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October 6, 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. 5004, 5005, AND 5029

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein the response to Request for Additional Information (RAI) No. 5004, 5005, and 5029 for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. These RAIs involve Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC).

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 6, 2010.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

Rafael Flores

Attachments: 1. Response to Request for Additional Information No. 5004 (CP RAI #174)
2. Response to Request for Additional Information No. 5005 (CP RAI #175)
3. Response to Request for Additional Information No. 5029 (CP RAI #176)

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NRO

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Attachment 1

Response to Request for Additional Information No. 5004 (CP RAI #174)

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.: 5004 (CP RAI #174)

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

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/2/2010

QUESTION NO.: 14.03.07-29

The regulatory basis for this question is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 7 in Table A.1-1

In a previous RAI question (RAI Number 81 (3293), Question 14.03.07-5 (13063)), the staff stated that the phrase "heat removal capability transferred design heat load" referred to in the Design Commitment and AC was confusing, and requested the applicant to: (1) indicate what system removes the design heat load from the Emergency Service Water System (ESWS), (2) indicate that that system has the heat removal capability to transfer the design heat load from the ESWS, and (3) revise the nebulous term "adequate" referred to in both the Design Commitment and the AC. The applicant in its response addressed the changes requested by revising the (a) Design Commitment to state that the Ultimate Heat Sink (UHS) components referred to in Table A.1-2 are capable of removing the maximum heat load transferred from the ESWS, (b) Inspections, tests, analyses (ITA) by performing an inspection for the existence of a report, and (c) the AC by continuing to the refer to "adequate" heat removal capability of the UHS from ESWS while maintaining a UHS outlet temperature of 95 degrees Fahrenheit. The staff does not agree that the applicant has fully addressed its requested changes. The staff requests the applicant to make these further changes: (i) the ITA should be the performance of "tests and analyses" not the performance of an "inspection" to determine the heat removal capability of the UHS, and (ii) the AC should be changed to state that analyses and/or test reports exist and conclude that the UHS removes the maximum design heat load of the ESWS while maintaining an outlet temperature of 95 degrees Fahrenheit without using the term "adequate" to refer its heat removal capability.

ANSWER:

The ITA and AC for ITAAC Item 7 in Table A.1-1 have been revised as suggested by the NRC. The ITA has been revised to state that a combination of tests and analyses will be performed to determine the heat removal capability of the as-built UHS system. The AC has been clarified to state that a report exists and concludes that the UHS removes the maximum design heat load of the ESWS while maintaining an

outlet temperature of 95 degrees Fahrenheit. This language is chosen to be consistent with the DCD Tier 1 ITAAC.

Luminant has made similar changes to Table A.1-1 Item 5.b.ii and Table A.3-1 Items 5.a and 5.b.

Impact on R-COLA

See attached marked-up COLA Part 10 Revision 1 pages 13, 14, and 32.

Impact on DCD

None.

Appendix A.1

Table A.1-1 (Sheet 3 of 6)

Ultimate Heat Sink System and Essential Service Water System (Portions Outside the Scope of the Certified Design) Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria	
4.a The ASME Code Section III components, identified in Table A.1-2, retain their pressure boundary integrity at their design pressure.	4.a A hydrostatic test will be performed on the as-built components required by the ASME Code Section III to be hydrostatically tested.	4.a The results of the hydrostatic test of the as-built components identified in Table A.1-2 as ASME Code Section III conform to the requirements of the ASME Code Section III.	
4.b The ASME Code Section III piping, identified in FSAR Table 3.2-201, retains its pressure boundary integrity at its design pressure.	4.b A hydrostatic test will be performed on the as-built piping required by the ASME Code Section III to be hydrostatically tested.	4.b The results of the hydrostatic test of the as-built piping identified in FSAR Table 3.2-201 as ASME Code Section III conform to the requirements of the ASME Code Section III.	
5.a The seismic category I equipment, identified in Table A.1-2, ~~can~~is designed to withstand seismic design basis loads without loss of safety function.	5.a.i Inspections will be performed to verify that the seismic category I as-built equipment identified in Table A.1-2 is installed in the location identified in FSAR Table 3.2-201.	5.a.i The seismic category I as-built equipment identified in Table A.1-2 is installed in the location identified in FSAR Table 3.2-201.	RCOL2_.03.03-3
	5.a.ii Type tests and/or analyses of the seismic category I equipment will be performed.	5.a.ii The results of the type tests and/or analyses conclude that the seismic category I equipment can withstand seismic design basis loads without loss of safety function.	
	5.a.iii Inspections will be performed on the as-built equipment including anchorage.	5.a.iii The as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.	
5.b Each of the seismic category piping, including supports, identified in FSAR Table 3.2-201, is designed to withstand combined normal and seismic design basis loads without a loss of its ~~functional capability~~safety function.	5.b.i Inspections will be performed to verify that~~on~~ the as-built seismic Category I piping, including supports, identified in FSAR Table 3.2-201 are supported by a seismic Category I structure(s).	5.b.i Report(s) document that ~~E~~each of the as-built seismic ~~e~~Category I piping, including supports, identified in FSAR Table 3.2-201 ~~meets the~~is supported by a seismic ~~e~~Category I structure(s)~~requirements~~.	RCOL2_.03.03-4
	5.b.ii Inspections and analysis to verify that the as-built piping, including supports identified in FSAR Table 3.2-201 can withstand combined normal and seismic design basis loads without a loss of its safety function will be performed.	5.b.ii A report exists and concludes that each of the as-built seismic Category I piping, including supports, identified in FSAR Table 3.2-201 can withstand combined normal and seismic design basis loads without a loss of its safety function.	RCOL2_03.07-29

