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November 26, 2012

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
SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION NO. 6403 (SECTION 14.3.7)

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein supplemental information for the response to Request for Additional Information (RAI) No. 6403 (CP RAI #254) for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. The supplemental information addresses freeze protection of the essential service water system.

This supplemental information completes Regulatory Commitment #8394 initiated on September 24, 2012 (ML12269A462). There are no new commitments in this letter.

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

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

Executed on November 26, 2012.

Sincerely,

Luminant Generation Company LLC

Donald R. Woodlan for

Rafael Flores

Attachment: Supplemental Response to Request for Additional Information No. 6403 (CP RAI #254)

D090
NRO

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SUPPLEMENTAL 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.: 6403 (CP RAI #254)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Balance of Plant and Technical Specifications Branch (BPTS)

DATE OF RAI ISSUE: 4/12/2012

QUESTION NO.: 14.03.07-38

Based on the staff's review of Comanche Peak Nuclear Power Plant Units 3 and 4, Revision 2, Part 10 - ITAAC, Appendix A.1, "Ultimate Heat Sink System (UHSS) and Essential Service Water system (ESWS) (Portions Outside the Scope of the Certified Design)," the applicant is requested to address the following items below.

1. Site-specific ITAAC should clearly describe testing of the UHS transfer pumps and associated MOVs from their various safety-related power supplies.

2. Site-specific ITAAC should clearly describe testing of the ESWS/UHS heat tracing.

3. Site-specific ITAAC should clearly describe testing of the ESWS/UHS freeze protection features (which may include operating the UHS fans in reverse speed).

4. Site-specific ITAAC should clearly describe and conclude that the UHS fans are designed to withstand the effects of design basis tornado differential pressure.

5. Site-specific ITAAC (see ITAAC #18) should clearly describe the UHS is capable of performing its safety function without exceeding the maximum temperature limit of the water in the UHS basin.

6. Site-specific ITAAC should clearly describe that the UHS spray nozzles and orifices are adequately designed with consideration for blockage. Note, US-APWR DCD 9.2.1.2.2 states that the ESWS strainer mess is 3 mm to assure that potential clogging of the cooling tower nozzles is avoided.

SUPPLEMENTAL INFORMATION:

The first paragraph of Section 2 of the first supplemental response (ML12269A462) is corrected as follows with the underlined text as new information:

2. FSAR Subsections 9.2.1 and 9.4.5 have been revised to address freeze protection for the ESW piping and UHS transfer piping that pass through the piping rooms that are between the pump house and the essential service water pipe tunnel (ESWPT). These piping rooms are heated by unit heaters in the UHS ESW pump house ventilation system, which prevents freezing of the ESW and UHS piping contained therein. Therefore, heat tracing is not applied for freeze protection. Furthermore, to ensure that heating is available, it is necessary to separate the rooms where UHS transfer piping is installed from the rooms where ESW piping is installed because the unit heaters in each room are powered by a different Class 1E power supply. Therefore, the piping room now includes a wall for separation of the ESW piping and the UHS piping.

   The layout of the ESW pump house was changed as shown in Attachment 2 of the supplemental response to RAI 6124 (CP RAI #243) (ML12243A456). A portion of the UHS transfer piping passes through the ESW pump room in the revised layout. It is necessary to provide separation for the UHS transfer piping in the ESW pump house consistent with the separation provided for the piping in the piping rooms. Therefore, the ESW pump house layout is revised so the UHS transfer piping does not pass through the ESW pump room.

   Site-specific inspection and testing for UHS ESW pump house ventilation system is already described in COLA Part 10 Table A.2-1 Item #4. This inspection and testing confirms that the ambient temperature in the piping rooms can be maintained above 40°F by the UHS ESW pump house ventilation system so that ESW and UHS transfer piping within each piping room will not freeze.

The following supplemental information is provided due to the correction above.

The unit heaters in the UHS ESW pump house ventilation system have been installed to prevent freezing of the ESW and UHS piping in the ESW pump house. The capacity of the unit heaters is shown in the attached FSAR Table 9.4-202 markup.

Increased load on the Class 1E GTG due to unit heater changes are within the GTG design capacity margin and do not affect the rated capacity of the GTG. FSAR Table 8.3.1-4R has been revised to reflect the changes in Class 1E GTG loading. The change of the capacity of the exhaust fans has no impact on the GTG capacity since the load is reduced slightly.

