

# VISTRA ENERGY



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CP-201700743  
TXX-17079

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

Ref 10 CFR 50.73

10/05/2017

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT  
DOCKET NO. 50-446  
AUXILIARY FEEDWATER SYSTEM ACTUATION DURING UNIT 2 TURBINE TRIP  
LICENSEE EVENT REPORT 446/17-001-00

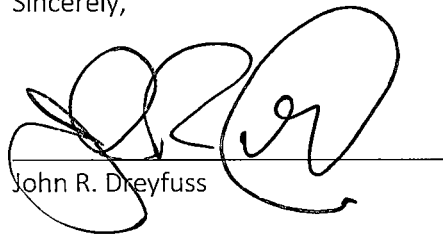
Dear Sir or Madam:

Pursuant to 10CFR50.73, Vistra Operations Company LLC (Vistra OpCo), hereby submits enclosed Licensee Event Report 446/17-001-00, "Auxiliary Feedwater System Actuation During Unit 2 Turbine Trip" for Comanche Peak Nuclear Power Plant (CPNPP) Unit 2.

This communication contains no new licensing basis commitments regarding CPNPP Units 1 and 2.

If you have any questions regarding this submittal, please contact Gary L. Merka at 254-897-6613.

Sincerely,



John R. Dreyfuss

IEZZ  
NRR

Enclosure

c - Kriss Kennedy, Region IV  
Margaret W. O'Banion, NRR  
Resident Inspectors, Comanche Peak



**LICENSEE EVENT REPORT (LER)**

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

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
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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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by 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.

<b>1. FACILITY NAME</b> Comanche Peak Nuclear Power Plant	<b>2. DOCKET NUMBER</b> 05000          446	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
Auxiliary Feedwater System Actuation During Unit 2 Turbine Trip

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
08	11	2017	2017	- 001	- 00	10	05	2017	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: <i>(Check all that apply)</i>			
<b>1</b>	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<b>10</b>	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<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)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

LICENSEE CONTACT Timothy A. Hope, Manager, Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) 6370
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	SJ	FCV	Fisher	Y					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH 01	DAY 25	YEAR 2018
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**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 1124 Central Daylight Time on August 11, 2017, Comanche Peak Nuclear Power Plant (CPNPP) Unit 2 experienced an automatic Auxiliary Feedwater System actuation during a Turbine trip. The plant was stabilized at 3 percent reactor power with the Auxiliary Feedwater System feeding all Steam Generators with all levels within their normal bands. The cause of the Turbine trip was high water level in Steam Generator 2-02 related to the mechanical malfunction of a Steam Generator 2-02 flow control bypass valve. Corrective actions included repair of the Steam Generator 2-02 flow control bypass valve. A supplemental report will be submitted by January 25, 2018. All times in this report are approximate and Central Daylight Time unless noted otherwise.



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

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1. FACILITY NAME  Comanche Peak Nuclear Power Plant	2. DOCKET NUMBER  05000- 446	3. LER NUMBER		
		YEAR  17	SEQUENTIAL NUMBER  001	REV NO.  00

**NARRATIVE**

**I. DESCRIPTION OF THE REPORTABLE EVENT**

**A. REPORTABLE EVENT CLASSIFICATION**

This event 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) of this section." The system that actuated was the Unit 2 Auxiliary Feedwater System.

**B. PLANT CONDITION PRIOR TO EVENT**

At 1124 on August 11, 2017, Comanche Peak Nuclear Power Plant (CPNPP) Unit 2 was in MODE 1 operating at approximately 10% power while increasing power following a refueling outage.

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

There were no inoperable structures, systems or components that contributed to the event.