Appendix A.1

Table A.1-1 (Sheet 4 of 6)

Ultimate Heat Sink System and Essential Service Water System (Portions Outside the Scope of the Certified Design) Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria	
6.a The Class 1E components, identified in Table A.1-2, are powered from their respective Class 1E division.	6.a Tests will be performed on the as-built system by providing a simulated test signal only in ~~each~~ the Class 1E division under test.	6.a The simulated test signal exists at the as-built Class 1E equipment identified in Table A.1-2 under test in the as-built system	RCOL2_.03.07-2
6.b Separation is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.	6.b Inspections of the as-built Class 1E divisional cables ~~and raceways~~ will be ~~conducted~~performed.	6.b ~~The as-built Class 1E electrical cables with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division.~~Physical separation or electrical isolation is provided between the as-built cables of Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	RCOL2_.03.07-4
7. ~~The system provides adequate heat removal capability transferred design heat load from the ESWS.~~The UHS system is capable of removing the maximum design heat load transferred from the ESWS.	7. ~~Tests and analyses of the as-built system will be performed.~~Tests and analyses to determine the heat removal capability of the as-built UHS system will be performed.	7. ~~A report exists and concludes that the as-built system provides adequate heat removal capability transferred design heat load~~A report exists and concludes that the as-built UHS system removes the maximum design heat load transferred from the ESWS while maintaining a UHS outlet temperature ≤ 95°F..	RCOL2_.03.07-5 RCOL2_.03.07-2
8. Controls exist in the MCR to open and close the remotely operated valves identified in Table A.1-2.	8. Tests will be performed on the as-built remotely operated valves listed in Table A.1-2 using controls in the MCR.	8. Controls in the MCR operate to open and close the as-built remotely operated valves listed in Table A.1-2.	
9.a The remotely operated valves, identified in Table A.1-2 to perform an active safety-related, function to change position as indicated in the table.	9.a.i Tests or type tests of the valves will be performed that demonstrate the capability of the valve to operate under its design conditions.	9.a.i Each valve changes position as indicated in Table A.1-2 under design conditions.	
	9.a.ii Tests of the as-built valves will be performed under pre-operational flow, differential pressure, and temperature conditions.	9.a.ii Each as-built valve changes position as indicated in Table A.1-2 under pre-operational test conditions.	

