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CP-202300263
TXX-23042
June 15, 2023

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

Ref 10 CFR 50.90

Subject: Comanche Peak Nuclear Power Plant
Docket Nos. 50-445 and 50-446
Supplemental Information to Facilitate Acceptance of Licensee Amendment Request 23-002, Application Regarding GDC-5 Shared System Requirements

References:

1. Luminant letter from Jay Lloyd to U.S. NRC dated April 20, 2023, "License Amendment Request (LAR) 23-002, Application Regarding GDC-5 Shared Systems Requirements" (ADAMS Accession Number ML23110A156)

2. NRC letter from Dennis J. Galvin to Ken J. Peters dated May 31, 2023, "Comanche Peak Nuclear Power Plant, Unit Nos. 1 and 2 – Supplemental Information Needed for Acceptance of Requested Licensing Action Re: License Amendment Request Regarding General Design Criterion 5 of Appendix A to 10 CFR Part 50 and Regulatory Guide 1.81 (EPID L-2023-LLA-0058)" (ADAMS Accession Number ML23136B296)

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Vistra Operations Company LLC (Vistra OpCo) requested approval of a license amendment (LAR), per Reference 1. CPNPP is now submitting the enclosed supplemental information to facilitate the NRC acceptance of the previously submitted LAR, Application Regarding GDC-5 Shared Systems Requirements, as requested by the NRC in Reference 2.

The enclosure to this submittal provides a description and response to the requested information.

There are no new regulatory commitments made in this submittal.

Should you have any questions, please contact Ryan Sexton at (254) 897-6267 or ryan.sexton@vistracorp.com.

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

Executed on June 15, 2023.

Sincerely,

Jay Lloyd

Enclosure: Supplemental Requests and CPNPP Responses

c (email): Robert Lewis, Region IV [Robert.Lewis@nrc.gov]
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Enclosure to

TXX-23042

SUPPLEMENTAL REQUESTS AND CPNPP RESPONSES

SUPPLEMENTAL REQUESTS AND CPNPP RESPONSES

The Nuclear Regulatory Commission (NRC) has provided the following introduction and regulatory requirement as part of the supplemental request.

INTRODUCTION

By letter dated April 20, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23110A156, Vistra Operations Company LLC (Vistra OpCo, the licensee) submitted a license amendment request (LAR) for Comanche Peak Nuclear Power Plant (Comanche Peak, CPNPP), Unit Nos. 1 and 2, regarding changes to the Final Safety Analysis Report (FSAR). Specifically, the proposed amendments would allow a deviation in compliance to Regulatory Guide (RG) 1.81, Revision 1, "Shared Emergency and Shutdown Electric Systems for Multi-Unit Nuclear Power Plants" (ML003740343) to meet the regulatory requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix A, "General Design Criteria for Nuclear Power Plants, General Design Criterion (GDC) 5, "Sharing of structures, systems, and components," and address the violation issued in the Comanche Peak Integrated Inspection Report dated November 1, 2022 (ML22299A056). To support the proposed amendment, the licensee proposed FSAR changes to provide additional description of the power feeds to some common 125 volts direct current (VDC) and 118 volts alternating current (VAC) safety-related electrical buses, which can be fed from both units and also feeds some Unit 1 specific loads. The licensee also submitted Technical Specifications (TSs) Bases changes (mark-up) necessary to account for changes in the FSAR.

The U.S. Nuclear Regulatory Commission (NRC) staff has identified that the following information is needed to begin its technical review.

REGULATORY REQUIREMENT

Appendix A, to 10 CFR Part 50, GDC 5, states that:

> Structures, systems, and components important to safety [, including the onsite electric power supplies and distribution systems,] shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining units.

The regulations in 10 CFR 50.36, "Technical specifications," establish the requirements related to the content of the TS. Pursuant to 10 CFR 50.36(c), TS are required to include items in five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings, (2) limiting conditions for operation, (3) surveillance requirements, (4) design features; and (5) administrative controls.

The regulation, 10 CFR 50.36(a)(1), states that:

> Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section. A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not

become part of the technical specifications.

The following pages will provide the supplemental requests needed for acceptance of the LAR, and CPNPP response to each.

SUPPLEMENTAL INFORMATION REQUIRED

In the FSAR markup in attachment 1 of the enclosure to the LAR, the licensee provided the following justification corresponding to Regulatory Position C.2.d in RG 1.81 (the NRC staff notes the description of the FSAR change in section 2.3 of the enclosure to the LAR uses somewhat different wording):

> For AC [alternating current] electric systems, CPNPP has created the following administrative procedural requirement for XEC1-1 and XEC2-1, which power some Unit 1 safety-related loads, that the power source SHALL be aligned to Unit 1 during Unit 1 Modes 1 through 6. The panels power source alignment to Unit 2 will only be allowed when Unit 1 is in NO MODE. Since they only power Unit 1 loads this will not allow any interaction. *This requirement is being added to the FSAR, a markup of the FSAR is included in Attachment 1 to this letter*.
>
> For DC [direct current] electric systems XED1-1 and XED2-1, feed both Unit 1 and common components. Alignment to either unit provides an acceptable power source for Unit 1 components fed from the panels. An evaluation of being aligned from a Unit 2 power source coincident with a Unit 1 SI [safety injection] signal did not reveal any adverse impacts (i.e., no significant loss of safety function was identified). Evaluations confirmed that the power sources, from both units, feeding the common buses have sufficient capacity and capability to adequately feed all the common bus loads, as stated in the FSAR.

The LAR did not include the evaluations mentioned in the proposed FSAR. These are needed for the NRC staff to evaluate that the sharing of the above-mentioned AC and DC common buses would not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cool down of the remaining unit.

REQUEST 1

Provide an evaluation that provides the basis for the procedural requirement for 118 VAC buses XEC1-1 and XEC2-1, which power some Unit 1 safety-related loads, that the power source SHALL be aligned to Unit 1 during Unit 1 Modes 1 through 6. The power source alignment for these buses to Unit 2 will only be allowed when Unit 1 is in NO MODE.

RESPONSE

ISSUE

Unit specific components fed from two common AC buses, XEC1-1 and XEC2-1, with power source being able to be supplied by both units, have the ability to potentially create a situation where a component may be sharing power from the other unit. CPNPP has reviewed the

common safety-related AC buses and shown that all of these buses are UPS buses, and only Unit 1 specific components, in addition to common SSCs, are fed from these buses.

EVALUATION

To address GDC 5 requirements, the impact on performance of Unit 1 safety functions including safe shutdown, and orderly shutdown and cool down of Unit 1, if Unit 2 is feeding the Unit 1 component, is assessed for acceptability of Unit 2 being a power source for XEC1-1 and XEC2-1. The capabilities of Unit 1 are assessed assuming failure of Unit 2 power to feed Unit 1 component and the opposite train for Unit 1 is considered to have failed due to an event. Simply, it means that the train available for safe shutdown and orderly shutdown / cool down of Unit 1 is the train of power source from Unit 2 coincident with loss of Unit 2 power to the component.

Table 1, as seen on pages 4 to 6, evaluates the impact of Train A components fed from XEC1-1, and Table 2, as seen on pages 7 to 10, evaluates the impact of Train B components fed from XEC2-1. The evaluations show that, for some components, feeding the components from Unit 2 power sources may impact performance of components safety function with adverse impact on safe shutdown, and orderly shutdown and cool down of Unit 1.

CONCLUSION

Due to the results of these evaluations, XEC1-1 and XEC2-1 power source shall be aligned to Unit 1 while Unit 1 is in MODES 1 through 6. The panels power source alignment to Unit 2 will be allowed only when Unit 1 is in NO MODE (defueled).

