

TU ELECTRIC

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January 2, 1992

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 (ESF)
LICENSEE EVENT REPORT 90-037-01 (SUPPLEMENTAL REPORT)

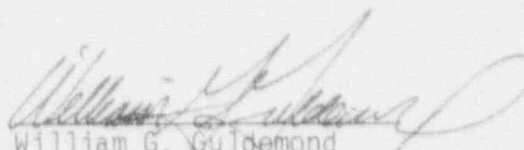
Gentlemen:

Enclosed is Supplemental Licensee Event Report 90-037-01 for Comanche Peak
Steam Electric Station Unit 1, "Blackout Sequencer Actuation due to
Personnel Error."

Sincerely,

William J. Cahill, Jr.

By:


William G. Guidemond
Manager, Site Licensing

NH/tg

c - Mr. R. D. Martin, Region IV
Resident Inspectors, CPSES (2)

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NRC FORM 305,		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92	
LICENSEE EVENT REPORT (LER)				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-330), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC, 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC, 20503.	
Facility Name (1) COMANCHE PEAK - UNIT 1				Docket Number (2) 015101010141415	
Title (4) BLACKOUT SEQUENCER ACTUATION DUE TO PERSONNEL ERROR				Page (5) 1 OF 017	
Event Date (5)		LER Number (6)		Report Date (7)	
Month	Day	Year	Year	Sequential Number	Revision Number
11	05	90	90	037	01
Other Facilities Involved (8)		Facility Names N/A			
Docket Numbers 015101010111		Docket Numbers 015101010111			
This report is submitted pursuant to the requirements of 10 CFR § (Check one or more of the following) (11):					
Operating Mode (9)		20.402(b)		20.405(c)	
5				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	
Power Level (10)		20.405(a)(1)(i)		50.73(a)(2)(v)	
01010				<input type="checkbox"/> 50.73(a)(2)(vi)	
		20.405(a)(1)(ii)		<input type="checkbox"/> 50.73(a)(2)(vii)(A)	
		20.405(a)(1)(iii)		<input type="checkbox"/> 50.73(a)(2)(vii)(B)	
		20.405(a)(1)(iv)		<input type="checkbox"/> 50.73(a)(2)(viii)	
		20.405(a)(1)(v)		<input type="checkbox"/> 50.73(a)(2)(ix)	
Licensee Contact For This LER (12)					
Name				Telephone Number	
D. E. BUSCHBAUM				8117 819171-15181511	
Complete One Line For Each Component Failure Described in This Report (13)					
Cause	System	Component	Manufacturer	Reportable To NPRDS	
Supplemental Report Expected (14)					Expected Submission Date (15)
<input type="checkbox"/> Yes (If yes, complete Expected Submission Date)					<input checked="" type="checkbox"/> No
Abstract (Limit to 1400 spaces, i.e., approximately fifteen single-space typewriter lines) (16)					
<p>At approximately 0300 on November 5, 1990, Electrical Maintenance personnel were conducting a test of the nuclear safety related Train B 6.9 KV switchgear undervoltage (UV) relays. At 0443, while attempting to re-land a wire, the electrician inadvertently made contact with an energized point on the UV relay, resulting in a UV actuation. As a result of the UV actuation, the Reactor Operator (RO) observed the transfer of Train B 6.9 KV switchgear to the alternate power supply, and actuation of the Train B Blackout Sequencer (BOS). At 0454, the RO reset the BOS, and restored actuated components to their original configuration. At 0652 on November 5, 1990, with restoration complete, the RO restored the normal power supply to Train B 6.9 KV switchgear.</p> <p>The root cause was determined to be personnel error. Corrective actions include a memo to Electrical Maintenance personnel discussing this event.</p>					

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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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Text (If more space is required, use additional NRC Form 366A's) (17)

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

An event or condition that resulted in the manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS) (EIS:(JC)).

B. PLANT OPERATING CONDITIONS BEFORE THE EVENT

At 0443 on November 5, 1990, Comanche Peak Steam Electric Station (CPSES) Unit 1 was in Mode 5, Cold Shutdown, for a planned outage. The Reactor Coolant System (RCS) (EIS:(AB)) was at a temperature of 125 degrees Fahrenheit and pressure of 111 pounds per square inch. Residual Heat Removal Pump -01 (RHRP-01) (EIS:(P)(BP)) was in service providing shutdown cooling to the RCS.

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 directly to the event.

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

At approximately 0300 on November 5, 1990, Electrical Maintenance personnel (utility, nonlicensed) were conducting a test of the nuclear safety related Train B 6.9 Kilovolt (KV) switchgear (EIS:(SWGR)(EA)) undervoltage (UV) relays (EIS:(27)(EA)). An Operator (utility, licensed) was assisting the electricians. As required by procedure, wire "AQ1" was removed from point 2 on the UV relay, and taped.

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At 0443 on November 5, 1990, while attempting to re-land wire "AQ1" to point 2 on the UV relay, the electrician inadvertently made contact with point 3 of the UV relay, which was energized. As a result, a UV actuation occurred. The electrician working on the UV relay immediately secured wire "AQ1" from touching anything and stopped further testing. The Operator assisting the electricians immediately notified the Control Room of the event.

