



TU ELECTRIC

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May 29, 1991

William J. Cahill, Jr.  
Executive Vice President

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)  
DOCKET NO. 50-445  
CONDITION PROHIBITED BY THE PLANT'S TECHNICAL SPECIFICATIONS  
LICENSEE EVENT REPORT 91-017-00

Gentlemen:

Enclosed is Licensee Event Report 91-017-00 for Comanche Peak Steam Electric Station Unit 1, "Personnel Error Resulting in Failure to Satisfy Technical Specification Staggered Test Basis Requirement."

Sincerely,

William J. Cahill, Jr.

JAA/bm

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

9106030339 910529  
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NRC FORM 306		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 OF 018</b>
Title (4) <b>PERSONNEL ERROR RESULTING IN FAILURE TO SATISFY TECHNICAL SPECIFICATION STAGGERED TEST BASIS REQUIREMENT</b>					
Event Date (5)		LER Number (6)		Report Date (7)	
Month	Day	Year	Year	Sequential Number	Revision Number
04	29	91	91	0117	010
				Other Facilities Involved (8)	
				Facility Names	
				N/A	
				Docket Numbers	
				015101010111	
				N/A	
				015101010111	
Operating Mode (9) <b>5</b>					
This report is submitted pursuant to the requirements of 10 CFR 50. (Check one or more of the following): (11)					
Power Level (10) <b>01010</b>		20.402(b)		20.405(c)	
		20.405(a)(1)(i)		50.73(a)(2)(iv)	
		20.405(a)(1)(ii)		50.73(a)(2)(v)	
		20.405(a)(1)(iii)		50.73(a)(2)(vi)	
		20.405(a)(1)(iv)		50.73(a)(2)(vii)(A)	
		20.405(a)(1)(v)		50.73(a)(2)(vii)(B)	
		20.405(a)(1)(vi)		50.73(a)(2)(viii)	
				50.73(a)(2)(ix)	
Licensee Contact For This LER (12)					
Name <b>T.A. HOPE</b>				Telephone Number	
<b>COMPLIANCE SUPERVISOR</b>				Area Code	
				<b>81117</b>	
				<b>819171-16131710</b>	
Complete One Line For Each Component Failure Described in This Report (13)					
Cause	System	Component	Manufacturer	Reportable To NRC	
Supplemental Report Expected (14)					Expected Submission Date (15)
<input type="checkbox"/> Yes (If yes, complete Expected Submission Date)					Month
<input checked="" type="checkbox"/> No					Day
					Year
Abstract (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)					
<p>On April 29, 1991, a Quality Assurance auditor discovered that scheduling of Technical Specification surveillance testing of the containment hydrogen monitors had not satisfied the staggered test basis requirement. Early testing of one train resulted in subsequent testing of the alternate train at a subinterval which exceeded the specified subinterval plus maximum allowable extension. The event was caused by personnel error during test scheduling. Corrective actions included training and program changes.</p>					

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		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Year</td> <td style="width: 35%;">Sequential Number</td> <td style="width: 50%;">Revision Number</td> </tr> <tr> <td>1991</td> <td>0117</td> <td>010</td> </tr> </table>	Year	Sequential Number	Revision Number	1991	0117	010	012 OF 018
Year	Sequential Number	Revision Number							
1991	0117	010							
COMANCHE PEAK - UNIT 1 015101010141415911 - 0117 - 010 012 OF 018 <small>Text: If more space is required, use additional Form 366A's (17)</small>									
<p><b>I. DESCRIPTION OF THE REPORTABLE EVENT</b></p> <p><b>A. REPORTABLE EVENT CLASSIFICATION</b></p> <p>Any operation prohibited by the plant's Technical Specifications.</p> <p><b>B. PLANT OPERATING CONDITIONS BEFORE THE EVENT</b></p> <p>On April 29, 1991, (discovery date) Comanche Peak Steam Electric Station (CPS), Unit 1 was in Mode 5, Cold Shutdown, with the Reactor Coolant System at a temperature of approximately 100 degrees F and atmospheric pressure.</p> <p><b>C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT</b></p> <p>There were no inoperable structures, systems, or components that contributed to the event.</p> <p><b>D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES</b></p> <p>On April 29, 1991, at approximately 1330 CST, a Quality Assurance auditor (utility, non-licensed) was performing an audit of Technical Specification surveillance activities with a staggered test basis requirement. Technical Specification 4.6.4.b requires that each containment hydrogen monitoring channel be demonstrated operable at least once per 92 days on a staggered test basis. Contrary to the requirement, the implementing test procedures for the hydrogen monitors (EHS:(MON)(BB)) had not been performed in accordance with the staggered test basis criterion for test performances accomplished between December, 1990, and March 1991. The requisite subinterval for a 92 day test frequency is 46 days. A subinterval of 76 days occurred between Train A testing on December 27, 1990, and Train B testing on March 13, 1991.</p>									