TABLE 1

Evaluation of Unit 1 Components Fed from XEC1-1 (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-KXA/601A (Contacts 11-12, 13-14)	E1-0053-062 E1-0033-047 E1-0035-076 DBD-EE-057 (Sec. 5.3)	Safety Injection (SI) signal energizes the relay to allow Shunt trip to trip breakers MCC1EB1-2 and MCC1EB1-3 to isolate non-safety-related (N1E) motor control centers (MCC) from safety-related (1E) bus.	Relay remains de-energized. Breakers would not trip during an SI signal. Non-1E MCCs remain connected to Class 1E bus and Emergency Diesel Generator (EDG) after SI Actuation Signal (AS).	Impact Loss of 1E to N1E isolation function.	Impact Orderly shutdown of the plant may be potentially impacted due to un-analyzed load on Bus / EDG	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE.
1-KXA/601C (Contacts 1-2, 3-4)	E1-0053-062 E1-0033-047 E1-0061-019 E1-0061-020 M1-2253-008 M1-0253-A DBD-ME-255 (Sec 4.3.1.2.1.1)	SI signal energizes the relay to provide interruption of power signal to solenoids of Letdown Isolation Valves 1-LCV- 0459 and 1-LCV-0460. De-energized solenoids will close the valves.	Relay remains de-energized. Solenoid valves remain energized, and Valves remain open irrespective of SI signal. Loss of pressurizer relief tank protective function to prevent overfill of the tank on generation of SI signal.	Minimal Loss of function to prevent overfill of Pressurizer relief tank by SI signal.	None Loss of SI signal to close Letdown Isolation Valves does not affect the shutdown / cool down capability of operating Unit 1.	Impact The system is required to be isolated by containment isolation Phase A, for Loss of Coolant Accident (LOCA). (DBD-ME-255 Sec. 5.2.1, Table 7-1). However, failure of pressurizer relief tank protective feature by SI signal may cause system not to be isolated and safe shutdown may be adversely impacted.	Feeding the relay from Unit 2 power source is not acceptable. Alignment to Unit 2 source should only be when Unit 1 is in NO MODE.
1-KXA/601C (Contacts 13-14, 15-16)	E1-0053-062 E1-0033-047 E1-0057-012 E1-0057-014 M1-2305-004	SI signal energizes the relay to provide start signal for Battery Room 1-1(A) Exhaust Fan-07 Battery Room 1-1(A) Exhaust Fan-08	Relay remains de-energized SI signal will not be available to assure fan start irrespective of blackout signal (BOS) or LO pressure.	Impact Loss of function to assure fan start on SI signal	None Loss of SI signal to start either fan does not affect the shutdown/cool down capability of operating Unit 1.	Impact Safe shutdown of the plant may be impacted.	Feeding the relay from Unit 2 power source is not acceptable. However, alignment to Unit 2 source should only be when Unit 1 is in NO MODE.

Evaluation of Unit 1 Components Fed from XEC1-1 (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-KXA/601D (Contact 7-8)	E1-0053-62 E1-0037-017	SI signal energizes the relay to trip CP1-AFAPCT-01 contactor.	Relay remains de-energized. SI signal will not be available to trip the non-1E motor.	Impact Loss of 1E to N1E isolation function due to 1-KXA/601A failure to trip MCC 1EB1-3.	Impact Orderly shutdown of the plant may be potentially impacted due to un-analyzed load on Bus / EDG.	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE
1-HX/5684	E1-0053-079 E1-0053-007 E1-0053-008 M1-2302-003 M1-2302-008	Start of either fan CP1-VAAUSE-17 or -18 energizes the relay to provide trip signal for Electrical Area Air Supply Fan CP1-VAFNAV-15 / Electrical Area Air Supply Fan CP1-VAFNAV-16	Relay remains de-energized. Fans would not shut off when either emergency ventilation fans CP1-VAAUSE-17 or 18 started by BOS or Safety Injection System (SIS) signal.	Impact Both normal and emergency fans may continue to run at the same time.	None Normally emergency fans are not running. No impact on orderly shutdown/cool down capability of operating Unit 1.	Impact Running of both normal and emergency fans may impact safe shutdown of Unit 1.	Feeding the relay from Unit 2 power source is not acceptable. However, alignment to Unit 2 source should only be when Unit 1 is in NO MODE.
1-KXA/0147A (Contacts 1-2)	E1-0033-069 E1-0031-057 E1-0018-001F	SIS signal energizes the relay to provide trip signal for space heaters.	Relay remains de-energized. SIS signal to trip Heater will not be generated.	None Review of design information shows these heaters are disconnected (Ref. NCR-88-1884 and CR-2019-004441)	None	None	Feeding the relay from Unit 2 power source is acceptable.
1-KXA/0147B (Contacts 1-2, 3-4)	E1-0033-069 E1-0033-043 DBD-EE-057 (Sec. 5.3)	SIS signal energizes the relay to provide trip signal to isolate N1E Instrument Air Compressor from 1E bus and prevent manual closing of Breaker 1CIC01	Relay remains de-energized. Breaker will not trip on an SI signal Breaker could be closed, if open, during an SI signal.	Impact Loss of 1E to N1E isolation function.	Impact Orderly shutdown of the plant may be potentially impacted due to un- analyzed load on Bus / EDG	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE.

Evaluation of Unit 1 Components Fed from XEC1-1 (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-KXA/0147B (Contacts 11-12)	E1-0033-069 E1-0057-020 M1-2263-10	SIS signal energizes the relay to provide trip signal to isolate N1E Battery Room 1-3(C) Exhaust Fan 11 from 1E bus.	Relay remains de-energized. Fan will not trip during an SI signal	Impact Loss of 1E to N1E isolation function.	Impact Orderly shutdown of the plant may be potentially impacted due to un- analyzed load on Bus / EDG	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE.

Note 1: Lack of isolation function will expose the safety related bus and EDG to respond to an un-analyzed condition caused by a postulated failure of non-Class 1E load. The loss of Unit 2 power source will result in additional EDG load, even without considering a non-Class 1E circuit failure that will cause the EDG steady state load to exceed the Tech. Spec. limit of 6.3MW.

Note 2: A review of the following relays/contacts, used in unit 1 circuits, was performed and the analysis presented in EV-CR-2019-003684-2 is still valid. Feeding these relays from Unit 2 power source is acceptable.

1. Relay 1-KXA/601A: Contact 17-18

2. Relay 1-KXA/147A: Contacts 7-8, 9-10 and 11-12.

3. Relay 1-KXA/147B: Contacts 7-8, 9-10, 13-14.

4. Relay 1-KXA/147C: Contacts 3-4, 15-16 and 17-18

5. Relay 1-YXA/2452

6. Relay 1-HXA/2334-1C, 1-HXA/2336-1C

TABLE 2

Evaluation of Unit 1 Components Fed from XEC2-1 (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-KY/5790A SH-TR/1EB2-1/M	E1-0056-079 M1-2303-005 DBD-ME-303 (Sec. 6.2.6)	CP1-VAFNCB-09 backup trip by Shunt Trip of breaker if the fan did not trip due to trip of CP1-VAFNCB-08.	Time Delay Relay 1-KY/5790A remains de-energized and the shunt trip coil to trip exhaust fan 9 would remain de-energized.	None The exhaust fan is controlled through an auxiliary contact driven off of the main relay for supply fan CP1-VAFNCB-08. The time delay relay and shut trips are for backup trip.	None	None	Feeding the relay and shunt trip coil from Unit 2 power source is acceptable.
1-TIS-5790	89-175011 E1-0056-078	Power supply for Temperature Switch Starts Aux. Building Ventilation High Pressure Chemical Feed Room Supply Fan 8 fan at high temperature (124F) and provides an alarm to control room (127F) and trips fan at low temperature (110F).	The Temperature Indicating Switch contact for high temperature would remain closed and the control room alarm contact would remain open. (Room temperature may potentially go below 40ºC.	Impact Supply Fan 8 would continue to run below its trip setpoint, and the control room would not be notified of high temperature in Room 100.	Impact Orderly shutdown of the plant may be potentially impacted due to room 100 temperature going below minimum design temperature.	Impact Safe shutdown of the plant may be impacted.	Feeding the temperature indicating switch from Unit 2 power source is acceptable. However, alignment to Unit 2 source should only be when Unit 1 is in NO MODE.