Appendix A.3

Table A.3-1 (Sheet 2 of 3)
UHSRS, ESWPT and PSFSV Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria	
5.a Flood barriers of the UHSRS, ESWPT and PSFSV are installed ~~up to the finished plant grade level to protect against water seepage~~consistent with the design bases for flood protection.	5.a ~~An inspection of the as-built flood barriers will be performed.~~An inspection of the as-built flood barriers will be performed.	5.a ~~he as-built flood barriers are installed up to the finished plant grade level for the UHSRS, ESWPT and PSFSV to protect against water seepage~~A report exists and concludes that the as-built flood barriers of the UHSRS, ESWPT, and PSFSV are installed consistent with the design bases for flood protection..	RCOL2_14. 03.07-17 RCOL2_14. 3.07-29
5.b Flood doors and flood barriers penetrations of the UHSRS, ESWPT and PSFSV are provided consistent with the design bases for flood protection~~with flood protection features~~.	5.b ~~Inspections of the as-built flood doors and flood penetrations will be performed.~~An inspection of the as-built flood doors and flood penetrations will be performed.	5.b ~~For the UHSRS, ESWPT and PSFSV, the as-built flood doors and flood barrier penetrations are provided with flood protection features to protect against water seepage .~~A report exists and concludes that the as-built flood doors and flood barriers penetrations of the UHSRS, ESWPT and PSFSV are provided consistent with the design bases for flood protection.	RCOL2_14. 3.07-18 RCOL2_14. 3.07-29
6. Penetrations in the external walls, including those up to the subgrade level if necessary, of the UHSRS, ESWPT and PSFSV are ~~provided with flood protection features below~~sealed up to the external flood level.	6. An inspection will be performed to verify that ~~the flood protection features~~ of the as-built penetrations in the external walls of the UHSRS, ESWPT and PSFSV ~~exist below~~are sealed up to the external flood level.	6. The as-built penetrations in the external walls, including those up to the subgrade level if necessary, of the UHSRS, ESWPT and PSFSV are ~~provided with flood protection features below~~sealed up to the external flood level.	RCOL2_14. 3.07-12
7. Redundant safe shutdown components and associated electrical divisions of the UHSRS, ESWPT and PSFSV are separated by 3-hour rated fire barriers to preserve the capability to safely shutdown the plant following a fire. The 3-hour rated fire barriers are placed as required by the FHA.	7. An inspection of the as-built fire barriers will be performed.	7. Redundant safe shutdown components and associated electrical divisions of the as-built UHSRS, ESWPT and PSFSV are separated by 3-hour rated fire barriers to preserve the capability to safely shutdown the plant following a fire. The 3-hour rated as-built fire barriers are placed as required by the FHA.	

Attachment 2

Response to Request for Additional Information No. 5005 (CP RAI #175)

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.: 5005 (CP RAI #175)

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

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/2/2010

QUESTION NO.: 14.03.07-30

The regulatory basis is for this question is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Items 11 and 12 in Table A.1-1

The staff requested the applicant to revise ITAAC Items 11 and 12 and also Table A.1-3 in RAI question (RAI Number 81 (3293), Question 14.03.07-7 (13065)). The applicant in its response, dated November 13, 2009, made the following revisions: (a) ITAAC 11 in Table A.1-1 was revised to state that the Main Control Room (MCR) alarms and displays in Table A.1-3 can be retrieved, (b) ITAAC 12 in Table A.1-1 was revised to state that Remote Shutdown Console (RSC) alarms, displays, and controls identified in Table A.1-3 exist, and (c) Table A.1-3 was revised to correctly indicate all control functions, alarms, and displays in MCR and on RSC. The staff agreed with the majority of the applicant's response, but the staff did not agree with the following: (i) that MCR controls, displays, and alarms can be retrieved, and that RSC controls, displays, and alarms only exist, and (ii) inspections are being used to verify the proper functioning of controls. The staff requests that ITAAC Item 12 be revised to state that RSC controls, displays, and alarms can be retrieved at the RSC, and that both ITAAC Items 11 and 12 should be revised to require the performance of a combination of tests and inspections because inspections alone cannot verify the operation of controls.

ANSWER:

ITAAC Item 12 has been separated into two ITAAC, 12.a and 12.b. The DC for ITAAC Item 12.a has been revised to state that the RSC alarms and displays identified in Table A.1-3 can be retrieved on the RSC. The DC for ITAAC Item 12.b states that controls on the RSC operate the as-built pumps, fans, and valves identified in Table A.1-3. The ITA for ITAAC Item 12 has been separated to state that (a) inspection of the as-built alarms and displays will be performed, and (b) that tests will be performed on the RSC controls identified in Table A.1-3. Separate AC has been added for the tests in item 12b consistent with those for the MCR functions in ITAAC Items 8 and 10.a. This method is consistent with the latest DCD Tier 1 ITAAC.

Luminant has made similar changes to Table A.2-1 Item 7.

