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January 3, 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 91-031-00

Gentlemen:

Enclosed is Licensee Event Report 91-031-00 for Comanche Peak Steam Electric Station Unit 1, "Containment Ventilation Isolation Due to Overconservative Radiation Monitor Setpoint".

Sincerely,

William J. Cahill, Jr.

By:   
William G. Gulderson  
Manager, Site Licensing

NH/tg

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

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NRC FORM 366				U.S. NUCLEAR REGULATORY COMMISSION				APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92					
<b>LICENSEE EVENT REPORT (LER)</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.					
Facility Name (1) <b>COMANCHE PEAK - UNIT 1</b>								Docket Number (2) <b>015101010141415</b>		Page (3) <b>1</b> OF <b>016</b>			
Title (4) <b>CONTAINMENT VENTILATION ISOLATION DUE TO OVERCONSERVATIVE RADIATION MONITOR SETPOINT</b>													
Event Date (5)			LER Number (6)			Report Date (7)			Other Facilities Involved (8)				
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Numbers			
12	06	91	91	031	0	01	06	92	N/A	015101010111			
									N/A	015101010111			
Operating Mode (9)		This report is submitted pursuant to the requirements of 10 CFR 5. (Check one or more of the following) (11)											
3		20.402(b)		20.405(c)		<input checked="" type="checkbox"/> 50.73(a)(2)(vi)		73.71(b)					
Power Level (10)		20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)					
01010		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		Other (Specify in Abstract below and in Text, NRC Form 966A)					
		20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)							
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)							
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(ix)							
Licensee Contact For This LER (12)													
Name <b>D.E. BUSCHBAUM</b>								Area Code <b>8117</b>		Telephone Number <b>819171-15181511</b>			
Complete One Line For Each Component Failure Described in This Report (13)													
Cause	System	Component	Manufacturer	Reportable To NRRDS	Cause	System	Component	Manufacturer	Reportable To NRRDS				
Supplemental Report Expected (14)										Expected Submission Date (15)	Month	Day	Year
<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 typewritten lines) (16)

At 0909 on December 6, 1991, the Containment was being vented to decrease containment pressure. At 0918 the Containment Particulate Iodine, Gaseous (PIG) Monitor Gas Channel spiked into an alarm condition. As a result, a containment ventilation isolation automatically occurred. At 0956 on December 6, 1991, the containment ventilation isolation signal was reset. Containment atmospheric conditions were normal.

The root cause of this event was that the PIG gas channel alarm setpoint was set too low. Furthermore, the administrative procedure establishing the alarm setpoint calculation requirements did not consider alarm setpoint calculation with no detectable noble gas activity in the containment atmosphere. Corrective action included recalculation of the alarm setpoint and a procedure change.

NRC FORM 306A  <b>LICENSEE EVENT REPORT (LER)</b> <b>TEXT CONTINUATION</b>		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 RECORD 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) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Year</td> <td style="width: 10%;">Sequential Number</td> <td style="width: 10%;">Revision Number</td> </tr> <tr> <td>91</td> <td>013</td> <td>1</td> </tr> </table>	Year	Sequential Number	Revision Number	91	013	1	Page (3)
Year	Sequential Number	Revision Number							
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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) including the Reactor Protection System (RPS)(EIS:(JC)).

**B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT**

On December 6, 1991, Comanche Peak Steam Electric Station (CPSES) Unit 1 was in Mode 3, Hot Standby, with the Reactor Coolant System (RCS)(EIS:(AB)) at a temperature of 556 degrees Fahrenheit and pressure of 2235 pounds per square inch-gage.

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

Not applicable - no structures, systems or components were inoperable at the start of the event that contributed to the event.

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

At 0909 on December 6, 1991, the Containment (EIS:(NH)) was being vented to decrease containment pressure. At 0918 the Containment Particulate, Iodine, Gaseous (PIG) Monitor Gas Channel (EIS:(RA)(IK)) spiked into an alarm condition. As a result, a containment ventilation isolation automatically occurred. At 0956 on December 6, 1991, the containment ventilation isolation signal was reset. Containment atmospheric conditions were normal.

An event or condition that results in an automatic actuation of any ESF, including the RPS, is reportable within 4 hours under 10CFR50.72(b)(2)(ii). At 1021 on December 6, 1991, the Nuclear Regulatory Commission Operations Center was notified of the event via the Emergency Notification System.