Evaluation of Unit 1 Components Fed from XEC2-1 (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-KXB/601B (Contacts 17-18)	E1-0053-063 E1-0033-049 DBD-EE-057 (Sec. 5.3)	SI signal energizes the relay to allow Shunt trip to trip breaker MCC1EB2-3 to isolate N1E MCC from 1E bus.	Relay remains de-energized. Breakers would not trip during an SI signal. Non-1E MCCs remain connected to Class 1E bus and EDG after SIAS.	Impact Loss of 1E to N1E isolation function.	Impact Orderly shutdown of the plant may be potentially impacted due to un-analyzed load on Bus / EDG	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE.
1-KXB/601C (Contacts 13-14, 15-16)	E1-0053-063 E1-0057-016 E1-0057-018 M1-2305-004	SI signal energizes the relay to provide start signal for Battery Room 1-2(B) Exhaust Fan-09 Battery Room 1-2(B) Exhaust Fan-10	Relay remains de--energized SI signal will not be available to assure fan start irrespective of BOS or Low (LO) pressure.	Impact Loss of function to assure fan start on SI signal	None Loss of SI signal to start either fan does not affect the shutdown/cool down capability of operating Unit 1.	Impact Safe shutdown of the plant may be impacted.	Feeding the relay from Unit 2 power source is not acceptable. However, alignment to Unit 2 source should only be when Unit 1 is in NO MODE.
1-KXB/601C (Contacts 17-18)	E1-0053-063 E1-0033-049 DBD-EE-057 (Sec. 5.3)	SI signal energizes the relay to allow Shunt trip to trip breaker MCC1EB2-2 to isolate N1E MCC from 1E bus.	Relay remains de-energized. Breakers would not trip during an SI signal. Non-1E MCCs remain connected to Class 1E bus and EDG after SIAS.	Impact Loss of 1E to N1E isolation function.	Impact Orderly shutdown of the plant may be potentially impacted due to un- analyzed load on Bus / EDG	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE.
1-KXB/601D (Contact 7-8)	E1-0053-063 E1-0037-017	SI signal energizes the relay to trip CP1-AFAPCT-01 contactor.	Relay remains de-energized. SI signal will not be available to trip the non-1E motor from non-1E MCC 1EB1-3 lined up to train A.	None For this evaluation Unit 1 train A is in single failure and lack of isolation of non-1E motor from train A lineup MCC 1EB1-3 is not a concern.	None	None	Feeding the relay from Unit 2 power source is acceptable.

Evaluation of Unit 1 Components Fed from XEC2-1 (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-HX/5686	E1-0053-079 E1-0053-007 E1-0053-008 M1-2302-003 M1-2302-008	Start of either fan CP1-VAAUSE-15 or -16 energizes the relay to provide trip signal for Electrical Area Air Supply Fan CP1-VAFNAV-15 Electrical Area Air Supply Fan CP1-VAFNAV-16	Relay remains de-energized. Fans would not shut off when either emergency ventilation fans CP1- VAAUSE-15 or 16 started.	Impact Both normal and emergency fans may continue to run at the same time.	None Normally emergency fans are not running. No impact on orderly shutdown/cool down capability of operating Unit 1.	Impact Running of both normal and emergency fans may impact safe shutdown of Unit 1.	Feeding the relay from Unit 2 power source is not acceptable. However, alignment to Unit 2 source should only be when Unit 1 is in NO MODE.
1-KXB/0147A (Contacts 1-2)	E1-0033-070 E1-0031-059 E1-0018-001G	SIS signal energizes the relay to provide trip signal for space heaters.	Relay remains de-energized. SIS signal to trip Heater will not be generated.	None Review of design information shows these heaters are disconnected (Ref. NCR-88- 1884 and CR-2019-004441)	None	None	Feeding the relay from Unit 2 power source is acceptable.
1-KXB/0147A (Contacts 17-18)	E1-0033-070 E1-0059-078	SIS signal energizes the relay to provide trip signal for Airborne Radiation Monitor 1-REK-5502/03/66 Containment Air Sample Pump.	Relay remains de-energized. SIS signal to trip pump motor will not be generated.	Impact Loss of 1E to N1E isolation function.	Impact Orderly shutdown of the plant may be potentially impacted due to un- analyzed load on Bus / EDG	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE.

Evaluation of Unit 1 Components Fed from XEC2-1 (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-KXB/0147B (Contacts 1-2, 3-4)	E1-0033-070 E1-0033-045 DBD-EE-057 (Sec. 5.3)	SIS signal energizes the relay to provide trip signal to isolate N1E Instrument Air Compressor from 1E bus and prevent manual closing of Breaker 1CIC02	Relay remains de-energized. Breaker will not trip on an SI signal Breaker could be closed, if open, during an SI signal.	Impact Loss of 1E to N1E isolation function.	Impact Orderly shutdown of the plant may be potentially impacted due to un- analyzed load on Bus / EDG	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE.
1-KXB/0147B (Contacts 11-12)	E1-0033-070 E1-0057-022 M1-2305-04A	SIS signal energizes the relay to provide trip signal to isolate N1E Battery Room 1-3(C) Exhaust Fan 12 from 1E bus.	Relay remains de-energized. Fan will not trip during an SI signal	Impact Loss of 1E to N1E isolation function.	Impact Orderly shutdown of the plant may be potentially impacted due to un- analyzed load on Bus / EDG	Impact Safe shutdown of the plant may be adversely impacted due to un-analyzed load on EDG. See Note 1	Feeding the relay from Unit 2 power source is not acceptable. The relay shall be aligned to Unit 1 power source. Alignment to Unit 2 power source should only be when Unit 1 is in NO MODE.

Note 1: Lack of isolation function will expose the safety related bus and EDG to respond to an un-analyzed condition caused by a postulated failure of non-Class 1E load. The loss of Unit 2 power source will result in additional EDG load, even without considering a non-Class 1E circuit failure that will cause the EDG steady state load to exceed the Tech. Spec. limit of 6.3MW.

Note 2: A review of the following relays/contacts, used in unit 1 circuits, was performed and the analysis presented in EV-CR-2019-003684-2 is still valid. Feeding these relays from Unit 2 power source is acceptable.

1. Relay 1-KXB/601A: Contact 17-18

2. Relay 1-KXB/601C: Contact 9-10

3. Relay 1-KXB/147A: Contacts 7-8, 9-10 and 11-12

4. Relay 1-KXB/147B: Contacts 7-8, 9-10, 13-14.

5. Relay 1-KXB/147C: Contacts 3-4, 15-16 and 17-18

REQUEST 2

Provide an evaluation that provides the basis that the 125 VDC buses the XED1-1 and XED2-1, which power some Unit 1 safety-related loads, the aligned from a Unit 2 power source coincident with a Unit 1 SI signal will not have any adverse impacts (i.e., no significant loss of safety function was identified).

RESPONSE

ISSUE

Unit specific components are fed from the two common DC buses, XED1-1 and XED2-1, with power source available from both units, which has the potential to create a situation where a component may be sharing power from the opposite unit. Review of common DC buses shows that only Unit 1 specific components, in addition to common SSCs, are fed from these buses.

EVALUATION

To address GDC 5 requirements, the impact on performance of Unit 1 safety functions including, safe shutdown, and orderly shutdown and cool down of Unit 1, when Unit 2 is feeding the Unit 1 component, is assessed for acceptability of Unit 2 being a power source for XED1-1 and XED2-1. The capabilities of Unit 1 are assessed assuming failure of Unit 2 power to feed Unit 1 component and the opposite train for Unit 1 is considered to have failed due to an event. Simply, it means that the train available for safe shutdown and orderly shutdown / cool down of Unit 1 is the train of power source from Unit 2 coincident with loss of Unit 2 power to the component.

