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Ref. # 10CFR50.73(a)(2)(iv)(A)

CPSES-200301964
Log # TXX-03131
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September 23, 2003

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-446
ACTUATION OF AUXILIARY FEEDWATER SYSTEM
LICENSEE EVENT REPORT 446/03-002-00

Gentlemen:

Enclosed is Licensee Event Report (LER) 03-002-00 for Comanche Peak Steam Electric Station Unit 2, "Actuation Of Auxiliary Feedwater System Caused by Loss of Main Feedwater Pumps due to Low Suction Pressure."

This communication contains no new licensing basis commitments regarding CPSES Units 1 and 2.

A member of the **STARS** (Strategic Teaming and Resource Sharing) Alliance

Callaway • Comanche Peak • Diablo Canyon • Palo Verde • South Texas Project • Wolf Creek

IE22

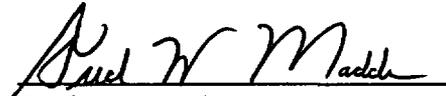
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Sincerely,

TXU Generation Company LP

By: TXU Generation Company LP
Its General Partner

C. L. Terry
Senior Vice President and Principal Nuclear Officer

By: 
Fred W. Madden
Nuclear Licensing Manager

CLW:clw
Enclosure

c- B. S. Mallett, Region IV
W. D. Johnson, Region IV
M. C. Thadani, NRR
Resident Inspectors, CPSES

NRC FORM 366 (7-2001)			U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 07/31/2004 Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bje1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.					
LICENSEE EVENT REPORT (LER)											
Facility Name (1) COMANCHE PEAK STEAM ELECTRIC STATION UNIT 2				Docket Number (2) 05000446		Page (3) 1 OF 7					
Title (4) ACTUATION OF AUXILIARY FEEDWATER SYSTEM											
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 Name	Docket Numbers	
07	25	03	03	002	00	09	23	03	N/A	05000	
This report is submitted pursuant to the requirements of 10 CFR : (Check all that apply) (11)											
1	20.2201(b)		20.2203(a)(3)(i)			50.73(a)(2)(i)(C)		50.73(a)(2)(vii)			
12	20.2201(d)		20.2203(a)(3)(ii)			50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(A)			
12	20.2203(a)(1)		20.2203(a)(4)			50.73(a)(2)(ii)(B)		50.73(a)(2)(viii)(B)			
12	20.2203(a)(2)(i)		50.36(c)(2)(i)(A)			50.73(a)(2)(iii)		50.73(a)(2)(ix)(A)			
12	20.2203(a)(2)(ii)		50.36(c)(1)(ii)(A)			X 50.73(a)(2)(iv)(A)		50.72(a)(2)(x)			
12	20.2203(a)(2)(iii)		50.36(c)(2)			50.73(a)(2)(v)(A)		73.71(a)(4)			
12	20.2203(a)(2)(iv)		50.46(a)(3)(ii)			50.73(a)(2)(v)(B)		73.71(a)(5)			
12	20.2203(a)(2)(v)		50.73(a)(2)(i)(A)			50.73(a)(2)(v)(C)		OTHER			
12	20.2203(a)(2)(vi)		50.73(a)(2)(i)(B)			50.73(a)(2)(v)(D)		Specify in Abstract below or in NRC Form 366A			
Licensee Contact For This LER (12)											
Name Timothy P. Clouser - Shift Operations Manager						Telephone Number (Include Area Code) (254)897-5365					
Complete One Line For Each Component Failure Described in This Report (13)											
Cause	System	Component	Manufacturer	Reportable To EPIX		Cause	System	Component	Manufacturer	Reportable To EPIX	
				N							
Supplemental Report Expected (14)						EXPECTED SUBMISSION DATE (15)			Month	Day	Year
YES (If YES, complete EXPECTED SUBMISSION DATE)				X NO							

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

On July 25, 2003, Comanche Peak Steam Electric Station (CPSES) Unit 2 was in Mode 1, Power Operations, operating at 12 % power. At 1318 hours operators were valving in a string of low pressure feedwater heaters which had been bypassed since July 9, 2003. A low suction pressure trip of the operating Main Feedwater Pump occurred resulting in an auto start of both Motor Driven Auxiliary Feedwater Pumps.

