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June 29, 1992

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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  
EMERGENCY DIESEL GENERATOR START AND LOAD-RUN  
EVENTS DURING SURVEILLANCE TESTING  
SPECIAL REPORT NO. 1-SR-92-001-00

Gentlemen:

Enclosed is a 30 day special report submitted in accordance with CPSES  
Unit 1 Technical Specification 4.8.1.1.3, "Electrical Power Supply A. C.  
Sources".

Sincerely,

William J. Cahill, Jr.

JET/tg

c - R. D. Martin, Region IV  
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TU Electric  
Comanche Peak Steam Electric Station, Unit 1

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Emergency Diesel Generator Start and Load-Run Events  
During Surveillance Testing

## 1.0 Report Requirement

This Special Report is submitted in accordance with Comanche Peak Steam Electric Station (CPSES) Unit 1 Technical Specification 4.8.1.1.3, "Electrical Power Supply A.C. Sources". Specification 4.8.1.1.3 requires that all Diesel Generator failures, valid or invalid, be reported to the commission in a Special Report pursuant to Technical Specification 6.9.2 within 30 days.

## 2.0 Event Description

On May 28, 1992, at approximately 1005 CDT, Train B Emergency Diesel Generator (EDG) 1-02 (Component Tag Number CP-MEDGEE-02) was manually started from the Control Room by Operations personnel for performance of the monthly surveillance test in accordance with Technical Specification 4.8.1.1.2. Shortly after closure of the diesel generator breaker, an engine trip occurred due to apparent high vibration at the engine rear vibration sensor. Troubleshooting revealed vibration sensor failure, and the component was replaced.

At approximately 1718, a second start was attempted to allow calibration of the newly installed vibration sensor. Approximately one minute into the run, the engine tripped on low lube oil pressure. Subsequent troubleshooting revealed the cause of the second trip to be a malfunction lube oil pressure switch. The pressure switch was replaced, and EDG 1-02 was prepared for a third run.

On May 29, 1992, at approximately 0815, a third run attempt was made to calibrate the vibration sensor and to perform the monthly Technical Specification surveillance test on EDG 1-02. The test was successfully completed with the EDG achieving the design rated speed, frequency, and voltage within the specified time limit, and carrying the prescribed load for the required time. Following completion of the test run, with the EDG unloaded and disconnected from the bus, a spurious engine shutdown terminated the run.

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Extensive investigation revealed a shutdown rather than the occurrence of a protective trip. Emergency and normal (bypassed in emergency mode) trips were verified not to be involved. Additional investigation performed with the control circuitry deenergized, focused on various control circuit elements. No switches were found out of position, and no problems were found with the related wires, terminations, or contacts. The pneumatic logic was inspected, and no abnormal conditions such as venting or leaks were found. The engine was restarted with all trips active, and the related portion of the test procedure was repeated with additional operating and engineering personnel observing. No abnormalities were observed. Verification of the absence of personnel error was inconclusive.

### 3.0 Corrective Actions

Failure trending will determine an appropriate replacement schedule to minimize the potential for age-related sensor degradation. Future EDG runs will be monitored for abnormalities within the circuits functioning to shut down the engine.

### 4.0 Evaluation Results

The two engine trips experienced on May 28 have been definitely attributed to spurious operation of trips that are bypassed in the emergency operating mode. The conditions leading to those trips would not have resulted in the failure of the diesel generator unit to start, accelerate and load during a response to an actual emergency start signal. Consistent with the guidance of regulatory position C.2.e of Regulatory Guide 1.108, the two trips are not considered valid tests or failures.

The engine shutdown following successful completion of the start and run test on May 29 did not involve the failure of the EDG to start, accelerate, and assume the design-rated load, within and for the time prescribed, during an emergency or a valid test. Subsequent review of the trip and shutdown circuits did not reveal a condition which would have resulted in the failure of the diesel generator unit to start, accelerate, and load during a response to an actual emergency start signal. The event is not considered a valid, invalid, or nonvalid failure.

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On May 28 and 29, EDG 1-02 was unavailable (unable to respond to a valid emergency start signal) during two separate periods totaling 20 hours and 8 minutes. The current test interval requires that the unit be demonstrated operable at least once per 31 days by verifying that the unit starts from ambient conditions and achieves design rated speed, frequency, and voltage within the specified time limit. The current test interval is in conformance with the schedule of Regulatory Position C.2.d of Regulatory Guide 1.108.

The lack of clarity in Regulatory Guide 1.108 has resulted in continued confusion regarding the reporting requirements related to EDG start and load-run events. Therefore, this report is being submitted although the events described are not considered reportable when evaluated against Regulatory Position C.2.e of Regulatory Guide 1.108.