Table 3, as seen on pages 12 to 18, evaluates the impact of Train A components fed from XED1-1, and Table 4, as seen on pages 19 to 27, evaluates the impact of Train B components fed from XED2-1. The evaluations show that feeding the components from Unit 2 power sources has insignificant impact on performance of components safety function, with no adverse impact on safe shutdown, and orderly shutdown and cool down of Unit 1.

CONCLUSION

Due to the results of these evaluations, XED1-1 and XED2-1 having power source alignment to either unit will provide an acceptable power source for Unit 1 components fed from the panels. However, to maintain the compatibility of Unit 1 component power from Unit 1 source, the panels are recommended to be normally aligned to Unit 1 for the power source.

TABLE 3

Evaluation of Unit 1 Components Fed from XED1-1 CPX-ECDPED-01, E1-0020-K (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-HV-5366-SV1 1-HXA/5366-1	E1-0044-09 M1-2242-01 M1-0242-B DBD-ME-241	Demineralized water supply isolation valve. Energize to Open, Normally Close, Fail Close Closes on containment isolation Phase A.	Valve will fail Close irrespective of containment isolation Phase A. Close valve will prevent demineralized water and fire protection service inside the containment Unit 1. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of demineralized and fire protection water functions in Unit 1 containment. Loss of valve position indications.	None Loss of demineralized water service to charcoal deluge system, and fuel transfer system, do not affect the shutdown / cool down capability of operating Unit 1.	None The system is isolated by containment isolation Phase A, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-HV-5158-SV1	E1-0055-08 M1-2238-02 M1-2238-01A M1-0238 DBD-ME-236 DBD-ME-013	Containment sump drain valve. Energize to Open, Normally Open, Fail Close Closes to isolate containment drain on containment isolation Phase A.	Valve will fail Close irrespective of containment isolation Phase A and auto shutdown drain pumps. Sump drain, if required, will not be available. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of sump drain functions in Unit 1 containment. Loss of valve position indications.	None Loss of sump drain service does not affect the shutdown / cool down capability of operating Unit 1.	None The system is isolated by containment isolation Phase A, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-8800A	E1-0062-01 M1-2261-05A M1-0261 DBD-ME-261	Refueling Water Storage Tank to Spent Fuel Pool Cooling System (SFPCS) Pump Valve Energize to Open, Normally Close, Fail Close Close on SIS	Valve will fail Close irrespective of SIS Close valve will not allow SFPCS function. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of SFPCS function. Loss of valve position indications.	None Loss of SFPCS function does not affect the shutdown / cool down capability of operating Unit 1.	None The system is isolated by SIS and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED1-1 CPX-ECDPED-01, E1-0020-K (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
AOV 1-8889A	E1-0062-52 M1-2263-11A M1-0263 DBD-ME-261	Reactor Coolant System (RCS) Hot Leg Test Line Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close Close valve prevent flow from RCS Hot Leg to Safety Injection System Test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to safety injection test header. Loss of valve position indications	None Isolation of safety injection test header does not impact orderly shutdown of the unit.	None Isolation of safety injection test header does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-8889C	E1-0062-71 M1-2263-11A M1-0263 DBD-ME-261	RCS Hot Leg Test Line Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close Close valve prevent flow from RCS Hot Leg to Safety Injection System Test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to safety injection test header. Loss of valve position indications	None Isolation of safety injection test header does not impact orderly shutdown of the unit.	None Isolation of safety injection test header does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-8881	E1-0062-49 M1-2263-10 M1-0263 DBD-ME-261 DBD-ME-013	Safety Injection Pump Hot Leg Test Line valve Energize to Open, Normally Close, Fail Close Closes on containment isolation Phase A.	Valve will fail Close irrespective of containment isolation Phase A. Close valve will prevent flow from safety injection pump discharge to safety injection test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to safety injection test header. Loss of valve position indications	None Isolation of safety injection test header does not impact orderly shutdown of the unit.	None The system is isolated by containment isolation Phase A, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED1-1 CPX-ECDPED-01, E1-0020-K (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
SOV 1-8823	E1-0062-65 M1-2263-08 M1-0263 DBD-ME-261	Safety Injection Pumps – Test Line Valve Energize to Open, Normally Close, Fail Close Close on containment Phase A isolation	Valve will fail Close irrespective of Containment Isolation Phase A. Close valve will prevent flow to SIS test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to SIS test header. Loss of valve position indications	None Isolation of SIS test header does not impact orderly shutdown of the unit.	None Valve is required to close for response to LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-8824	E1-0062-66 M1-2263-08 M1-0263 DBD-ME-261	Safety Injection Pumps – Test Line Valve Energize to Open, Normally Close, Fail Close Close on containment Phase A isolation	Valve will fail Close irrespective of Containment Isolation Phase A. Close valve will prevent flow to SIS test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to SIS test header. Loss of valve position indications	None Isolation of SIS test header does not impact orderly shutdown of the unit.	None Valve is required to close for response to LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-8825	E1-0062-67 M1-2263-08 M1-0263 DBD-ME-261	Safety Injection Pumps – Test Line Valve Energize to Open, Normally Close, Fail Close Close on containment Phase A isolation	Valve will fail Close irrespective of Containment Isolation Phase A. Close valve will prevent flow to SIS test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to SIS test header. Loss of valve position indications	None Isolation of SIS test header does not impact orderly shutdown of the unit.	None Valve is required to close for response to LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED1-1 CPX-ECDPED-01, E1-0020-K (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
AOV 1-8890A	E1-0062-54 M1-2263-11A M1-0263 DBD-ME-261	Residual Heat Removal (RHR) pump Test line Valve Energize to Open, Normally Close, Fail Close Close on Phase A Containment Isolation	Valve will fail Close irrespective of Containment Isolation Phase A. Close valve will prevent flow from RHR pump to SIS test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to SIS test header. Loss of valve position indications	None Isolation SIS test header does not impact orderly shutdown of the unit.	None Valve is required to close for response to LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-HV-5435B-SV1	E1-0059-14 M1-2300-04 M1-0300-A DBD-ME-300	Non-Safety Neutron detector well cooling system damper. Energize to Close, Fail Open Close if fan CP1-VAFNAV-09 stopped During normal plant operation the system maintains the neutron detectors below their qualified temperature limit of 135°F.	Damper will fail Open irrespective of the running of associated fan CP1-VAFNAV-09. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal The open damper when fan CP1-VAFNAV-09 is stopped and other fan (CP1-VAFNAV-10) is running, may impact the neutron detector well cooling. Loss of damper position indication.	None Damper remaining open will not impact the capability of Neutron detector well cooling by fan CP1-VAFNAV-09. The systems capability to maintain temp below 135F is not impacted.	None Neutron detector well fan coolers non-safety fans CP1- VAFNAV-09 & 10 are tripped on SIAS and neutron detector well cooling system is not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED1-1 CPX-ECDPED-01, E1-0020-K (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-HV-5549-SV1	E1-0059-38 M1-2301-07 M1-0301 DBD-ME-301	Containment pressure relief discharge isolation valve. Energize to Open, Normally Close, Fail Close Modes 1-4 the valve is opened periodically for cont. Press. Relief, if required. Closes on containment ventilation isolation signal.	Valve will fail Close irrespective of containment ventilation isolation signal. Close valve will prevent containment pressure relief if required. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of containment pressure relief functions, if required, in Unit 1. Loss of valve position indication.	None Lack of containment pressure relief capability does not impact orderly shutdown and cool down capability of Unit 1.	None The system is isolated by containment isolation signal, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-HV-5539-SV1	E1-0059-28 M1-2301-04 M1-0301 DBD-ME-301	Containment purge air exhaust isolation valve. Energize to Open, Normally Close, Fail Close. Locked closed in Modes 1-4. Closes on containment ventilation isolation signal.	Valve will fail Close irrespective of containment ventilation isolation signal. Close valve will prevent containment purge exhaust if required. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of valve position indication only.	None Loss of containment purge system, required only in MODE 5, 6 does not impact orderly shutdown and cool down capability of Unit 1.	None The system is isolated by containment ventilation isolation signal, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED1-1 CPX-ECDPED-01, E1-0020-K (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-HV-5537-SV1	E1-0059-26 M1-2301-04 M1-0301 DBD-ME-301	Containment purge air supply isolation valve. Energize to Open, Normally Close, Fail Close Locked closed in Modes 1-4. Closes on containment ventilation isolation signal.	Valve will fail Close irrespective of containment ventilation isolation signal. Close valve will prevent containment purge supply if required. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of valve position indication only.	None Loss of containment purge system, required only in MODE 5 & 6, does not impact orderly shutdown and cool down capability of Unit 1.	None The system is isolated by containment ventilation isolation signal, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-LV-4752	E1-0049-01 M1-2232-01 E1-0049-04 E1-0049-18 M1-0232-A DBD-ME-232	Chemical additive tank isolation valve Energize to Close, Normally Open, Fail Open Closes on LO-LO tank level	Valve will fail Open irrespective of tank level. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Open valve will not impact the isolation of the tank because in series MOV 1-LV-4755 will close at LO tank level if required.	None Containment spray system is not required for orderly shutdown and cool down of Unit 1.	None Containment spray system is required in response to LOCA. Open valve will allow delivery to containment spray system and the system will perform its function adequately.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED1-1 CPX-ECDPED-01, E1-0020-K (TRAIN A)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
SOV 1-HV4725	E1-0050-43 M1-2231-07 M1-0231 DBD-ME-229	Component Cooling Water (CCW) drain tank isolation valve Energize to Open, Normally Open, Fail Close Closes on containment isolation Phase A signal	Valve will fail Close irrespective of containment isolation Phase A signal. Close valve will not allow drainage of containment CCW drain tank. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of containment CCW drain tank drainage functions in Unit 1. Loss of valve position indication.	None Lack of capability to drain containment CCW drain tank does not impact normal shutdown of Unit 1.	None The system is isolated by containment isolation Phase A signal and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-HV-5413D-1-SV1 1-HV-5413D-2-SV1	E1-0059-96 M1-2300-01A M1-0300 DBD-ME-300	Non-Safety Containment Recirculation system dampers Energize to Close, Fail Open Opens on SI Automatic Lockout Signal or associated fan running.	Dampers will fail Open irrespective of SI Automatic Lockout Signal or associated fan running. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Open damper has no adverse impact on containment recirculation system. Loss of valve position indication.	None Open damper has no adverse impact on containment recirculation system and orderly shutdown of Unit 1.	None Containment recirculation system's non-safety fans CP1-VAFNAV-01 & 03 are tripped on SIAS and the system is not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-HV-5405D-1-SV1 1-HV-5405D-2-SV1	E1-0059-95 M1-2300-01A M1-0300 DBD-ME-300	Non-Safety Containment Recirculation system dampers Energize to Close, Fail Open Opens on SI Automatic Lockout Signal or associated fan running.	Dampers will fail Open irrespective of SI Automatic Lockout Signal or associated fan running. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Open damper has no adverse impact on containment recirculation system. Loss of valve position indication.	None Open damper has no adverse impact on containment recirculation system and orderly shutdown of Unit 1.	None Containment recirculation system's non-safety fans CP1-VAFNAV-01 & 03 are tripped on SIAS and the system is not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