The DC for ITAAC Item 11 in Table A.1-1 does not specify control functions in the MCR. Instead the MCR control functions for the equipment identified in Table A.1-2 and repeated in Table A.1-3 are tested through ITAAC Items 8 and 10.a in Table A.1-1. This is consistent with the latest DCD Tier 1 ITAAC.

Impact on R-COLA

See attached marked-up COLA Part 10 Revision 1 pages15 and 23.

Impact on DCD

None.

Appendix A.1

Table A.1-1 (Sheet 5 of 6)

Ultimate Heat Sink System and Essential Service Water System (Portions Outside the Scope of the Certified Design) Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria	
9.b The valves identified in Table A.1-2 as having PSMS control.perform an active safety function after receiving a signal from PSMS.~~Upon the receipt of ECCS actuation signal or UHS basin low water level signal, the blowdown control valve closes automatically.~~	9.b Tests will be performed on the as-built valves in Table A.1-2 using a simulated test signal.	9.b The as-built valves identified in Table A.1-2 as having PSMS control perform the active function identified in the table after receiving a simulated signal.~~Upon the receipt of a simulated test signal, the as-built blowdown control valve closes automatically.~~	RCOL2_.03.07-6
9.c After loss of motive power, the remotely operated valves, identified in Table A.1-2, assume the indicated loss of motive power position.	9.c Tests of the as-built valves will be performed under the conditions of loss of motive power.	9.c Upon loss of motive power, each as-built remotely operated valve identified in Table A.1 -2 assumes the indicated loss of motive power position.	
10.a Controls exist in the MCR to start and stop the pumps and fans identified in Table A.1-3.	10.a Tests will be performed on the as-built pumps and fans in Table A.1-3 using controls in the MCR.	10.a Controls in the MCR operate to start and stop the as-built pumps and fans listed in Table A.1-3.	
10.b The pumps and fans identified in Table A.1-2~~3 start after receiving a signal.~~ as having PSMS control perform as active safety function after receiving a signal from PSMS.	10.b Tests will be performed on the as-built pumps in Table A.1-2 using simulated signal.	10.b The as-built pump and fan identified in Table A.1 -2~~3 start~~ as having PSMS control perform the active function identified in the table after receiving a simulated signal.	RCOL2_.03.07-6
11. MCR alarms and ~~D~~displays of the parameters identified in Table A.1-3 can be retrieved in the MCR.	11. Inspections will be performed for retrievability of the UHS system parameters in the as-built MCR.	11. ~~The~~MCR alarms and displays identified in Table A.1-3 can be retrieved in the as-built MCR.	RCOL2_.03.07-7
12.a ~~Remote shutdown console (RSC) displays and/or controls provided for the system are identified in Table A.1-3.~~RCS alarms and displays of the parameters identified in Table A.1-3 can be retrieved on the RSC.	12.a ~~Inspections will be performed on the as-built RSC displays and/or controls for the system.~~Inspections will be performed for retrievability of the UHS and ESWS alarms and displays identified in Table A.1-3 on the as-built RSC.	12.a ~~Displays and/or controls exist on the as-built RSC as identified in Table A.1-3.~~Alarms and displays identified in Table A.1-3 can be retrieved on the as-built RSC.	RCOL2_.03.07-7 RCOL2_.03.07-3
12.b Controls on the RSC operate the as-built pumps, fans and valves identified in Table A.1-3.	12.b Tests will be performed on the as-built pumps, fans and valves identified in Table A.1-3 using controls on the asbuilt RSC.	12.b Controls on the RSC operate to open and close the as-built remotely operated valves and to start and stop the as-built pumps and fans identified in Table A.1-3.	
13. Each UHS basin has a volume to satisfy the thirty day cooling water supply criteria.	13. Inspections will be performed to verify the as-built UHS basins include sufficient volume of water.	13. The water volume of the each as-built UHS basin is greater than or equal to 3.12 x 10^6 gallons.	RCOL2_.03.07-8

