsection 17.4.5**.

The O-RAP is integrated into the Maintenance Rule Program (Section 17.6), and other operational programs as listed below. The O-RAP SSCs are included in the high-safety-significant category within the scope of the Maintenance Rule Program. The Maintenance Rule Program incorporates the evaluation process of risk-significant SSCs, the maintenance of the reliability of risk-significant SSCs, and monitoring of the effectiveness of maintenance needed for reliability assurance. Industry operational experience will be used in the monitoring process to verify that reliability assumptions remain valid.

RCOL2_17.0
4-2

<u>Quality Assurance Program</u>	<u>FSAR Table 13.4-201, 17.5</u>
<u>Maintenance Rule Program</u>	<u>FSAR Table 13.4-201, 17.6</u>
<u>Inservice Inspection Program</u>	<u>FSAR 5.2, 6.1, 6.6, Table 13.4-201</u>
<u>Maintenance programs</u>	
<u>Technical Specification Surveillances</u>	<u>Technical Specifications, Part 4, 5.5.8</u>
<u>Inservice Testing Program</u>	<u>FSAR 3.9, 5.2, Table 13.4-201</u>
<u>Reactor Vessel Material Surveillance Program</u>	<u>FSAR 5.3, Table 13.4-201; ITAAC Part 10, 3</u>

RCOL2_17.0
4-2

RCOL2_17.0
4-8

RCOL2_17.0
4-2

The scope of the Maintenance Rule Program includes safety-related SSCs and certain nonsafety-related SSCs, as determined using a Maintenance Rule scoping procedure, consistent with SECY 95-132. Procurement, fabrication, construction, and test specifications for safety-related and nonsafety-related SSCs within the scope of the RAP are prepared and implemented under QAP referenced in Sections 17.1, **17.2**, **17.3**, and **17.5**. These elements of the QAPs provide adequate confidence that SSCs will perform satisfactorily in service and ensure that significant assumptions, such as equipment reliability, are realistic and achievable.

17.4.7 D-RAP

CP COL 17.4(1) Add the following paragraphs after the paragraph in **DCD Subsection 17.4.7**.
CP COL 17.4(2)

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.: 5369 (CP RAI #196)

SRP SECTION: 09.05.02 - Communications Systems

**QUESTIONS for Instrumentation, Controls and Electrical Engineering 1 (AP1000/EPR Projects)
(ICE1)**

DATE OF RAI ISSUE: 1/14/2011

QUESTION NO.: 09.05.02-3

Luminant is requested to add information provided in the response to Comanche Peak RAI Letter Number 178 with regards to the Comanche Peak COL FSAR.

10 CFR Part 50 Appendix E(IV)(E), 10 CFR 50.34(f)(2)(xxv), and 10 CFR Part 50.47(a)(8) require, in part, provisions for offsite communications for the onsite operations support center. Generic Letter 80-034 and NUREG-0696 explain NRC requirements for emergency response facilities and the NRC staff uses this guidance to evaluate whether an applicant meets the requirements of 10 CFR Part 50.

US-APWR Design Control Document (DCD), Section 9.5.2.2.5.1 states "Plant offsite communications arrangements are site-specific and are described by the COL applicant," and DCD Section 9.5.2.3 states "The off-site communications systems within the one-site [sic] operations support center provide for emergency response following a design basis accident." This is COL Item Number 9.5(8).

In response to RAI 4957 (CP RAI Letter No. 178), Luminant identified the Private Automatic Branch Telephone Exchange (PABX) telephone system as an offsite communications provision. Luminant states "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 Sheriffs offices. 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." Luminant is requested to add this information to the FSAR for the staff to develop its safety conclusion.

ANSWER:

The FSAR has been updated to include the NRC requested information.

Impact on R-COLA

See attached marked-up FSAR Revision 1 page 9.5-21.

Impact on S-COLA

None; the response is site-specific.

Impact on DCD

None.

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

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~~ 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_09.0
5.02-2

The Operations Support Center (OSC) is equipped with a PABX system similar to that provided for the TSC and the 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 MCR, TSC, EOF, OSC, Corporate Offices, NRC, State agencies and county Sheriff's offices. In addition to the PABX system, the plant communication systems for the OSC also include the public address system / plant page – party system, the plant radio system and the sound powered telephone system.

RCOL2_09.0
5.02-3

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.

CPSTD COL
9.5(5)
CPSTD COL
9.5(6)
CPSTD 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.

