TU ELECTRIC

C. Lance Terry
Group Vice President

Log # TXX-96376
File # 10200
Ref. # 10CFR50.73(a)(2)(iv)

May 28, 1996

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)-UNIT 2
DOCKET NOS. 50-446
MANUAL OR AUTOMATIC ACTUATION OF ENGINEERED SAFETY FEATURES
LICENSEE EVENT REPORT 446/96-005-00

Gentlemen:

Enclosed is Licensee Event Report (LER) 96-005-00 for Comanche Peak Steam Electric Station Unit 2, "Both Main Feedwater Pumps Tripped while Resetting Control System Due to Personnel Error."

Sincerely,

C L Terry

C. L. Terry

OB:ob
Enclosure

cc: Mr. L. J. Callan, Region IV
Ms. L. J. Smith, Region IV
Resident Inspectors, CPSES

IE22 1/1

P. O. Box 1002 Glen Rose, Texas 76043

Enclosure.to TXX- 96376

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 4/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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Title (4)

BOTH MAIN FEEDWATER PUMPS TRIPPED WHILE RESETTING CONTROL SYSTEM DUE TO PERSONNEL ERROR

Event Date (5) Month	Day	Year	LER Number (6) Year	Sequential Number	Revision Number	Report Date (7) Month	Day	Year	Other Facilities Involved (8) Facility Name	Docket Numbers
									CPSES UNIT 1	05000445
05	05	96	96	- 005 -	00	05	28	96	N/A	05000

Operating Mode (9): 3

Power Level (10): 0

This report is submitted pursuant to the requirements of 10 CFR §: (Check one or more) (11)

[ ] 20.2201 (b)	[ ] 20.2203 (a) (2) (v)	[ ] 50.73 (a) (2) (i)	[ ] 50.73 (a) (2) (viii)
[ ] 20.2203 (a) (1)	[ ] 20.2203 (a) (3) (i)	[ ] 50.73 (a) (2) (ii)	[ ] 50.73 (a) (2) (x)
[ ] 20.2203 (a) (2) (i)	[ ] 20.2203 (a) (3) (ii)	[ ] 50.73 (a) (2) (iii)	[ ] 73.71
[ ] 20.2203 (a) (2) (ii)	[ ] 20.2203 (a) (4)	[X] 50.73 (a) (2) (iv)	[ ] OTHER
[ ] 20.2203 (a) (2) (iii)	[ ] 50.36 (c) (1)	[ ] 50.73 (a) (2) (v)	Specify in Abstract below
[ ] 20.2203 (a) (2) (iv)	[ ] 50.36 (c) (2)	[ ] 50.73 (a) (2) (vii)	or in NRC Form 366A

Licensee Contact For This LER (12)

Name	Telephone Number (Include Area Code)
Stephen L. Ellis - I&C Maintenance Manager	(817)897-8422

Complete One Line For Each Component Failure Described in This Report (13)

Cause	System	Component	Manufacturer	Reportable To NPRDS	Cause	System	Component	Manufacturer	Reportable To NPRDS
				N					

Supplemental Report Expected (14)

				Month	Day	Year
[ ] YES (If yes, completed EXPECTED SUBMISSION DATE)	[X] NO		EXPECTED SUBMISSION DATE (15)			

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On May 5, 1996, at approximately 12:55 p.m. Central Standard Time (CST), Comanche Peak Steam Electric Station(CPSES) Unit 2 was in Mode 3 near the end of the 2RFO2 refueling outage. Instrument and Control technicians and the General Electric Control Systems Technical representative were restoring the system following testing on Unit 2 Main Feedwater Pump turbine control system. Two out of three Central Processing Units for the Main Feedwater Pumps were hard booted successfully, during the booting of the third Central Processing Unit an inadvertent trip signal was generated for both Main Feedwater Pumps. This signal caused an auto start of the Motor Driven Auxiliary Feedwater Pump.

TU Electric believes that this event was caused due to an oversight with respect to complete restoration of the second Central Processing Unit prior to hard booting the third Central Processing Unit. TU Electric is enhancing the existing guidance for the Central Processing Unit and system restoration.

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1. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

An event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature (ESF) including the Reactor Protection System (RPS).

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On May 5, 1996, at approximately 12:55 p.m. CST, Comanche Peak Steam Electric Station (CPSES) Unit 2 was in Mode 3, preparing for startup of the unit.

