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William J. Cahill, Jr.
Executive Vice President

April 29, 1991

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-445
MANUAL OR AUTOMATIC ACTUATION OF ANY ENGINEERED SAFETY FEATURE
LICENSEE EVENT REPORT 91-013-00

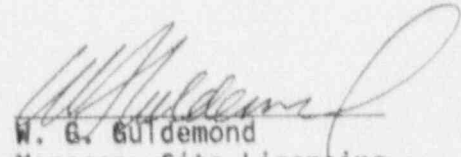
Gentlemen:

Enclosed is Licensee Event Report 91-013-00 for Comanche Peak Steam Electric Station Unit 1, "Loss of Offsite Power Caused by a Grounded Transmission Line."

Sincerely,

William J. Cahill, Jr.

By:


W. G. Gulderson
Manager, Site Licensing

JAA/bm

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

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NRC FORM 360A 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: 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) COMANCHE PEAK - UNIT 1	Docket Number (2) 015101010141415	LER Number (6) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">Year</th> <th style="width: 10%;">Sequential Number</th> <th style="width: 10%;">Revision Number</th> </tr> <tr> <td>91</td> <td>0113</td> <td>010</td> </tr> </table>	Year	Sequential Number	Revision Number	91	0113	010	Page (3) 012 OF 015
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91	0113	010							

Text (If more space is required, use additional NRC Form 360A's) (17)

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

Any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature.

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On March 28, 1991 at 2253 CST, Comanche Peak Steam Electric Station (CPSES) Unit 1 was in Mode 5, Cold Shutdown, Reactor Coolant System at a temperature of 130 degrees F. Train A of the Residual Heat Removal System (RHR) (EIS:(BP)) was in service.

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 March 28, 1991, at 2253 CST, a fault occurred on the transmission line providing power to transformers XST2 (EIS:(XFMR)(EB)) (the preferred source of power to Unit 1 safety-related equipment) and 1ST (EIS:(XFMR)(EA)) (the alternate source of power to non safety-related equipment). Safety related 6.9kV bus 1EA1 (EIS:(BU)(EK)) slow transferred to XST1 (the alternate source for Unit 1 safety related switchgear), the train A blackout sequencer actuated, and the train A diesel generator (EIS:(DG)(EK)) started. Train B was out-of-service; however, train B 6.9kV bus 1EA2 was energized and slow transferred to XST1. The non-safety buses (EIS:(BU)(EA)) experienced a total loss of power since no alternate power supply was available. All systems operated as expected. No plant equipment or component failures were noted. Train A RHR was restarted and the non-1E buses were reenergized at 2303 hours.

NRC FORM 366A

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 4/30/92

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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-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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At 0005 hours on March 29, the Nuclear Regulatory Commission was notified of the event via the Emergency Notification System in accordance with 10CFR50.72. At 0020 hours, another fault occurred on the same transmission line due to the same cause. Since buses 1EA1 and 1EA2 were still powered from XST1, no slow transfer occurred as a result of this event. Train A diesel generator restarted due to loss of preferred power source.

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

Numerous alarms (EIS:(ALM)(IB)) were received in the Control Room as a result of the line faults. Inspection of the transmission line confirmed the cause of the event

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.

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III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

Upon receipt of the start signal from the Train A blackout sequencer, all appropriate components within the following safety systems operated as expected:

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))

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

Loss of an offsite power source is an event described in Chapter 8 of the CPSES Final Safety Analysis Report (FSAR). During the two actuations occurring on March 28 and 29, all components functioned as described in the FSAR, providing assurance that if the event had occurred at a more severe set of initial conditions, a source of power would have been available to all required safety systems. As expected by system design, shutdown cooling was interrupted but remained available during the event. It is concluded that the event did not adversely affect the safe operation of CPSES Unit 1 or the health and safety of the public.

IV. CAUSE OF THE EVENT

The cause of both events was the accumulation of bird droppings on the transmission line insulators. Birds frequently roost on transmission tower (EIS:(TWR)) crossbracing, and droppings collect on the insulators. Excessive accumulation has been shown to be a possible cause of line faults.

NRC FORM 966A

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 4/30/92

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

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V. CORRECTIVE ACTIONS

A. IMMEDIATE

On March 29, action was initiated to clean the insulators on the two towers supporting the affected portion of the line approximately 13 miles from the plant site. On April 4 and 5, action was taken to clean additional affected areas.

B. CORRECTIVE ACTIONS TAKEN TO PREVENT RECURRENCE

In response to previous similar problems on system transmission lines, deflectors have been installed on selected towers to direct bird droppings away from the insulators. Increased attention will be given to ensuring large accumulations do not occur.

To further enhance the reliability of offsite power sources, a modification is being made to the design of the CPSES switchyard. Startup transformers XST2 and 1ST are currently fed directly from the 345 kV transmission line. Following modification, these transformers will be fed from the switchyard buses, and as a result, a transmission line fault will have no effect on the transformers.

VI. PREVIOUS SIMILAR EVENTS

There have been no previous reportable events attributed to the accumulation of bird droppings.