



Log # TXX-92354
File # 10200
Ref. # 10CFR50.73(a)(2)(iv)

July 23, 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 N. 50-445
MANUAL OR AUTOMATIC ACTUATION OF ANY
ENGINEERED SAFETY FEATURE
LICENSEE EVENT REPORT 92-016-00

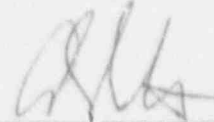
Gentlemen:

Enclosed is Licensee Event Report 92-016-00 for Comanche Peak Steam Electric Station Unit 1, "High Winds Damage Transformer Causing an Engineered Safety Feature Actuation".

Sincerely,

William J. Cahill, Jr.

y:


A. B. Scott, Jr.
Vice President Nuclear
Operations

JET/tg

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

9207280106 920723
PDR ADDCK 05000445
S PDR

JE92 1/1

NRC FORM 306		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-500), 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) 05000445		Page (3) 1 of 106				
Title (4) HIGH WINDS DAMAGE TRANSFORMER CAUSING AN ENGINEERED SAFETY FEATURE ACTUATION									
Event Date (5)		LER Number (6)		Report Date (7)					
Month	Day	Year	Year	Sequence Number	Revision Number				
06	23	92	92	016	00				
Other Facilities Involved (8)		Facility Name							
N/A		N/A							
Operating Mode (9)		This report is submitted pursuant to the requirements of 10 CFR § (Check one or more of the following) (11)							
1		<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 20.405(a)(1)(iii) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 20.405(a)(1)(v)							
Power Level (10)		<input type="checkbox"/> 20.405(c) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.79(a)(2)(i) <input type="checkbox"/> 50.79(a)(2)(ii) <input type="checkbox"/> 50.79(a)(2)(iii) <input type="checkbox"/> 50.79(a)(2)(iv)							
100		<input checked="" type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vi) <input type="checkbox"/> 50.73(a)(2)(vii)(A) <input type="checkbox"/> 50.73(a)(2)(vii)(B) <input type="checkbox"/> 50.73(a)(2)(viii)							
		<input type="checkbox"/> 79.71(b) <input type="checkbox"/> 79.71(c) Other (Specify in Abstract below and in Text, NRC Form 366A)							
Licensee Contact For This LER (12)									
Name D. E. BUSCHBAUM, COMPLIANCE SUPERVISOR				Area Code Telephone Number 817897-5851					
Complete One Line For Each Component Failure Described In This Report (13)									
Cause	System	Component	Manufacturer	Reportable To NPROS	Cause	System	Component	Manufacturer	Reportable To NPROS
C	EA	CON	X999	N					
Supplemental Report Expected (14)									
<input type="checkbox"/> Yes (if yes, complete Expected Submission Date)				<input checked="" type="checkbox"/> No					
				Expected Submission Date (15)					
Abstract (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)									
<p>At 1948 on June 23, 1992, with a severe thunderstorm in progress, the phase B line between Unit 1 Station Transformer (1ST) and the 1ST motor operated disconnect switch (MODS) broke at the connection to the 1ST MODS. As a result, the preferred offsite power for Unit 1 was momentarily deenergized causing both Unit 1 safeguards buses to automatically transfer to the alternate power supply, and both blackout sequencers (BOS) to operate. As a result of the BOS operation, an ESF actuation occurred. All safety systems responded as designed.</p> <p>The root cause of this event was a deficiency in the design of the support structure for the lines between 1ST and the 1ST MODS. During this event high winds in excess of 70 miles per hour were experienced resulting in high stresses placed on the end connections for these lines. As a result of the high winds and the lack of adequate support for these lines, the phase B line broke at the connection to the 1ST MODS. Corrective actions include repair of the 1ST phase B connector and redesign of the support structure.</p>									

NRC FORM 306A U.S. NUCLEAR REGULATORY COMMISSION LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92 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, 20545, 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) 05000445	LER Number: (6) Year: 92 - Sequential Number: 016 - Revision Number: 00		Page: (3) 02 of 06	

Text (if more space is required, use additional NRC Form 306A's) (17)

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

Any event or condition that resulted in an automatic actuation of any Engineered Safety Feature (ESF).