TABLE 4

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-HV-5365-SV1 1-HXB/5365-1	E1-0044-08 M1-2242-01 M1-0242-B DBD-ME-241 DBD-ME-013	Demineralized water isolation valve. Energize to Open, Normally Close, Fail Close Closes on containment isolation Phase A.	Valve will fail Close irrespective of containment isolation Phase A. Close valve will prevent demineralized water and fire protection service inside the containment Unit 1. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of demineralized and fire protection water functions in Unit 1 containment. Loss of valve position indications.	None Loss of demineralized water service to charcoal deluge system, and fuel transfer system, do not affect the shutdown / cool down capability of operating Unit 1.	None The system is isolated by containment isolation Phase A, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-HV-3486	E1-0048-04 M1-2216-03 M1-0216-A M1-0217 DBD-ME-013	Service Air Containment Isolation Valve Energize to Open, Normally Close, Fail Close Closes on containment isolation Phase A.	Valve will remain Close irrespective of containment isolation Phase A. Close valve will prevent service air service inside the containment Unit 1. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of service air service in Unit 1 containment. Loss of valve position indications.	None Non availability of service air in the containment has no impact on orderly shutdown of Unit 1.	None Containment isolation phase A signal isolate the containment service air system and the system is not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
SOV 1-HV-3487	E1-0048-05 M1-2216-03 M1-0216-A M1-0218 M1-0218-02 DBD-ME-218 DBD-ME-013	Instrument Air Containment Isolation Valve Energize to Open, Normally Open, Fail Close Closes on containment isolation Phase A.	Valve will remain Close irrespective of containment isolation Phase A. Close valve will prevent instrument air service inside the containment Unit 1. Capability to test circuit from safeguard test cabinet 1 will be lost. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of instrument air function for valves located in Unit 1 containment. Loss of valve position indications. Loss of capability to test circuit from safeguard test cabinet 1.	None On loss of Instrument air the Air Operated Valves (AOVs), inside containment building, will fail in Safe position with no impact on orderly shutdown of Unit 1.	None Containment isolation phase A signal isolate the containment instrument air system and the system is not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-HV-5157	E1-0055-07 M1-2238-02 M1-2238-01A M1-0238 DBD-ME-236	Containment sump drain valve. Energize to Open, Normally Open, Fail Close Closes to isolate containment drain on containment isolation Phase A.	Sump drain valve will fail Close irrespective of containment isolation Phase A, and auto shutdown drain pumps. Sump drain, if required, will not be available. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of sump drain function Unit 1 containment. Loss of valve position indications	None Loss of sump drain service does not affect the shutdown capability of operating Unit 1.	None The system is isolated by containment isolation Phase A, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-8888	E1-0062-51 M1-2263-11 M1-0263-A DBD-ME-261 DBD-ME-013	Accumulator fill line control valve Energize to Open, Normally Close, Fail Close Close on Phase A Containment isolation.	Valve will fail Close irrespective of Phase A isolation signal. Close valve will prevent flow from safety injection system pump to safety injection system accumulator fill. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to safety injection system accumulator fill line. Loss of valve position indications	None Isolation of safety injection system accumulator does not impact orderly shutdown of the unit.	None Valve is required to close on Phase A Containment isolation, for response to LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
AOV 1-8800B	E1-0062-02 M1-2261-05A	Refueling Water Storage Tank to SFPCS Pump Drain Valve Energize to Open, Normally Close, Fail Close Close on SIS	Valve will fail Close irrespective of SIS Close valve will not allow SFPCS function. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of SFPCS function. Loss of valve position indications.	None Loss of SFPCS function does not affect the shutdown / cool down capability of operating Unit 1.	None The system is isolated by SIS and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-8964	E1-0062-56 M1-2262-08 M1-0262 DBD-ME-261 DBD-ME-013	Test Line Header Valve Energize to Open, Normally Close, Fail Close Close on Phase A Containment Isolation	Valve will fail Close irrespective of Containment Isolation Phase A. Close valve will prevent flow from SIS test line to SIS refueling water storage tank. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to SIS refueling water storage tank. Loss of valve position indications	None Closing of test line header valve does not impact orderly shutdown of the unit.	None Valve is required to close for response to LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-8889B	E1-0062-53 M1-2263-11A M1-0263 DBD-ME-261	RCS Hot Leg Test line Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close. Close valve will prevent flow to SIS test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to SIS test header. Loss of valve position indications	None Isolation SIS test header does not impact orderly shutdown of the unit.	None Isolation SIS test header does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
SOV 1-8889D	E1-0062-72 M1-2263-11A M1-0263 DBD-ME-261	RCS Hot Leg Test line Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close. Close valve will prevent flow to SIS test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to SIS test header. Loss of valve position indications	None Isolation SIS test header does not impact orderly shutdown of the unit.	None Isolation SIS test header does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-8890B	E1-0062-55 M1-2263-11A M1-0263 DBD-ME-261	RHR pump Test line Valve Energize to Open, Normally Close, Fail Close Close on Phase A Containment Isolation	Valve will fail Close irrespective of Containment Isolation Phase A. Close valve will prevent flow from RHR pump to SIS test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to SIS test header. Loss of valve position indications	None Isolation SIS test header does not impact orderly shutdown of the unit.	None Valve is required to close for response to LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-TV4646	E1-0050-23 M1-2230-02 M1-0230-A DBD-ME-255	Letdown Heat Exchanger (HX) CCW Return outlet control valve Normally Open, Fail Open	No impact on valve operation. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of valve position indications	None No impact on valve function.	None No impact on valve function.