Appendix A.2

Table A.2-1 (Sheet 2 of 2)
UHS ESW Pump House Ventilation System
Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria	
4. The UHS ESW pump house ventilation system ~~provides and~~ maintains area design temperature limits ~~the proper environmental conditions with~~in the respective room.	4. Tests and analyses of the as-built UHS ESW pump house ventilation system will be performed for all four divisions.	4. The as-built UHS ESW pump house ventilation system ~~provides and maintains the proper environmental conditions~~is capable of maintaining area design temperature limits within the respective room ~~by the exhaust fan and/or unit heater operation~~.	RCOL2_ 14.03 07-1 RCOL2 14.03 07-15
5.a. Controls exist in the MCR to start and stop the UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-3.	5.a. Tests will be performed on the as-built exhaust fans and unit heaters identified in Table A.2-3 using controls in the as-built MCR.	5.a Controls exist in the as-built MCR ~~operate~~ to start and stop the as-built UHS ESW pump house ventilation system exhaust fan and unit heaters identified in Table A.2-3.	RCOL2_ 14.03. 07-16
5.b. The UHS ESW pump house ventilation system exhaust fans and unit heaters units identified in Table A.2-2~~3~~ as having PSMS control, perform as active safety function~~start~~ after receiving a signal from PSMS.	5.b. Tests of the as-built UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-2 will be performed using real or simulated signals.	5.b. The as-built UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-2~~3~~ as having PSMS control, perform an active safety function identified in the table ~~start~~ after receiving a simulated signal.	RCOL2_ 14.03. 07-6
6. MCR alarms and ~~D~~displays of the ~~UHS ESW pump house ventilation system~~ parameters identified in Table A.2-3 can be retrieved in the MCR.	6. Inspections will be performed for retrievability of the as-built UHS ESW pump house ventilation system parameters in the as-built MCR.	6. ~~The~~MCR alarms and displays identified in Table A.2-3 can be retrieved in the as-built MCR.	RCOL2_ 14.03. 07-7
7.a ~~Remote shutdown console (RSC) displays and/or controls provided for the UHS ESW pump house ventilation system are identified in Table A.2-3.~~RCS displays of the parameters identified in Table A.2-3 can be retrieved on the RSC.	7.a ~~Inspections will be performed on the as-built RSC displays and/or controls for the as-built UHS ESW pump house ventilation system.~~Inspections will be performed for retrievability of the displays identified in Table A.2-3 on the as-built RSC.	7.a ~~The displays and/or controls exist on the as-built RSC as identified in Table A.2-3.~~Displays identified in Table A.2-3 can be retrieved on the as-built RSC.	RCOL2_ 3.07-30
7.b Controls on the RSC operate the as-built fans and heaters identified in Table A.2-3.	7.b Tests will be performed on the as-built fans and heaters identified in Table A.2- 3 using controls on the as-built RSC.	7.b Controls on the RSC operate to energize and deenergize the as-built heaters and to start and stop the asbuilt fans identified in Table A.2-3.	

Attachment 3

Response to Request for Additional Information No. 5029 (CP RAI #176)

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.: 5029 (CP RAI #176)

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

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/2/2010

QUESTION NO.: 14.03.07-31

Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 6.a in Table A.1-1

The regulatory basis for this question is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

The NRC staff had requested the applicant to revise this ITAAC because the ITAAC is concerned with powering the equipment in Table A.1-2 by certain Class 1E divisions; however, the ultimate heat sink basin blowdown control valves in Table A.1-2 are not categorized according to their respective Class 1E division. The applicant in its response indicated that the valves in question are numbered the same as their respective instrument controllers, and that Figure A.1-1 indicates that the valves are aligned downstream of the respective ESW pumps, which have division designations. While the NRC staff understands the position taken by the applicant, the staff requests the applicant explain why these hydraulically controlled valves are classified by a Class 1E designation.

ANSWER:

The safety function of the blowdown valve is to isolate essential service water blowdown to prevent the loss of the UHS basin water inventory upon receipt of a low basin water level signal or emergency core cooling system actuation signal. To fully address the functions displayed on Table A.1-2, the valves as depicted on Table A.1-2 include both the valves and the controls for the valves.

A solenoid valve actuates to operate the pneumatic actuator for the blowdown control valve. Upon receiving the low basin water level signal, emergency core cooling system actuation signal, or upon loss of power, the solenoid valve vents the air supply from the actuator, which allows the control valve to shut and preserve basin water level. The blowdown control valve is a fail close valve so that failure of the air supply system or that of the valve itself brings it to its closed position. The LOOP sequence (or blackout sequence) signal also actuates the solenoid valve to close the blowdown control valve. The solenoid

valve, control circuit, and circuit power supply are classified as Class 1E to assure valve closure upon demand. As such, it is appropriate to reflect this Class 1E designation in Table A.1-2.

Impact on R-COLA

None.

Impact on DCD

None.