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

While performing a Quality Assurance audit of surveillance activities with a staggered test basis requirement, an auditor noted that on one occasion testing of the containment hydrogen monitors had been scheduled such that the staggered test basis subinterval, including the maximum allowable extension, had been exceeded.

**II. COMPONENT OR SYSTEM FAILURES**

**A. FAILED COMPONENT INFORMATION**

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

**B. FAILURE MODE, MECHANISM, AND EFFECT OF EACH FAILED COMPONENT**

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

**C. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE**

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

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

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

**1.1. ANALYSIS OF THE EVENT**

**A. SAFETY SYSTEM RESPONSES THAT OCCURRED**

Not applicable - there were no safety system responses associated with this event.

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

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

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

The Containment Hydrogen Monitoring System monitors the hydrogen partial pressure in several well ventilated areas of the Containment Building (E11S:(NH)) in order to obtain typical values for hydrogen gas concentration. The system makes up part of the combustible gas control system for containment and is used to monitor the concentration of hydrogen in the containment atmosphere. Failure to perform the testing on a staggered interval increases the length of time a common cause system failure may go undetected. The successful testing of the subject monitors demonstrates they were at all times capable of performing their intended safety function of providing operators with indication of containment hydrogen gas concentrations. The short term failure to satisfy the staggered test basis requirements for these surveillance tests did not adversely affect the safe operation of CPSES Unit 1 or the health and safety of the public.

#### IV. CAUSE OF THE EVENT

##### A. IMMEDIATE CAUSE

Rescheduling of surveillance testing of Train B of the containment hydrogen monitoring system was not performed following the early performance of testing on Train A.

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## B. ROOT CAUSE

The time elapsed between scheduling of the surveillance activity and discovery of the event contributes to the difficulty in positively determining the root cause because the individual performing the associated scheduling activities cannot be identified with complete certainty. Evaluation leads to the conclusion, however, that the most probable cause is the lack of awareness by personnel scheduling surveillance testing activity of the staggered test basis requirement associated with the containment hydrogen monitors. When scheduling one train of the system for surveillance testing prior to the actual due date, rescheduling the alternate train is necessary to maintain the required subinterval between trains when a staggered test basis requirement exists. Testing on Train A was scheduled early; however, the scheduler did not recognize the need to reschedule the alternate train. This resulted in a subinterval of 76 days between Train A testing and Train B testing (Figure 1).