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

On August 11, 2017, CPNPP Unit 2 was in MODE 1 operating at approximately 10% power while increasing power following a refueling outage. After syncing the Main Generator to the grid at 1120, Operators (utility, licensed) in the Unit 2 Control Room noted increasing water level in Steam Generator (SG) 2-02. The SG 2-02 flow control bypass valve [EIS: (SJ)(FCV)] was demanded closed, but the valve would not close and remained in mid-position. Operators then attempted to close the valve via the hand switch on the Main Control Board, but SG 2-02 water level continued rising, and at 1124 Unit 2 received a P-14 signal resulting in an automatic Turbine trip, a trip of the 2B Main Feedwater Pump, a Feedwater Isolation signal, and an automatic Auxiliary Feedwater (AFW) pump start as designed. All systems responded normally during and following the Turbine trip.

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

Operators (utility, licensed) in the Unit 2 Control Room noted increasing level in Steam Generator (SG) 2-02 followed by an automatic Turbine trip on a P-14 signal.

**II. COMPONENT OR SYSTEM FAILURES**

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

The cause of the SG 2-02 flow control bypass valve malfunction is still being determined and a supplemental report providing this information will be submitted by January 25, 2018.

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

The cause of the SG 2-02 flow control bypass valve malfunction is still being determined and a supplemental report providing this information will be submitted by January 25, 2018.

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

Below 25 percent load, the SG 2-02 flow control bypass valves automatically maintain the steam generator water level by using control signals from the Steam Generator water levels. The valves are air operated and are designed to fail closed upon loss of air.



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		YEAR 17	SEQUENTIAL NUMBER 001	REV NO. 00

**NARRATIVE**

**D. FAILED COMPONENT INFORMATION**

The SG 2-02 flow control bypass valves are 4 inch, carbon steel, globe valves. The valves are a Model ED manufactured by Fisher Controls.

**III. ANALYSIS OF THE EVENT**

**A. SAFETY SYSTEM RESPONSES THAT OCCURRED**

The Turbine Trip and Auxiliary Feedwater Systems actuated as required.

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

Not applicable - No safety system train inoperability resulted from this event.

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

This event is bounded by the CPNPP Final Safety Analysis Report (FSAR) accident analysis which assumes conservative initial conditions which bound the plant operating range and other assumptions which could reduce the capability of safety systems to mitigate the consequences of the transient. Feedwater system malfunctions that result in an increase in feedwater flow are analyzed in section 15.1.2 of the FSAR. The system is analyzed to demonstrate plant behavior in the event that an excessive feedwater addition occurs due to a control system malfunction or operator error. The FSAR analysis shows that the departure from nucleate boiling ratio encountered for an excessive feedwater addition at power is above the limit value and the feedwater malfunction event at no-load is bounded by the feedwater malfunction event at full power. The event of August 11, 2017, occurred at 10% reactor power, and all safety systems and components functioned as designed. Based on the above, it is concluded that the health and safety of the public were unaffected by this condition and this event has been evaluated to not meet the definition of a safety system functional failure per 10CFR50.73(a)(2)(v).

**IV. CAUSE OF THE EVENT**

The AFW actuation was caused by a P-14 signal that was received due to high level in SG 2-02 related to the mechanical malfunction of a Steam Generator 2-02 flow control bypass valve. The cause of the SG 2-02 flow control bypass valve malfunction is still being determined and a supplemental report providing this information will be submitted by January 25, 2018.

**V. CORRECTIVE ACTIONS**

The SG 2-02 feedwater flow control bypass valve was repaired. An extent of condition review was performed and verified that all of the other flow control bypass valves were closed. Additional corrective actions related to this event are still being determined and a supplemental report providing this information will be submitted by January 25, 2018.

**VI. PREVIOUS SIMILAR EVENTS**

A similar reportable event occurred at CPNPP on October 3, 2015 related to a feedwater flow control valve malfunction (Unit 2 LER 446/15-002). The cause of that event was a degraded positioner O-ring, and the details/causes of the August 11, 2017 event are believed to be sufficiently different from the October 3, 2015 event such that the previous corrective actions could not have prevented this event.