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.: 5369 (CP RAI #196)

SRP SECTION: 09.05.02 - Communications Systems

**QUESTIONS for Instrumentation, Controls and Electrical Engineering 1 (AP1000/EPR Projects)
(ICE1)**

DATE OF RAI ISSUE: 1/14/2011

QUESTION NO.: 09.05.02-4

Luminant is requested to rewrite a sentence in Section 9.5.2.2.2.2 of the COL FSAR to clarify the meaning of the information.

10 CFR 52.79(a)(2) requires "the descriptions shall be sufficient to permit understanding of the system designs and their relationship to the safety evaluations."

Section 9.5.2.2.2.2 of the FSAR includes the sentence "In emergency offsite communication, as the emergency notification system is connected through a local telephone company system, then a station package is required," which is unclear to the NRC staff. Luminant is requested to clarify this sentence.

ANSWER:

This section has been rewritten to clarify the discussion and remove the phrase "station package," which is used in IE Bulletin 80-15.

Impact on R-COLA

See attached marked-up FSAR Revision 1 page 9.5-19.

Impact on S-COLA

None; the response is site-specific.

Impact on DCD

None.

Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
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9.5.2.2.2 Private Automatic Branch Telephone Exchange (PABX)

CPSTD COL
9.5(4)
CPSTD 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

CPSTD 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**.

RCOL2_09.0
5.02-5

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**.

The Emergency Notification System (ENS) capability is part of the Federal Telecommunication System (FTS) independent phone link, with extensions in the Main Control Room (MCR), Technical Support Center (TSC) and Emergency Operations Facility (EOF). The FTS extensions in the MCR, TSC and EOF are all part of the emergency communications capability of the Private Automatic Branch Telephone Exchange (PABX).

RCOL2_09.0
5.02-5

~~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.~~The ENS is connected through a local telephone company system through a switch that is located and maintained at the site. Power is provided from a non-safety related uninterruptible power supply (UPS) system capable of operating in the event of a LOOP. The design provides for the ENS to remain functional from the site to the NRC Operations Center in the event of a LOOP at the site and complies with the requirements of IE Bulletin 80-15.

RCOL2_09.0
5.02-4

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.: 5369 (CP RAI #196)

SRP SECTION: 09.05.02 - Communications Systems

**QUESTIONS for Instrumentation, Controls and Electrical Engineering 1 (AP1000/EPR Projects)
(ICE1)**

DATE OF RAI ISSUE: 1/14/2011

QUESTION NO.: 09.05.02-5

Luminant is requested to add information provided in the response to Comanche Peak RAI Letter Number 34 with regards to the Comanche Peak COL FSAR.

10 CFR Part 50 Appendix E(IV)(E), 10 CFR Part 50.47(a)(8) require, in part, communication provisions for the Main Control Room (MCR), Technical Support Center (TSC) and Emergency Operations Facility (EOF).

In its response to RAI 2794 (CP RAI #34), Luminant stated "The CPNPP ENS capability is part of the Federal Telecommunication System (FTS) independent phone link, with extensions in the Main Control Room (MCR), Technical Support Center (TSC) and Emergency Operations Facility (EOF). The FTS extensions in the MCR, TSC and EOF are all part of the emergency communications capability of the Private Automatic Branch Telephone Exchange (PABX)."

Luminant is requested to add this information to the FSAR in order for the staff to develop its safety conclusion.

ANSWER:

The FSAR has been updated to include the requested information.

Impact on R-COLA

See attached marked-up FSAR Revision 1 page 9.5-19.

Impact on S-COLA

None; the response is site-specific.

Impact on DCD

None.

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

9.5.2.2.2 Private Automatic Branch Telephone Exchange (PABX)

CPSTD COL
9.5(4)
CPSTD 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

CPSTD 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.

RCOL2_09.0
5.02-5

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.

The Emergency Notification System (ENS) capability is part of the Federal Telecommunication System (FTS) independent phone link, with extensions in the Main Control Room (MCR), Technical Support Center (TSC) and Emergency Operations Facility (EOF). The FTS extensions in the MCR, TSC and EOF are all part of the emergency communications capability of the Private Automatic Branch Telephone Exchange (PABX).

RCOL2_09.0
5.02-5

~~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.~~The ENS is connected through a local telephone company system through a switch that is located and maintained at the site. Power is provided from a non-safety related uninterruptible power supply (UPS) system capable of operating in the event of a LOOP. The design provides for the ENS to remain functional from the site to the NRC Operations Center in the event of a LOOP at the site and complies with the requirements of IE Bulletin 80-15.

RCOL2_09.0
5.02-4