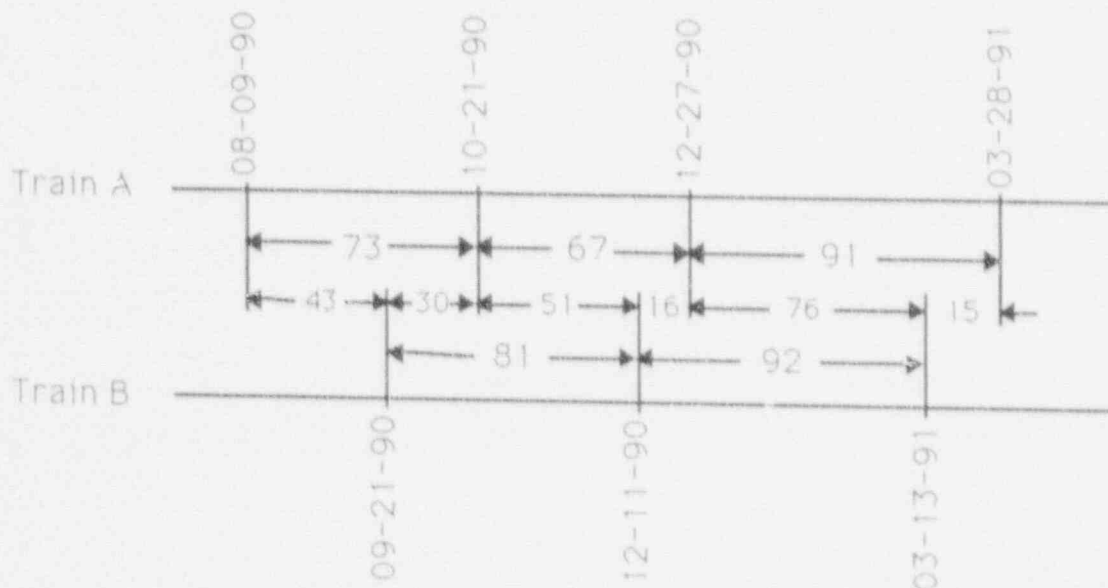


FIGURE 1



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### C. CONTRIBUTING FACTORS

1. The work order generated by the automated surveillance scheduling system did not flag the activity as having a staggered test basis requirement. A request had been submitted to update the surveillance database so that work orders to perform surveillance tests with a staggered test basis requirement are clearly annotated. However, the request had not yet been implemented on the print date of the work order exceeding the subinterval.
2. There was no departmental requirement for personnel involved with surveillance scheduling to review operating experience related to staggered test basis requirements or procedure enhancements to the administrative procedure controlling the surveillance program.
3. Software limitations of the automated surveillance scheduling system render the system ineffective at maintaining the required subinterval for systems with a staggered test basis requirement. As a result, manual scheduling in conjunction with personnel experience is required to maintain the required interval and subinterval.
4. Manual scheduling of surveillance activities with a staggered test basis requirement did not receive a verification within the responsible work group to confirm accuracy of the scheduling information. This allowed the backup surveillance test coordinator (utility, non-licensed) to make a change to the test schedule without benefit of review by the designated surveillance test coordinator (utility, non-licensed).

### V. CORRECTIVE ACTIONS

#### IMMEDIATE

Compliance with the staggered test basis requirement was restored by rescheduling surveillance testing of the affected equipment.

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**ACTIONS TO PREVENT RECURRENCE****Root Cause:** Personnel error

**Corrective Action :** Personnel involved with scheduling within the responsible work group will be trained on previous plant experience related to staggered test basis requirements and the application of the requirement to surveillance tests for which the group is responsible. Required reading for schedulers within the responsible work group will improve overall knowledge of programmatic controls related to staggered test basis requirements.

**Contributing Factor :** Work orders not annotated.

**Corrective Action :** The automated surveillance scheduling system has been changed to flag the staggered test basis requirement on the work order generated for each test performance.

**Contributing Factor :** Inadequate review of operating experience.

**Corrective Action :** Corrective action for the root cause of the event will address this contributing factor.

**Contributing Factor :** Software limitations

**Corrective Action :** The automated scheduling system will be reviewed to determine the feasibility of including the capability for scheduling activities with a staggered test basis requirement.

**Contributing Factor :** Verification not required

**Corrective Action :** Changes or additions to the manual scheduling system used by the responsible work group will be checked for compliance with the related requirements.



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## VI. PREVIOUS SIMILAR EVENTS

LER 90-024 describes a failure to schedule surveillance testing so as to satisfy the staggered test basis requirement for testing of the containment purge and hydrogen purge isolation valves. The cause of the event was personnel error; plant personnel responsible for establishing the testing interval for the surveillance overlooked the staggered test basis requirement during initial test and scheduling development. As part of the corrective action, a review was performed to ensure that all other surveillances with a staggered test basis requirement had been performed on a staggered test basis. This was accomplished by examining historical data to confirm that the staggered test basis requirement is acknowledged and implemented in activity scheduling. The review confirmed that surveillance testing of the containment hydrogen monitors was being performed on a staggered test basis; therefore, no specific action was assigned to the group with responsibility for this activity.