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 May 5, 1996, at approximately 12:00 noon, CPSES Shift Manager (utility, licensed) was informed by the Instrument and Control (I&C) personnel (utility, non-licensed), that the vendor representative for the newly installed Main Feedwater Pump (EIIS:(P)(SJ)) controls (EIIS:(PMC)(SJ)) had requested access to the Central Processing Units (CPU) (EIIS:(CPU)(SJ)) to reset the Units following the completion of the testing. The Shift Manager and the Unit Supervisor (utility, licensed) cautioned the I&C personnel that as long as two out of three CPUs were in service, it would not cause a trip signal. The I&C personnel and the vendor representative assured the Shift Personnel that the three CPUs will be reset one at a time.

On May 5, 1996, at approximately 12:55 p.m., Instrument and Control technicians and the computer vendor representative started resetting the CPUs on Unit 2 Main Feedwater Pump control system. Two out of three Central Processing Units for the Main Feedwater Pumps were rebooted [reset] successfully, during the booting of the third Central

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Processing Unit an inadvertent trip signal was generated for both Main Feedwater Pumps. This signal caused an auto start (an ESF actuation) of the Motor Driven Auxiliary Feedwater Pumps. All four Motor Driven Auxiliary Feedwater flow control valves (EIIS:(FCV)(BA)) shifted to auto and opened. Steam Generator blowdown was also isolated. (The Turbine Driven Auxiliary Feedwater pump does not automatically start upon a trip of both main feedwater pumps). It should be noted that prior to the event both Motor Driven Auxiliary Feedwater Pumps were operating and were supplying the required flow to the Steam Generators.

An event or condition that results in an automatic or manual actuation of any ESF, including the RPS, is reportable within 4 hours under 10CFR50.72(b)(2)(ii). At approximately 2:26 p.m. on May 5, 1996, the Nuclear Regulatory Commission Operations 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

The Control Room Staff received a MFP trip alarm.

II. <u>COMPONENT OR SYSTEM FAILURES</u>

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.

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

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

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

Both Auxiliary Feedwater (AFW) (EIIS:(P)(BA)) pumps started.

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

Not applicable - there was no safety system train inoperability that resulted from this event.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

A loss of normal feedwater resulting from pump failure, valve malfunction, or loss of offsite power leads to a reduction in the capability of the secondary system to remove heat generated in the reactor core. These transients are analyzed in section 15.2.7 of the CPSES Final Safety Analysis Report (FSAR) in which conservative assumptions are made in the analysis to minimize the energy removal capability of the Auxiliary Feedwater system. These transients are assumed to be initiated from full power.

The May 5, 1996, event occurred with the reactor at zero percent power and producing only a relatively small amount of decay heat. All systems and components functioned as designed. The event is bounded by the FSAR accident analysis which assumes an initial power level of 102 percent and the worst single failure in the Auxiliary Feedwater system for a loss of feedwater event (but all 3 AFPs initially available). The FSAR analysis shows that a loss of normal feedwater does not adversely affect the core, the reactor coolant systems, or the steam system. Therefore, this event, which occurred in Mode 3 with a small amount of decay heat and is bounded in severity by the FSAR

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analyses, presented no threat to the health and safety of the public. An additional aspect of the event concerns the potential for overfeeding the steam generators with the cold auxiliary feedwater, which could result in the insertion of positive reactivity to the core through a reduction in RCS temperatures. This scenario is similar to, and bounded in severity by, the increase in feedwater flow event presented in FSAR 15.1.2. Analyses of this event from both hot zero power and full power conditions are presented. However, in these scenarios, the excessive feedwater flow is terminated by automatic feedwater isolation. For the actual event, manual termination of the auxiliary feedwater flow would be required in order to stop the effects of the RCS overcooling and to prevent steam generator overfill. Due to the relatively small flow rates from the two motor-driven auxiliary feedwater pumps, sufficient time was available for the reactor operators to take the appropriate action. Therefore, from this additional aspect, the health and safety of the public was unaffected.

IV. CAUSE OF THE EVENT

TU Electric believes that the personnel performing the CPU rebooting (reset) task did not adequately verify that the second CPU previously rebooted was properly restored and functional prior to rebooting the third CPU. The MFP trip signal was generated because the system sensed two out of three CPUs were not functional. This condition caused the Motor Driven Auxiliary Feedwater pump to auto-start, indicating an ESF actuation.

V. CORRECTIVE ACTIONS

Immediate action by the Control Room personnel was to gain control of the Auxiliary Feedwater flow to prevent excessive fill of the steam generators. TU Electric will enhance the applicable procedures to provide guidance and caution with respect CPU reset.

VI. PREVIOUS SIMILAR EVENTS

There have been no previous reportable events at CPSES, where the cause of the event was similar to the May 5, 1996 event.