Impact on R-COLA

See attached marked-up FSAR Revision 3 pages 8.3-6, 8.3-7, 8.3-8, 8.3-9, and 9.4-12.

The following figures have been identified as requiring changes to reflect the revised layout. These figures will be revised as part of the work related to the Integrated Seismic Closure Plan (ML12268A413) and will reflect the layout changes described in this RAI response.

1.2-201	1.2-205	1.2-208	3.8-206	3.8-211
1.2-203	1.2-206	1.2-209	3.8-208	9A-201
1.2-204	1.2-207	1.2-210	3.8-209	

In addition, Figure 9.2.5-1R will be updated to reflect the revised layout and submitted with general arrangement Figure 3.8-206.

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

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

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
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
	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	-	-	-
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
STD COL 9.2(20)	Motor Control Centers (A&A1)	2						2	~~320~~	199	~~377~~	2	~~270~~	168	~~318~~	2	~~270~~	168	~~318~~
	Total								~~3771~~	2441	~~4485~~		~~3777~~	2095	~~4402~~		~~3637~~	2358	~~4337~~

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

328 → 3779 → 385 → 4503 → 278 → 3785 → 326 → 4410 → 278 → 3645 → 326 → 4345

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

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				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
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
	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	-	-	-
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
STD COL 9.2(20)	Motor Control Centers (B&A1)	2						2	~~320~~	199	~~377~~	2	~~270~~	168	~~318~~	2	~~270~~	168	~~318~~
	Total								~~4246~~	2736	~~5054~~		~~3386~~	1853	~~3842~~		~~2771~~	1821	~~3318~~

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

323 → 4249 → 380 → 5057 → 273 → 3389 → 321 → 3945 → 273 → 2774 → 321 → 3321

Comanche Peak Nuclear Power Plant, Units 3 & 4
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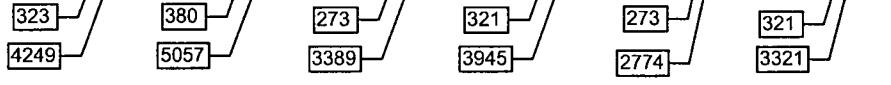
Table 8.3.1-4R (Sheet 3 of 4)

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
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
	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	-	-	-
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
STD COL 9.2(20)	Motor Control Centers (C&D1)	2						2	~~320~~	199	~~377~~	2	~~270~~	168	~~318~~	2	~~270~~	168	~~318~~
	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 4 of 4)

Electrical Load Distribution - Class 1E GTG Loading

D 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]
	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
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
	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	-	-	-
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
STD COL 9.2(20)	Motor Control Centers (D&D1)	2						2	~~320~~	199	~~377~~	2	~~270~~	168	~~318~~	2	~~270~~	168	~~318~~
	Total								~~3771~~	2441	~~4486~~		~~3777~~	2095	~~4402~~		~~3637~~	2358	~~4337~~
									328	385			278	326			278	326	
									3779	4503			3785	4410			3645	4345	

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

CP COL 9.4(6)

Table 9.4-202

UHS ESW Pump House Ventilation System Equipment Design Data

ESW Pump Room Exhaust Fan		
Number of Fans	4	
Equipment Class	3	
Seismic Category	I	
Airflow Capacity	~~57,000~~56,000 ~~cfm~~	RCOL2_09.0 4.05-23 S01
Fan Type	Propeller	
UHS Transfer Pump Room Exhaust Fan		
Number of Fans	4	
Equipment Class	3	
Seismic Category	I	
Airflow Capacity	~~4,000~~5,000 ~~cfm~~	RCOL2_09.0 4.05-23 S01
Fan Type	Propeller	
ESW Pump Room Unit Heater		
Number of Units	8 (2 per pump room)	
Equipment Class	3	
Seismic Category	I	
Capacity	~~24~~21 ~~kW~~	RCOL2_09.0 4.05-23 S01
UHS Transfer Pump Room Unit Heater		
Number of Units	4	
Equipment Class	3	
Seismic Category	I	
Capacity	10kW- train A, D 5kW- train B, C	RCOL2_09.0 4.05-23 S01
ESW Piping Room Unit Heater		RCOL2_14.0 3.07-38 S01
Number of Units	4	
Equipment Class	3	
Seismic Category	I	
UHS Transfer Piping Room Unit Heater		
Number of Units	4	
Equipment Class	3	
Seismic Category	I	
Capacity	5kW	