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CP-201301449  
Log # TXX-13185

REF. # 10CFR50.73(a)(2)(iv)(A)

January 30, 2014

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

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT DOCKET NOS. 50-445 AND 50-446  
"AUTO START OF BOTH UNITS' AUXILIARY FEEDWATER PUMPS AND  
EMERGENCY DIESEL GENERATORS DUE TO A LOSS OF BOTH UNITS'  
SAFEGUARDS ELECTRICAL POWER,"  
LICENSEE EVENT REPORT 445/13-003-00.

Dear Sir or Madam:

Enclosed is Licensee Event Report (LER) 445/13-003-00, "Auto Start of Both Units' Auxiliary Feedwater Pumps and Emergency Diesel Generators Due to a Loss of Both Units' Safeguards Electrical Power," for Comanche Peak Nuclear Power Plant (CPNPP) Units 1 and 2.

This letter contains no new regulatory commitments regarding CPNPP Units 1 and 2.

Should you have any questions concerning this submittal, please contact Tamera Ervin-Walker at (254) 897-6902.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By: \_\_\_\_\_

A handwritten signature in black ink, appearing to be "T. McCool", written over a horizontal line.

Thomas P. McCool  
Vice President, Station Support

Enclosure

A member of the STARS Alliance

Callaway · Comanche Peak · Diablo Canyon · Palo Verde · Wolf Creek

IEZZ  
NRR

TJEW

c - Marc Dapas, Region IV  
Balwant K. Singal, NRR  
Resident Inspectors, Comanche Peak

NRC FORM 366

(01-2014)

U.S. NUCLEAR REGULATORY COMMISSION

**LICENSEE EVENT REPORT (LER)**

(See Page 2 for required number of digits/characters for each block)

APPROVED BY OMB: NO. 3150-0104

EXPIRES: 01/31/2017

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**1. FACILITY NAME**

Comanche Peak Nuclear Power Plant (CPNPP) Units 1 and 2

**2. DOCKET NUMBER**

05000

445

**3. PAGE**

1 OF 5

**4. TITLE**

AUTO START OF BOTH UNITS' AUXILIARY FEEDWATER PUMPS AND EMERGENCY DIESEL GENERATORS DUE TO A LOSS OF BOTH UNITS' SAFEGUARDS ELECTRICAL POWER

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
12	04	2013	13	- 003	- 00	01	30	2014	CPNPP Unit 2	05000 446
									FACILITY NAME:	DOCKET NUMBER
										05000

  

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
10. POWER LEVEL	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

FACILITY NAME

Timothy A. Hope, Manager, Regulatory Affairs

TELEPHONE NUMBER (Include Area Code)

(254) 897-6370

**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

**14. SUPPLEMENTAL REPORT EXPECTED**
☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE)
 ☒ NO
**15. EXPECTED SUBMISSION DATE**

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 1341 Central Standard Time (CST) on December 4, 2013, CPNPP experienced a loss of safeguards electrical power to both Units when 345kV (kilo-Volt) transformer XST2 lost power while the 138kV transformer XST1 was out-of-service for a modification. During the modification work for XST1, a 6.9kV Phase B cable fed from XST2's X winding was incorrectly cut and electrical protection circuits actuated to isolate transformer XST2. At the time of the cut, the cable was energized and supplying power to various safeguards loads. Non-safeguards electrical power remained energized. Both Units remained at power in MODE 1. All auxiliary feedwater (AFW) pumps, three per Unit, started on both Units. All four emergency diesel generators (EDGs), two per Unit, automatically started and all safeguards buses were re-energized from the EDGs. Operations declared an Unusual Event (UE). All engineered safety feature (ESF) systems functioned as expected. At 1341 CST, both Units entered Technical Specification (TS) 3.8.1, Condition C, Required Action C.2 which allowed 24 hours for restoring one offsite circuit (XST1 or XST2) to OPERABLE status. CPNPP requested and received discretionary enforcement from the Nuclear Regulatory Commission (NRC) to allow an additional 14 hours to restore XST1 or XST2 to OPERABLE. The XST2 cable repair was completed and XST2 was declared OPERABLE on December 5, 2013 at 1717 CST and the Notice of Enforcement Discretion and UE were terminated. XST1 was declared OPERABLE on December 6, 2013 at 0019 CST. There were no injuries resulting from the cut cable. All times in this report are approximate and CST unless noted otherwise.