At 0443 on November 5, 1990, as a result of the UV actuation, the Reactor Operator (RO) (utility, licensed) observed the transfer of Train B 6.9 KV switchgear to the alternate power supply, and actuation of the Train B Blackout Sequencer (BOS)(EI ~ 34)(EA)). At 0454 on November 5, 1990, the RO reset the BOS, and restored actuated components to their original configuration. At 0652 on November 5, 1990 with restoration complete, the RO restored the normal power supply to Train B 6.9 KV switchgear.

An event or condition that results in a manual or automatic actuation of any ESF, including the RPS, is reportable within 4 hours under 10CFR50.72(b)(2)(ii). At 0603 on November 5, 1990, the Nuclear Regulatory Operations Center was notified of the event via the Emergency Notification System.

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

At 0443 on November 5, 1990, the Operator assisting the electricians performing the UV relay test, notified the Control Room that an inadvertent UV actuation may have occurred. The RO in the Control Room confirmed that a UV actuation had occurred. The RO observed the transfer of Train B 6.9 KV switchgear to the alternate power supply, and actuation of the Train B BOS and related components.

At 0454 on November 5, 1990, the RO reset the BOS, and began restoring actuated components to their original configuration. At 0652 on November 5, 1990, with restoration complete, the RO restored the normal power supply to Train B 6.9 KV switchgear.

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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-630), 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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II. COMPONENT OR SYSTEM FAILURES

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

Not applicable - there were no component failures associated with this event.

B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

Not applicable - there were no component failures associated with this event.

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

Not applicable - there were no failures of components with multiple functions associated with this event.

D. FAILED COMPONENT INFORMATION

Not applicable - there were no component failures associated with this event.

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

The following safety systems actuated automatically as a result of the event. The appropriate components within these systems operated as designed, upon receipt of the start signal from the Train B BOS.

Chemical and Volume Control (EIS:(CB))

Component Cooling Water (EIS:(CC))

Station Service Water (EIS:(BI))

Control Room Heating, Venting and Air Conditioning (EIS:(VI))

Safety Chilled Water (EIS:(KM))

Containment Ventilation Isolation (EIS:(BK))

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Due to plant configuration and procedural prerequisites, no safety injection or actual flow to the reactor core occurred.

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

Operability of the Engineered Safety Features Actuation System (ESF) (EIS:(JE)) is required to provide the overall reliability, redundancy, and diversity assumed available in the facility design, for the protection and mitigation of accident and transient conditions. The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards.

As a prerequisite to the UV test being performed, CPSES Unit 1 was required to be in Mode 5 with the RCS loops filled, or in Mode 6, Refueling, with at least 23 feet of water over the reactor vessel flange (EIS:(RPV)(AB)), or the core off loaded. During this event the Train A Residual Heat Removal (RHR) (EIS:(BP)) System was in service providing cooling to the RCS. The Train B RHR System remained operable during the event.

As a prerequisite to the UV test being performed, Train A 6.9 KV switchgear, the train not being tested, and its associated Diesel Generator (EIS:(DG)(EK)) were operable, satisfying Technical Specification 3.8.1.2. Furthermore, the Train B 6.9 KV and 480 volt switchgear were required to be energized and in a normal configuration. The alternate power supply to Train B 6.9 KV switchgear was available during this event.

Based on the above discussion, the event did not adversely affect the safe operation of CPSES Unit 1, or the health and safety of the public.

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IV. CAUSE OF THE EVENT

A. ROOT CAUSE

The root cause of this incident was the failure of a person to perform a physical action without error. Landing a lead to a specific point on a relay without touching anything around it requires caution, concentration, and manual dexterity. In this case, the individual landing the lead to the relay did not avoid touching the lead to another contact approximately one inch away. When the lead touched the other contact it initiated an automatic transfer of the Train B 6.9 KV switchgear to the alternate power supply and actuated the Train B BOS.

V. CORRECTIVE ACTIONS

A. IMMEDIATE

The RO responded appropriately to the BOS actuation. The RO reset the BOS and then restored the actuated components to their original condition.

B. CORRECTIVE ACTIONS TAKEN TO PREVENT RECURRENCE

ROOT CAUSE

The root cause of this event was personnel error.

CORRECTIVE ACTION

Although the UV relay test had been successfully previously performed, the possibility of statistical human error still existed. A memo describing this event has been distributed to Electrical Maintenance personnel for their review.

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C. CORRECTIVE ACTION TAKEN ON GENERIC CONCERNS IDENTIFIED AS A DIRECT RESULT OF THE EVENT

GENERIC CONSIDERATION

The possibility exists for this event to occur in other systems in which lifting and landing leads near energized contacts/terminals is required to perform a test or to isolate a component for other purposes.

CORRECTIVE ACTION

A review of surveillance procedures was conducted to identify steps requiring the lifting and landing of leads to perform a test or replace a component or circuit vital to the control logic of a safety related system. The procedures, as performed, were determined to provide adequate test methods. No additional risks or procedure changes were identified.

VI. PREVIOUS SIMILAR EVENTS

Although there have been several previous events, due to personnel error, the root causes of those events were unrelated to the root cause of this event. The corrective actions taken to resolve the root causes of the previous events would not have prevented this event. Therefore, no previous similar events have been reported pursuant to 10CFR50.73.

VII. ADDITIONAL INFORMATION

The times listed in the report are approximate and Central Standard Time.

LER 90-037-00 included a corrective action to revise the UV relay test procedure to lift and land leads at the terminal blocks instead of at the relay. After further review it was determined that the current location for lifting and landing leads was the safest and best. Therefore, this corrective action, and the associated contributing factor, have been deleted from this supplemental report (LER 90-037-01).