

**TUELECTRIC**

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Ref. # 10CFR50.73(a)(2)(iv)

February 23, 1993

William J. Cahill, Jr.  
Group Vice President

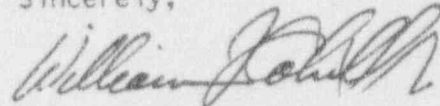
U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)  
DOCKET NO. 50-445  
MANUAL OR AUTOMATIC ACTUATION OF ANY  
ENGINEERED SAFETY FEATURE  
LICENSEE EVENT REPORT 93-002-00

Gentlemen:

Enclosed is Licensee Event Report 93-002-00 for Comanche Peak Steam Electric Station Unit 1, "Reactor Trip Due to Spurious Signal in Protection Instrument".

Sincerely,



William J. Cahill, Jr.

JET/tg

Enclosure

c - Mr. J. L. Milhoan, Region IV  
Mr. L. A. Yandell, Region IV  
Resident Inspectors, CPSES (2)

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NRC FORM 366A		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92	
<b>LICENSEE EVENT REPORT (LER)</b> <b>TEXT CONTINUATION</b>				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.	
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# I. DESCRIPTION OF THE REPORTABLE EVENT

## A. REPORTABLE EVENT CLASSIFICATION

An event or condition that resulted in an automatic actuation of the Reactor Protection System (RPS)(EIS:(JC)).

## B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On January 24, 1993, Comanche Peak Steam Electric Station (CPSES) Unit 1 was in Mode 1, Power Operation, with the reactor operating at 100 percent of rated thermal power.

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

One channel of power range nuclear instrumentation (EIS:(JC)) had been declared out of service for performance of surveillance testing.

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

At 0814, on January 24, 1993, nuclear instrumentation power range channel 3 was placed in the trip position in accordance with the approved surveillance procedure. This reduced the Over Temperature Nitrogen 16 (OTN-16) logic from 2 out of 4 to 1 out of 3. At 1112 a.m., loop 2 pressurizer pressure generated an anomalous 6 second duration low pressure signal which reduced the channel 2 OTN-16 setpoint below actual power and completed the logic for an automatic reactor trip.

Any event or condition that results in an automatic actuation of any Engineered Safety Feature (ERF), including the Reactor Protection System (RPS) is reportable within 4 hours under 10CFR50.72(b)(ii). At approximately 1310 CST on January 24, 1993, the Nuclear Regulatory Commission Operations Center was notified via the Emergency Notification System of the event as required.

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

At 1112 on January 24, 1993, numerous alarms were received on the main control board (EIS:(MCBD)(1B)) when Over Temperature Nitrogen 16 completed its reactor trip logic.

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## II. COMPONENT OR SYSTEM FAILURES

### A. FAILURE MODE, MECHANISM, AND EFFECT OF EACH FAILED COMPONENT

While channel 3 of OTN-16 was in the trip condition during routine surveillance testing, pressurizer pressure transmitter channel 2 generated a 6 second duration spike caused the trip of channel 2 of OTN-16 and the resulting automatic reactor trip.

### B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

The failed component was the pressurizer pressure transmitter (EHS:(PT)(JC)), however, no failed component on the transmitter was identified.

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

The failed component had multiple functions:

- Low Pressurizer Pressure Reactor Trip
- Low Pressurizer Pressure Safety Injection (SI)
- Pressurizer Power-Operated Relief Valve (PORVs)
- High Pressurizer Pressure Reactor Trip
- Input to the OTN-16 Reactor Trip Setpoint

When the failed component generated a spurious signal at 1112 on January 24, 1993, the following functions were affected:

- OTN-16 Reactor Trip
- Low Pressurizer Pressure Reactor Trip Alarm
- Low Pressurizer Pressure SI Alarm

### D. FAILED COMPONENT INFORMATION

1-PT-0456, pressurizer pressure transmitter protection channel 2  
 Manufacturer: Barton  
 Model: 763



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**III. ANALYSIS OF THE EVENT****A. SAFETY SYSTEM RESPONSES THAT OCCURRED**

A spurious signal from pressurizer pressure channel 2 completed the coincidence logic for an OTN-16 reactor trip and resulted in opening of the reactor trip breakers. A turbine generator trip was initiated from the reactor trip. The auxiliary feedwater system was manually initiated prior to reaching steam generator low low level setpoints and pressurizer pressure control was taken to manual. Associated components within these systems functioned as designed.

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

Not applicable - there were no safety systems which were rendered inoperable due to a failure.

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

The OTN-16 reactor trip protects the core against the Departure from Nucleate Boiling (DNB) by monitoring the combination of pressurizer pressure, reactor coolant temperature, reactor power and axial power distribution. The reactor trip was the result of equipment failure and was not required to mitigate the consequences of an actual event. This event is described in the CPSES Final Safety Analysis Report (FSAR) Section 15.2.3. The analysis uses conservative assumptions to demonstrate that DNB will not decrease below the limiting value of 1.30 during the event.

The event on January 24, 1993 occurred at 100 percent reactor power and all protective functions responded as required. The event posed no threat to the plant personnel or to the health and safety of the public. There is no impact to the technical specification, FSAR or other licensing basis documents. The event did not initiate any unreviewed safety questions nor any unreviewed technical specification conditions and was bounded by the accident analysis in the FSAR.

**IV. CAUSE OF THE EVENT**

Failure of channel 2 the pressurizer pressure transmitter during surveillance testing.

**V. CORRECTIVE ACTION**

The immediate corrective action was the replacement of the pressure transmitter.

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## VI. PREVIOUS SIMILAR EVENTS

LER 92-009 describes a reactor trip caused by spiking in the OTN-16 circuitry. The event was caused by personnel error and the corrective actions could not be expected to prevent the reactor trip described in this report.

## VII. ADDITIONAL INFORMATION

The time reported used in the report are approximate and central standard time.