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

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Comanche Peak Nuclear Power Plant Units 1 and 2	05000 445	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 5
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**NARRATIVE****I. DESCRIPTION OF THE REPORTABLE EVENT****A. REPORTABLE EVENT CLASSIFICATION:**

This is reportable under 50.73(a)(2)(iv)(A) "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B)" due to the automatic start of both Unit's AFW pumps, three per Unit, and EDGs, two per Unit. Note this was not reportable as a condition prohibited by Technical Specifications (TS) 3.8.1 under 50.73(a)(2)(i)(B).

**B. PLANT CONDITION PRIOR TO EVENT:**

On December 4, 2013, Comanche Peak Units 1 and 2 were in MODE 1, Power Operation, operating at approximately 100% power.

**C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT**

Startup transformer (ST) XST1 was inoperable at the start of the event. There were no other structures, systems, or components that were inoperable at the start of the event that contributed to the event.

**D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES:**

On December 19, 2012, LAR 12-007 was submitted requesting two extensions of TS 3.8.1 Completion Time (CT) for Required Action A.3 for offsite circuits on a one-time basis from 72 hours to 14 days to add an alternate ST for XST1 [EIS: XCI]. On September 18, 2013, the NRC approved LAR 12-007. The first 14-day CT to perform the 138kV work began on 10/14/2013 at 0303 and was successfully completed on 10/22/13 at 0412 CST.

At 1341 on December 4, 2013, while XST1 was INOPERABLE for the second CT due to the modification work, a 6.9kV Phase B cable fed from XST2's X winding was cut by CB&I electrical craft (Non-Utility, Non-Licensed) and electrical protection circuits actuated to isolate transformer XST2. Consequently, both CPNPP Units experienced a loss of safeguards electrical power. Both CPNPP Units entered Condition C, Required Action C.2, "Restore one required offsite circuit to OPERABLE status" of TS 3.8.1 "AC Sources - Operating" to restore one required offsite circuit to OPERABLE status within 24 hours. The Control Room Shift Manager (Utility, Licensed) correctly declared an Unusual Event (UE). Both Units remained at-power in MODE 1. All auxiliary feedwater (AFW) [EIS: (BA)] pumps, three per Unit, started on both Units. Both Units' EDGs [EIS: (EK) (DG)], two per Unit, automatically started and all safeguards buses were re-energized from the EDGs. All ESF actuation systems [EIS: (JE)] functioned as expected. Non-safeguards electrical power remained energized by the Unit auxiliary transformers [EIS: XCI] from each Units' main generator output. Additionally, 345kV switchyard power was available to non-safeguards electrical buses via station transformers 1ST and 2ST if required.

If neither offsite source (XST1 or XST2) could be restored to OPERABLE status within the Completion Time of 24 hours for Condition C, then both CPNPP Units would have been required to enter Condition G and be in MODE 3 in 6 hours and in MODE 5 in 36 hours.

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**NARRATIVE**

Enforcement discretion was requested on December 5, 2013 at 1000 to provide an additional 14 hours to comply with Limiting Condition for Operation (LCO) 3.8.1 Condition C beginning at 1341 on December 5, 2013 in order to permit additional time to make repairs and restore either XST1 or XST2 to OPERABLE status before entry into MODE 3 within 6 hours. The additional 14 hours was requested to restore XST1 or XST2 to OPERABLE status such that the action to place the plant in MODE 3 within 6 hours, Required Action G.1, would begin at 0341 on December 6, 2013. On December 5, 2013 at 1300 CPNPP received verbal approval of the Notice of Enforcement Discretion (NOED) from the NRC.

The XST2 cable was repaired with an in-line splice and the fault and potential impact to XST2 was evaluated by Engineering. Engineering determined the ground fault relay sensed the fault and XST2 was isolated in 4 cycles; therefore, XST2 was not adversely affected when the 6.9kV cable was cut. XST2 was declared OPERABLE on December 5, 2013 at 1717. The NOED and UE were subsequently terminated. XST1 was declared OPERABLE on December 6, 2013 at 0019. There were no injuries associated with this event.

**E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL PERSONNEL ERROR**

Operators (utility, licensed) in the Unit 1 and 2 Control Rooms received indications of loss of power to the safeguard buses.

**II. COMPONENT OR SYSTEM FAILURES**

**A. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE**

Not applicable – There were no component or system failures.

**B. FAILURE MODE, MECHANISM, AND EFFECTS OF EACH FAILED COMPONENT**

Not applicable - There were no component or system failures.

**C. SYSTEMS OR SECONDARY FUNCTIONS THAT WERE AFFECTED BY FAILURE OF COMPONENTS WITH MULTIPLE FUNCTIONS**

Not applicable – There were no component or system failures.