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On June 23, 1992, Comanche Peak Steam Electric Station (CPSES) Unit 1 was in Mode 1, Power Operation, operating at 100 percent power.

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 1948 on June 23, 1992, with a severe thunderstorm in progress, the phase B line between Unit 1 Station Transformer (1ST) (EII3:(XMFR)(EA)) and the 1ST motor operated disconnect switch (MODS) (EII5:(IS)(EA)) broke at the connection to the 1ST MODS. The phase B line fell, resulting in an overcurrent signal. The overcurrent signal tripped transmission line breakers 7970 and 7980 (EII5:(BKR)(FK)), resulting in an undervoltage condition on Startup Transformer (XST2)(EII5:(XMFR)(EB)). The preferred offsite power for Unit 1 is supplied through XST2. The undervoltage condition deenergized XST2 and opened the 1ST MODS. After a short time delay transmission line breakers 7970 and 7980 automatically reclosed, reenergizing XST2. The momentary deenergization of XST2 caused both Unit 1 safeguards buses (EII5:(EA)) to automatically transfer to the alternate power supply, and both blackout sequencers (BOS)(EII5:(34)(EA)) to operate. As a result of the BOS operation, an ESF actuation occurred. All safety systems responded as designed.

NRC FORM 366A		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92	
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.	
Facility Name (1)		Docket Number (2)		LER Number (6)	
COMANCHE PEAK-UNIT 1		0 5 0 0 0 4 4 5		9 2 - 0 1 6 - 0 0 0 3	
				Page (3)	
				0 3 OF 0 6	

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

At 1954 on June 23, 1992, the Reactor Operator (RO)(utility, licensed) began restoring affected ESF components to their original configuration. At 2045, the 1ST MODS was locked open to prevent closure. At 2305 on June 23, 1992, restoration procedures were complete and the plant was stable in Mode 1, at 96 percent power.

Any event or condition that results in an automatic actuation of any ESF is reportable within four hours under 10CFR50.72(b)(2)(ii). At 2310 on June 23, 1992, the Nuclear Regulatory Commission Operations Record Center was notified of the event via the Emergency Notification System.

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

At 1948 on June 23, 1992, numerous alarms were received on the Main Control Board (EHS:(MCBD)(IB)) due to the loss of 1ST and XST2, and the automatic transfer of the safeguards buses from preferred offsite power to alternate power supply. The RO immediately responded to the event in accordance with the appropriate procedures.

II. COMPONENT OR SYSTEM FAILURES

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

Wind in excess of 70 miles per hour (mph) (gusts in excess of 80 mph) applied stress and torque to the 1ST MODS end connection. As a result, the end connection broke and the phase B line fell.

B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

The design of the support structure for the lines between 1ST and the 1ST MODS was less than adequate. These lines are approximately 60 feet long and supported only at the end connections. As a result of the high winds and the lack of adequate support for these lines, the phase B line broke at the connection to the 1ST MODS.

NRC FORM 306A U.S. NUCLEAR REGULATORY COMMISSION LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		APPROVED OMB NO. 3150-0104 EXPIRES 4/30/92 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.			
Facility Name (1)	Docket Number (2)	LER Number (6)		Page (3)	
COMANCHE PEAK-UNIT 1	0 5 0 0 0 4 4 5	Year	Sequential Number	Revision Number	
		92	-	016	-
				00	04 of 06

Text (if more space is required, use additional NRC Form 306A's) (17)

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

Not applicable - there were no failed components with multiple functions that affected this event

D. FAILED COMPONENT INFORMATION

Manufacturer: Gibbons Electric Power Connectors
 Catalog Number: GB5140

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.