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

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

At 0918 on December 6, 1991, numerous alarms were received on the Control Room Radiation Monitor Display Panel (EHS:(PL)(IL)). The Reactor Operator (utility, licensed) immediately responded to the alarms and recognized the containment ventilation isolation.

## **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 failed components with multiple functions that affected this event.

### **D. FAILED COMPONENT INFORMATION**

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

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

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## **III. ANALYSIS OF THE EVENT**

### **A. SAFETY SYSTEM RESPONSES THAT OCCURRED**

The following safety system actuated automatically as a result of the event. The appropriate components within this system operated as designed.

Containment Ventilation (EHS:(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**

Operability of the PIG ensures that the associated action will be initiated when the radiation level monitored by each channel reaches its setpoint. The alarm setpoints are calculated and adjusted in accordance with the methodology and parameters in the CPSES Offsite Dose Calculation Manual (ODCM) to insure that action will be initiated prior to exceeding the limits of 10CFR Part 20.

In this event, the PIG was operable and there was no detectable noble gas activity in the containment atmosphere. The event occurred due to the alarm setpoint being set too low and not due to an actual condition. Therefore, this event did not adversely affect the health and safety of the public.

## **IV. CAUSE OF THE EVENT**

### **ROOT CAUSE**

The PIG gas channel alarm setpoint was set too low. The requirement for establishing the alarm setpoint is controlled by an administrative procedure, and calculated in accordance with ODCM methodology. The procedure allows the alarm setpoint to be established at a value corresponding to three times the steady state background value, provided the calculated value does not exceed ODCM limits. Prior to venting the containment on



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December 6, 1991, the PIG gas channel alarm setpoint was established. However, with no detectable noble gas activity in the containment atmosphere, the steady state background value was very small. This resulted in a calculated alarm setpoint which was very close to actual background levels. The administrative procedure establishing the alarm setpoint calculation requirements did not consider alarm setpoint calculation with no detectable noble gas activity in the containment atmosphere.

## V. CORRECTIVE ACTIONS

### A. CORRECTIVE ACTIONS TO PREVENT RECURRENCE

#### ROOT CAUSE - 1

The PIG gas channel alarm setpoint was set too low.

#### CORRECTIVE ACTION - 1

The setpoint was recalculated and reestablished to allow containment ventilation.

#### ROOT CAUSE - 2

The administrative procedure establishing the alarm setpoint calculation requirements did not consider alarm setpoint calculation with no detectable noble gas activity in the containment atmosphere.

#### CORRECTIVE ACTION - 2

A procedure change has been issued establishing a default alarm setpoint well above background levels when there is no detectable noble gas activity in the containment atmosphere. This default setpoint will still ensure compliance with the 10CFR Part 20 release requirements.

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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## B. CORRECTIVE ACTIONS TAKEN ON GENERIC CONCERNS IDENTIFIED AS A DIRECT RESULT OF THE EVENT

### GENERIC CONSIDERATION

The possibility exists for this event to occur with other radiation monitor setpoints.

### CORRECTIVE ACTION

The administrative procedure for radioactive effluent releases will be reviewed to ensure that actual plant conditions are incorporated into setpoint calculations, as necessary.

## VI. PREVIOUS SIMILAR EVENTS

Licensee Event Report (LER) 90-038, "Gas Channel Alarm Initiated A Containment Ventilation Isolation Due to Stagnant Air Pockets In Containment", described an event in which a containment ventilation isolation was initiated due to a high radiation alarm from the containment PIG gas channel resulting from an over-conservative setpoint (based on steady state noble gas levels in containment). Procedures for establishing PIG alarm setpoints were revised to eliminate the requirement to establish a setpoint for this monitor during Mode 5, Cold Shutdown, and Mode 6, Refueling. An evaluation of the methodology for establishing the containment PIG setpoint during Modes 1 through 4 concluded that the use of a conservative setpoint based on the steady state noble gas activity was appropriate. Under normal circumstances, with measurable activity indicated for the gas channel, an appropriate setpoint can be determined without experiencing nuisance alarms. However, the condition of no noble gas activity in containment following an outage, was not anticipated and resulted in this event (LER 91-031).

## VII. ADDITIONAL INFORMATION

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