**D. FAILED COMPONENT INFORMATION**

Not applicable - There were no component or system failures.

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**NARRATIVE**

**III. ANALYSIS OF THE EVENT**

**A. SAFETY SYSTEM RESPONSES THAT OCCURRED**

Both motor driven auxiliary feedwater pumps, two per Unit, and the turbine driven auxiliary feedwater pump for each Unit started as expected as a result of the loss of safeguards power to both Units. All four EDGs started, two per Unit. The blackout sequencer initiated and completed loading both trains and both Units' safeguards buses on the four EDGs. All ESF actuation systems functioned as expected.

**B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY**

The duration of both Units' offsite power INOPERABILITY to the safety related buses was 27 hours and 36 minutes.

**C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT**

There were no actual safety consequences because of this event. Although this event had the potential to impact site personnel safety for those working in the area of the cut cable, there were no personnel injuries.

The 345kV switchyard was available and stable. Non-safeguards electrical power remained energized by the Unit auxiliary transformers. Both Units remained at-power in MODE 1. All ESF actuation systems functioned as expected.

The EDGs were originally intended to be in standby, so while in the running condition additional compensatory measures were put in place to monitor the EDGs and their fuel oil storage levels. Fuel trucks were scheduled as needed to maintain EDG fuel oil inventory as required by TS 3.8.3 "Diesel Fuel Oil, Lube Oil, and Starting Air."

Compensatory measures for the planned modification remained in effect during this event. Below are some examples of the compensatory measures:

- The Alternate Power Diesel Generator (APDG) set provided for each Unit were verified available to provide power to equipment for long term cooling once per shift.
- Testing and maintenance activities were suspended for the duration of the CT for the EDGs, APDG sets, turbine driven AFW pumps, XST2, component cooling water pumps, and station service water pumps.
- A Nuclear Equipment Operator was assigned to ensure proper operation of the APDGs, during the 14-day CT.

With the exception of the XST1 and XST2 transformers, no non-safety related equipment was degraded or out-of-service that would have resulted in additional risk significant impact or increased the probability of a plant transient or complicate the recovery of a transient.

It is concluded that the health and safety of the public were unaffected by this condition. Offsite power is not credited in the CPNPP's Final Safety Analysis Report, Chapter 15 "Accident Analysis" and therefore, the offsite power is not considered a safety system. Based on the above and the guidance provided in NUREG-1022, "Event Report Guidelines 10 CFR 50.72 and 50.73," Rev. 3 dated January 2013, this event has been evaluated to not meet the definition of a safety system functional failure per 10CFR50.73(a)(2)(v).

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**NARRATIVE**

**IV. CAUSE OF THE EVENT**

The cause of this event was less than adequate Management Team (both Luminant and CB&I) oversight of adherence to standards. Contributing to the event were inadequate design and design reviews, design conventions not followed, design locations not fully validated, procedure inadequacies, and inadequate immediate corrective action implementation from a previous cut cable event.

The Responsible Engineer for the XST1 modification did not independently verify the manual transfer switch box installation locations in accordance with procedures. Consequently, incorrect design locations went undiscovered during the ensuing design development, approval, and Work Order reviews.

As a result, the 6.9kV B phase cable from transformer XST2 was mistakenly identified to be cut. In addition, some craft personnel questions regarding the location and identity of the cable to be cut were not properly resolved prior to the cable cut.

**V. CORRECTIVE ACTIONS**

Immediate corrective actions included restoring one of the startup transformers to OPERABLE status, repairing the damaged cable, and suspending electrical modification work activities associated with the XST1 modification.

As a part of the CPNPP Corrective Action Program, procedures will be created and/or revised to improve the modification oversight process, modification planning process, design change development and review process, component verification process, and station senior management awareness of modification team performance to station standards. Management observations will also be performed to ensure supervision is reinforcing station standards for design change and field implementation activities. A Modification Oversight Composite Index will be created to reflect the current Modification Team performance against station standards.

**VI. PREVIOUS SIMILAR EVENTS**

There have been no previous similar events involving a cut cable resulting in the loss of both Units' safeguard power source and causing an automatic start of both Units' AFW pumps and both Units' EDGs.

On October 30, 2013, while performing at-power work (Units 1 and 2 were at 100% power) for the same modification, an energized ground cable was inadvertently cut. To repair the cut cable, XST1 had to be removed from service making XST1 INOPERABLE. However, XST2 was still OPERABLE and there was no loss of safeguards power to either Unit.