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-HV-4507-SV1	E1-0050-04 M1-2229-01 M1-0229-A DBD-ME-229	Demineralized water to CCW Surge tank supply Valve Energize to Close, Normally Close, Fail Open	Valve will fail Open. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of valve position indications	None Fail Open valve has no impact on orderly shutdown of Unit 1.	None Fail Open valve has no impact on safe shutdown of Unit 1.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-LV-4501-SV1	E1-0050-03 M1-2229-01 M1-0229-A DBD-ME-229	CCW surge tank Demin water supply Valve Energize to Open, Normally Close, Fail Close Closes on tank HI level, Opens on lo-lo level.	Valve will fail Close irrespective of tank lo-lo level. Close valve will prevent supply of demineralized water to Train B surge tank compartment. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of capability to maintain CCW surge tank level in Train B Compartment. Loss of valve position indications	None Not maintaining CCW surge tank level has no impact on impact on orderly shutdown of Unit 1.	None Not maintaining CCW surge tank level has no impact on safe shutdown of Unit 1.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-FV-4537-SV1	E1-0050-15 M1-2229-04 M1-0229-B DBD-ME-229	CCW Loop Train B mini flow Recirculating Control Valve Energize to Open, Normally Close, Fail Close Closes on SIS & pump CP1-CCCAPCC-02 not running.	Valve will fail Close irrespective of SIS or pump -02 stopped. Close valve will prevent mini flow recirculation to CCW Train B pump. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of capability for CCW Loop Train B mini flow Recirculation. Loss of valve position indications	None Loss of CCW Train B mini flow to pump does not impact orderly shutdown of Unit 1	None The valve closes on SIS, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
SOV 1-HV-4711	E1-0050-41 M1-2231-05 M1-0231 DBD-ME-229	Excess Letdown & RC DR Tank HX to CCW Isolation Valve Energize to Open, Normally Open, Fail Close Closes on Containment isolation Phase A signal (SIS).	Valve will fail Close irrespective of Containment isolation Phase A signal. Close valve will prevent CCW return flow from Excess Letdown & reactor coolant (RC) Drain (DR) Tank HX. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of CCW flow from Excess Letdown & RC DR Tank HX. Loss of valve position indications	None Loss of CCW flow from Excess Letdown & RC DR Tank HX does not impact orderly shutdown of Unit 1.	None The valve closes on Containment isolation Phase A, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-HV-4710-SV1	E1-0050-40 M1-2231-05 M1-0231 DBD-ME-229	CCW to Excess Letdown & RC DR Tank HX Isolation Valve Energize to Open, Normally Open, Fail Close Closes on Containment isolation Phase A signal (SIS)	Valve will fail Close irrespective of Containment isolation Phase A signal. Close valve will prevent CCW flow to Excess Letdown & RC DR Tank HX. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of CCW flow to Excess Letdown & RC DR Tank HX. Loss of valve position indications	None Loss of CCW flow to Excess Letdown & RC DR Tank HX does not impact orderly shutdown of Unit 1.	None The valve closes on Containment isolation Phase A, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-8879B	E1-0062-46 M1-2263-10 M1-0263 DBD-ME-261	Injection Line Check Valve Test Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close. Close valve will prevent flow from safety injection line to safety injection test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to safety injection test header. Loss of valve position indications	None Isolation of safety injection test header does not impact orderly shutdown of the unit.	None Isolation of safety injection test header does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
AOV 1-8877B	E1-0062-38 M1-2262-06 M1-0262 DBD-ME-261	Accumulator Test Line Isolation Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close. Close valve will isolate test line. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of Accumulator test capability. Loss of valve position indications	None Isolation of Accumulator Test line does not impact orderly shutdown of the unit.	None Isolation of Accumulator Test line does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-8875B	E1-0062-34 M1-2262-06 M1-0262 DBD-ME-261	SIS Accumulator Gas Supply Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close. Close valve will isolate gas supply. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of Accumulator gas supply. Loss of valve position indications	None Loss of Accumulator gas supply does not impact orderly shutdown of the unit.	None Loss of Accumulator gas supply does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-8878B	E1-0062-42 M1-2262-06 M1-0262 DBD-ME-261	Accumulator Fill Line Isolation Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close. Close valve will isolate fill line. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of Accumulator fill capability. Loss of valve position indications	None Isolation of Accumulator fill line does not impact orderly shutdown of the unit.	None Isolation of Accumulator fill line does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
AOV 1-8879D	E1-0062-48 M1-2263-10	Injection Line Check Valve Test Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close. Close valve will prevent flow from safety injection line to safety injection test header. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of flow to safety injection test header. Loss of valve position indications	None Isolation of safety injection test header does not impact orderly shutdown of the unit.	None Isolation of safety injection test header does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
AOV 1-8877D	E1-0062-40 M1-2262-06 M1-0262 DBD-ME-261	Accumulator Test Line Isolation Valve Energize to Open, Normally Close, Fail Close	Valve will fail Close. Close valve will isolate test line. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of Accumulator test capability. Loss of valve position indications	None Isolation of Accumulator Test line does not impact orderly shutdown of the unit.	None Isolation of Accumulator Test line does not impact safe shutdown of the unit.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-FV-4650A-SV1	E1-0050-26 M1-2230-02 M1-0230-A M1-0230-B DBD-ME-229	Vent Chillers CCW supply Control Valve Energize to Open, Normally Open, Fail Close Closes on SIS & Vent Chiller CCW Flow (1-FIS-4650) HI flow	Valve will fail Close irrespective of SIS or 1-FIS-4650 HI flow. Close valve will prevent CCW flow to ventilation chillers & Letdown Chiller. Capability to test circuit from safeguard test cabinet 1 will be lost. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of capability to control CCW flow to ventilation chillers. Loss of capability to test the circuit. Loss of valve position indications	None Loss of capability to control CCW flow to ventilation chillers does not impact orderly shutdown of Unit 1.	None The valve closes on SIS, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