- Chemical and Volume Control (EISS:(CB))
- Component Cooling Water (EISS:(CC))
- Station Service Water (EISS:(BI))
- Control Room Heating, Venting, and Air Conditioning (EISS:(VI))
- Safety Chilled Water (EISS:(KM))
- Auxiliary Feedwater (EISS:(BA))

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

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

NRC FORM 306A LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 3150-0104 EXPIRES 4/30/92 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 90.0 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.	
Facility Name (1) COMANCHE PEAK-UNIT 1	Docket Number (2) 051000445	LER Number (6) Year: 92 Sequential Number: 016 Revision Number: 00	Page (3) 05 of 06

Text (If more space is required, use additional NRC Form 306A's) (17)

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

CPSES is interconnected to the offsite power transmission system via physically and electrically independent 138kV and 345kV switchyards. This transmission system ensures that sufficient power will be available to supply the safety-related equipment required for: 1) safe shutdown of the facility, and 2) the mitigation and control of accident conditions within the facility. During this event, power was available to safety-related equipment. Consequently, it is concluded that this event did not result in a threat to the safe operation of CPSES Unit 1 or the health and safety of the public.

IV. CAUSE OF THE EVENT

ROOT CAUSE

The root cause of this event was a deficiency in the design of the support structure for the lines between 1ST and the 1ST MODS. These lines are approximately 60 feet long and are supported only at the end connections. During this event high winds in excess of 70 mph (gusts in excess of 80 mph) were experienced resulting in high stresses placed on the end connections for these lines. As a result of the high winds and the lack of adequate support for these lines, the phase B line broke at the connection to the 1ST MODS.

V. CORRECTIVE ACTIONS

A. IMMEDIATE

The 1ST phase B connector was repaired and reinstalled at 0645 on June 24, 1992. The phase A and C connectors were examined. No defects were found. At 0730 on June 24, 1992, 1ST was reenergized and returned to service.

<p>NRC FORM 366A</p> <p style="text-align: center;">LICENSEE EVENT REPORT (LER) TEXT CONTINUATION</p>	<p style="text-align: right;">U.S. NUCLEAR REGULATORY COMMISSION</p> <p style="text-align: right;">APPROVED OMF NO. 3150-0104 EXPIRES: 4/30/92</p> <p>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.</p>						
<p>Facility Name (1)</p> <p>COMANCHE PEAK-UNIT 1</p>	<p>Docket Number (2)</p> <p>0 5 0 0 0 4 4 5</p>						
<p>LER Number (6)</p> <table border="1" style="margin: auto;"> <tr> <td style="width: 10%;">Year</td> <td style="width: 10%;">Sequential Number</td> <td style="width: 10%;">Revision Number</td> </tr> <tr> <td style="text-align: center;">92</td> <td style="text-align: center;">- 016</td> <td style="text-align: center;">- 000</td> </tr> </table>		Year	Sequential Number	Revision Number	92	- 016	- 000
Year	Sequential Number	Revision Number					
92	- 016	- 000					
<p>Page (3)</p> <p>0 6 of 0 6</p>							

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

B. CORRECTIVE ACTIONS TO PREVENT RECURRENCE

ROOT CAUSE

The design of the support structure for the lines between 1ST and the 1ST MODS was less than adequate.

CORRECTIVE ACTION

The design of the support structure for these lines will be analyzed and a design change implemented as required.

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

GENERIC CONCERN

The possibility exists that the support structures for the other lines at CPSES may be less than adequate.

CORRECTIVE ACTION

The support structures for the other transmission lines at CPSES were examined. The possibility exists for this event to occur in only one, the lines from XST2. The design of the support structure for the lines from XST2 will be analyzed and a design change implemented as required.

VI. PREVIOUS SIMILAR EVENTS

No previous similar events have been reported pursuant to 10CFR50.73.

VII. ADDITIONAL INFORMATION

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