Evaluation of Unit 1 Components Fed from XED2-1 CPX-ECDPED-02, E1-0020-L (TRAIN B)							
LOAD	**Ref. Documents**	**Function**	**Condition Caused by Loss of Unit 2 Power**	**Impact on Safety Function**	**Impact on Orderly Shutdown / Cool down**	**Impact on Safe Shutdown**	**Conclusion**
1-FV-4650B-SV1	E1-0050-27 M1-2230-02 M1-0230 M1-0230-B DBD-ME-229	Vent Chillers CCW discharge Control Valve Energize to Open, Normally Open, Fail Close Closes on SIS & 1-FIS-4650 HI flow	Valve will fail Close irrespective of SIS or 1-FIS-4650 HI flow. Close valve will prevent CCW flow to ventilation chillers & Letdown Chiller. Capability to test circuit from safeguard test cabinet 1 will be lost. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of capability to control CCW flow from ventilation chillers. Loss of capability to test the circuit. Loss of valve position indications	None Loss of capability to control CCW flow from ventilation chillers does not impact orderly shutdown of Unit 1.	None The valve closes on SIS, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
SOV 1-LV-6713	E1-0054-23 M1-2311-02 M1-0311 DBD-ME-311	Demin./Reactor Makeup water to Surge Tank (Train B) Safety Chilled water. Energize to Open, Normally Open, Fail Close Closes on HI level and open on LO level	Valve will fail Close irrespective of tank level. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of capability to maintain Demin. / Reactor Makeup water to Surge Tank. Loss of valve position indications	None Loss of capability to maintain Demin. / Reactor Makeup water to Surge Tank does not impact orderly shutdown of Unit 1.	None Loss of capability to maintain Demin. / Reactor Makeup water to expansion Tank does not impact orderly shutdown of Unit 1.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.
1-HV-4726-SV1	E1-0050-44 M1-2231-07 M1-0231 DBD-ME-229	Containment CCW DR Tank Discharge Isolation Valve Energize to Open, Normally Open, Fail Close Closes on Containment isolation Phase A signal (SIS)	Valve will fail Close irrespective of Containment isolation Phase A signal. Close valve will prevent Containment CCW DR Tank Discharge flow. Run and Stop valve position indicating lights at hand switch will be blackout.	Minimal Loss of capability for Containment CCW DR Tank Discharge flow. Loss of valve position indications	None Loss of capability for Containment CCW DR Tank Discharge flow does not impact orderly shutdown of Unit 1.	None The valve closes on Containment isolation Phase A signal, and not credited for LOCA.	Feeding the valve from Unit 2 power source is acceptable. However, normal alignment to Unit 1 power source is recommended.

REQUEST 3

In the markup of FSAR changes in attachment 1 of the enclosure to the LAR, as stated above, the following statement *"This requirement is being added to the FSAR, a markup of the FSAR is included in Attachment 1 to this letter"* should not be a part of markup. Please provide revised markup without this sentence.

RESPONSE

The requested markup of page 8.3-45 can be seen on pages 29 to 31.

the level transmitter, the current flowing in the loop will be greater than 20 mA. The voltage across the 30.1 resistor will not be normal and an indication or an alarm may initiate. A fault to ground of the transmitter will have the same effect as a short circuit. These indications and alarms are not a safety-related function. Therefore, the malfunction of the level transmitters is not a safety concern.

A loop voltage and a short circuit current test on the power supply card, required by the vendor to verify the operability of the card, is performed by connecting a 100 Ω 1 W resistor which simulates a short of the transmitter, the 392 Ω and 250 Ω resistor. The test required by the vendor simulates a more severe case than the failure of the transmitter only. As such, the power supply will not be challenged by the failure of the transmitter only and the failures in the transmitter will not adversely affect the Class 1E power source. Therefore, Non-Class 1E Travel Screen Differential Level Transmitters fed by a Class 1E Power Supply is not a safety concern.

o. Electrical Isolation/Separation of Class 1E Partial Discharge Monitor Bus Couplers for Unit 1 and Unit 2 Station Service Water Pump and Component Cooling Water Pump Motors and Emergency Diesel Generators.

The Bus Coupler consists of a Class-1E, 15 kV rated, non-shielded jumper cable, Class-1E epoxy mica capacitor (EMC), and Non-Class 1E low voltage, low energy coaxial cable for each motor/generator phase connection and a common Non-Class 1E termination box. The termination box is used to connect Non-Class 1E diagnostic equipment, one phase at a time, when partial discharge monitoring is performed.

The 15 kV jumper is spliced to the motor feeder cable. The other end of this jumper connects to the high voltage side of the EMC. The coaxial cable connects to the low voltage side of the EMC and the other end of this coaxial cable terminates at a BNC connector in the termination box.

The EMC is an 80 pico-farad capacitor that has an impedance of 33 meg-ohms at 60 hertz. Thus the EMC essentially acts as an open circuit at the normal operating frequency of 60 hertz. Only the partial discharge pulses (on the order of nano seconds duration and 100-500 milli-volts) are passed through this capacitor. The diagnostic equipment employs 120 VAC (60 hertz) plant power. Any short on the low voltage side would be of insufficient magnitude to damage the 6.6 kV rated windings of the motor or generator. An open circuit on the low voltage side will not affect the performance of the Station Service Water Pump Motors, Component Cooling Water Pump Motors, and Emergency Diesel Generators, since there is no voltage applied to the EMC under this condition. Also, the capacitor essentially acts as an on circuit at this frequency. Therefore, electrical separation is not required.

8. Compliance With NRC Regulatory Guide 1.81 [16]

The CPNPP design represents a deviation of Regulatory Guide 1.81, Regulatory Positions C.1 and C.3, as approved in Amendments xxx and xxx to the Unit 1 and Unit 2 facility licenses, respectively (Reference 49). Regulatory Position C.1 states that DC systems in multi-unit nuclear power plants should not be shared. Regulatory Position C.3 states that each unit should have separate and independent onsite emergency and

shutdown electric systems (i.e., vital power should not be shared between units). The CPNPP design includes some safety-related common loads, and some Unit 1 specific loads fed from common panels, which is a deviation from Regulatory Guide 1.81, Regulatory Positions C.1 and C.3. The acceptability of this design is described below and is in compliance with GDC 5 in that the sharing of these loads does not significantly impair the ability to perform the necessary safety functions, assuming an accident in one unit and an orderly shutdown and cooldown of the remaining unit.

Compliance with Regulatory Position C.2:

Regulatory Position 2.a, The sharing of onsite a.c. electric systems should be limited to two units:

CPNNP sharing of onsite AC electric systems are limited to only Unit 1 and Unit 2.

Regulatory Position 2.b, A single failure (a false or spurious accident signal at the system level in the non-accident unit should be considered as a single failure) should not preclude the capability to automatically supply minimum engineered safety feature (ESF) loads in any one unit and safely shut down the remaining unit, assuming a loss of the offsite power:

Due to redundancy for common systems being maintained consistent with that of unit-specific safety-related trains, a single-failure at the system level will not preclude the capability to automatically supply minimum ESF loads in any one unit and safely shutdown the other unit assuming a loss of off-site power.

Regulatory Position 2.c, Onsite power capacity should be provided to energize sufficient Seismic Category I equipment to attain a safe and orderly cold shutdown of all units, assuming the loss of offsite power and the most severe (in terms of power drain) design basis event and a single failure in the onsite electric system:

On-site power capacity to energize sufficient Seismic Category I equipment to attain a safe and orderly cold shutdown of both the units, assuming the loss of off-site power and most severe design basis event and a single failure in the on-site electrical system, is not compromised as a result of common buses because each unit system is designed to have sufficient capacity to feed common bus loads in addition to the unit specific loads.

Regulatory Position 2.d, The interaction between each unit's engineered safety feature electric circuits should be limited such that any allowable combination of maintenance and test operations in the units will not preclude the capability to automatically supply power to minimum ESF loads in any unit, assuming a loss of offsite power:

For AC electric systems, CPNPP has created the following administrative procedural requirement for XEC1-1 and XEC2-1, which power some Unit 1 safety-related loads, that the power source SHALL be aligned to Unit 1 during Unit 1 Modes 1 through 6. The panels power source alignment to Unit 2 will only be allowed when Unit 1 is in NO MODE. Since they only power Unit 1 loads this will not allow any interaction. ~~This requirement is being added to the FSAR, a markup of the FSAR is included in Attachment 1 to this letter.~~

Two common DC electric systems, XED1-1 and XED2-1, feed both Unit 1 and common components. Alignment to either unit provides an acceptable power source for Unit 1 components fed from the panels. An evaluation of being aligned from a Unit 2 power source coincident with a Unit 1 SI signal did not reveal any adverse impacts (i.e., no significant loss of safety function was identified). Evaluations confirmed that the power sources, from both units, feeding the common buses have sufficient capacity and capability to adequately feed all the common bus loads, as stated in the FSAR.

Regulatory Position 2.e, Coordination between the unit operators should not be necessary in order to meet Regulatory Positions 2.b and 2.c. Coordination required to meet Regulatory Position 2.d should be minimized:

As stated above, XEC1-1 and XEC2-1 cannot be aligned to Unit 2 while there is fuel in the Unit 1 reactor vessel; therefore, for AC electric systems there is no possible interaction from Unit 2 operators.

For DC electric systems, the evaluations confirmed that the power sources from both units have sufficient capacity and capability to adequately feed all XED1-1 and XED2-1 common loads and unit specific loads as stated in the FSAR. Because redundancy for common systems is maintained consistent with that of unit-specific safety-related trains, a single failure at the system level will not preclude the capability to automatically supply minimum ESF loads in any one unit and safely shutdown the other unit assuming a loss of off-site power. Based on this there is no need for coordination between unit operators for Regulatory Positions 2.b or 2.c, and minimal coordination would be needed for Regulatory Position 2.d.

Regulatory Position 2.f, Complete information regarding the status of the shared systems should be provided for each unit operator:

The status of the which unit power supply is aligned to shared loads is provided in the control room which is available to the unit operator of each unit.

Regulatory Position 2.g, The design should conform to the recommendations contained in Regulatory Guides 1.6 (Safety Guide 6), 1.9 (Safety Guide 9), and 1.47:

CPNPP design is in accordance with RG 1.6, RG 1.9, and RG 1.47. This is laid out in the sites UFSAR, this is laid out in other sections of Section 8.3

Exception to Regulatory Position C1 and C.3:

Safety-related loads shared between both units are powered from common MCCs, 120-VAC panels, 118-VAC panels, and 125-VDC panels as described in Subsections 8.3.1.1.9, 8.3.1.1.13 and 8.3.2.1. Indication of source of power associated with the common electrical equipment mentioned above is provided on a common panel located in the Control Room and accessible to both unit operators.

A single failure at the system level will not affect the capability to automatically supply minimum ESF loads in any one unit and safely shutdown the other unit assuming a loss

REQUEST 4

Revise the applicable description to ensure consistency between the description of the FSAR change in section 2.3 of the enclosure to the LAR and the FSAR markup in attachment 1 to the LAR.

RESPONSE

Please see below for revised section 2.3.

2.3 Comanche Peak Nuclear Compliance with RG 1.81, Regulatory Position C.2

The following section describes how CPNPP complies with RG 1.81, Regulatory Position C.2. Due to CPNPP beginning construction in December of 1974 (Reference 6), there is an allowance in RG 1.81 for CPNPP to have gained approval for Regulatory Position C.2 on a case-by-case basis (Reference 2). This section is being added to both the LAR and the UFSAR to assist the NRC in the review and approval of this LAR.

Regulatory Position 2.a: The sharing of onsite a.c. electric systems should be limited to two units:

> CPNNP sharing of onsite AC electric systems are limited to only Unit 1 and Unit 2.

Regulatory Position 2.b: A single failure (a false or spurious accident signal at the system level in the non-accident unit should be considered as a single failure) should not preclude the capability to automatically supply minimum engineered safety feature (ESF) loads in any one unit and safely shut down the remaining unit, assuming a loss of the offsite power:

> Due to redundancy for common systems being maintained consistent with that of unit-specific safety-related trains, a single-failure at the system level will not preclude the capability to automatically supply minimum ESF loads in any one unit and safely shutdown the other unit assuming a loss of off-site power.

Regulatory Position 2.c: Onsite power capacity should be provided to energize sufficient Seismic Category I equipment to attain a safe and orderly cold shutdown of all units, assuming the loss of offsite power and the most severe (in terms of power drain) design basis event and a single failure in the onsite electric system:

> On-site power capacity to energize sufficient Seismic Category I equipment to attain a safe and orderly cold shutdown of both the units, assuming the loss of off-site power and most severe design basis event and a single failure in the on-site electrical system, is not compromised as a result of common buses because each unit system is designed to have sufficient capacity to feed common bus loads in addition to the unit's specific loads.

Regulatory Position 2.d: The interaction between each unit's engineered safety feature electric circuits should be limited such that any allowable combination of maintenance and test operations in the units will not preclude the capability to automatically supply power to minimum ESF loads in any unit, assuming a loss of offsite power:

> For AC electric systems, CPNPP has created the following administrative procedural requirement for XEC1-1 and XEC2-1, which power some Unit 1 safety-related loads, that

the power source SHALL be aligned to Unit 1 during Unit 1 Modes 1 through 6. The panels power source alignment to Unit 2 will only be allowed when Unit 1 is in NO MODE. Since they only power Unit 1 loads this will not allow any interaction. This requirement is being added to the CPNPP FSAR and the TSB, Attachment 1 and 2 respectively.

Two common DC electric systems, XED1-1 and XED2-1, feed both Unit 1 and common components. Alignment to either unit provides an acceptable power source for Unit 1 components fed from the panels. An evaluation of being aligned from a Unit 2 power source coincident with a Unit 1 safety injection (SI) signal did not reveal any adverse impacts (i.e., no significant loss of safety function was identified). Evaluations confirmed that the power sources, from both units, feeding the common buses have sufficient capacity and capability to adequately feed all the common bus loads, as stated in the FSAR.

Regulatory Position 2.e: Coordination between the unit operators should not be necessary in order to meet Regulatory Positions 2.b and 2.c. Coordination required to meet Regulatory Position 2.d should be minimized:

As stated above, XEC1-1 and XEC2-1 cannot be aligned to Unit 2 while there is fuel in the Unit 1 reactor vessel; therefore, for AC electric systems, there is no possible interaction from Unit 2 operators.

For DC electric systems, the evaluations confirmed that the power sources from both units have sufficient capacity and capability to adequately feed all XED1-1 and XED2-1 common loads and unit specific loads as stated in the FSAR. Because redundancy for common systems is maintained consistent with that of unit-specific safety-related trains, a single failure at the system level will not preclude the capability to automatically supply minimum ESF loads in any one unit and safely shutdown the other unit assuming a loss of off-site power. Based on this, there is no need for coordination between unit operators for Regulatory Positions 2.b or 2.c, and minimal coordination would be needed for Regulatory Position 2.d.

Regulatory Position 2.f: Complete information regarding the status of the shared systems should be provided for each unit operator:

The status of the which unit power supply is aligned to shared loads is provided in the control room which is available to the unit operator of each unit.

Regulatory Position 2.g: The design should conform to the recommendations contained in Regulatory Guides 1.6 (Safety Guide 6), 1.9 (Safety Guide 9), and 1.47:

CPNPP design is in accordance with RG 1.6, RG 1.9, and RG 1.47. This is laid out in CPNPP FSAR section 8.3.

OTHER ISSUES IDENTIFIED DURING THE ACCEPTANCE REVIEW

Although not required for the NRC to complete its acceptance review, the NRC staff has identified some initial information required to complete its review as follows. The response may be submitted with the responses to a supplemental request or separately (e.g., with responses to requests for additional information, if they are identified).

ISSUE 1

The TS Bases should reflect the design basis in the FSAR. TS Bases table B 3.8.9-1 does not currently list all the safety-related buses, including the common buses clarified in the LAR. The listing of all the safety-related buses in TS Bases table B 3.8.9-1 is considered necessary to meet the intent of TS 3.8.9.

Provide updated TS Bases table B 3.8.9-1 with additions of common 125 VDC buses XED1-1 and XED2-1, and common 118 VAC buses XEC1-1 and XEC2-1, to their train A and train B assignments. In addition, all other safety-related buses (such as 480 VAC motor control centers buses) to which safety-related loads are connected should also be added to table B 3.8.9-1.

RESPONSE

CPNPP is not providing a response to this issue at this point, due to a lack of resource support from operations to provide a technically adequate answer. CPNPP will be providing a response to this issue with the first round of Request for Additional Information (RAIs), or if there are no RAIs in a separate letter post acceptance of this letter, as allowed by the NRC request.