TXU Generating Company LP's (TXU Energy) evaluation has determined that this event was caused by the existence of a void in an isolated low pressure feedwater heater string, miscommunication, and not using applicable procedures. Corrective actions include revising applicable procedures, a post-job critique, issuing a Lessons Learned, and re-enforcing Operations management expectations for procedure use.

All times in this report are approximate and Central Daylight Time (CDT) unless noted otherwise.

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Facility Name (1) COMANCHE PEAK STEAM ELECTRIC STATION UNIT 2	Docket 05000446	LER Number (6)			Page(3) 2 OF 7
		Year 03	Sequential Number 002	Revision Number 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

I. DESCRIPTION OF THE REPORTABLE EVENT**A. REPORTABLE EVENT CLASSIFICATION**

Any event or condition that resulted in manual or automatic actuation of the auxiliary or emergency feedwater system.

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On July 25, 2003, at 1317 hours, Comanche Peak Steam Electric Station (CPSES) Unit 2 was in Mode 1, Power Operations, operating at 12 percent power.

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

This event occurred during secondary plant startup and power escalation in progress following a sixteen day unplanned unit outage.

On July 25, 2003, at 1030 hours, CPSES Unit 2 entered Mode 1, power operations. At 1317 hours the unit was at approximately 12 percent power, Main Feedwater Pump (MFP) 2-B [EIIS: (SJ)(P)] was in service supplying feedwater to all 4 Steam Generators [EIIS: (SG)(SB)]. Main Feedwater Pump 2-A was in the tripped condition since it was not required.

On July 25, 2003, at 1318 hours, the Reactor Operator (RO) (utility, licensed) established flow through low pressure Feedwater Heaters [EIIS: (SJ) (HX)] 5B and 6B and both Motor Driven Auxiliary Feedwater Pumps [EIIS: (BA)(P)] auto started in response to a low suction pressure trip of the operating Main Feedwater Pump 2-B. The operators manually tripped the Main Turbine [EIIS: (TA)(TRB)] to minimize steam demand and stabilize the plant, and manually inserted the control rods to reduce reactor power.

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

Operators (utility, licensed) in the Unit 2 Control Room received a low pressure heater bypass trouble alarm which was followed by MFP trip alarms.

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 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 Motor Driven Auxiliary Feedwater (AFW) pumps started in response to a low suction pressure trip of the operating MFP.

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

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

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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 events are analyzed in section 15.2.7 of the CPSES Updated Final Safety Analysis Report (UFSAR) which uses conservative assumptions in the analysis to minimize the energy removal capability of the Auxiliary Feedwater system.

The July 25, 2003 event occurred with the reactor at approximately 12 percent power. All systems and components functioned as designed. The event is bounded by the UFSAR 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. There were no safety system functional failures associated with this event. The UFSAR 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 posed no threat to the health and safety of the public.

IV. CAUSE OF THE EVENT

During secondary plant startup and prior to occurrence of this July 25, 2003 event, Unit 2 Feedwater (FW) Heaters 5B and 6B had remained bypassed due to a Hi-Hi level indication on FW Heater 6B. After the Hi-Hi level indication light cleared, the operations shift believed the system to be water solid and took action to place the bypassed FW Heater string into service by opening the FW Heater 5B & 6B isolation valves.

TXU Energy's evaluation determined that the causes for this event are:

(1) Introduction of a void in FW Heaters 5B and 6B. TXU Energy believes that a void had formed in FW Heaters 5B and 6B during the period of time they were isolated following the June 9, 2003, unplanned shutdown. When the heater string was returned to service, a void was introduced to the suction of MFP 2-B resulting in a pressure transient sufficient to trip the pump.

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(2) Verbal miscommunication during shift turnover. The oncoming shift understood from turnover that flow had been established through FW Heaters 5B and 6B by the previous shift, but the string subsequently isolated again on a FW Heater 6B Hi-Hi level indication. The previous shift had in fact only established flow through FW Heaters 5A and 6A and had not attempted to place FW Heaters 5B and 6B in service due to the FW Heater 6B Hi-Hi level indication. This misunderstanding led oncoming shift personnel involved in the event to believe that the "B" string heaters were water solid and therefore, in their judgment, a fill and vent evolution prior to unisolating the string was not required.

(3) Required procedures were not used. Procedure IPO-003B "Power Operations," step 5.4.34 states: "IF 2-HS-2611/12, FW HTR 5A & 6A/5B & 6B BYP VLV is OPEN, THEN restore 5/6 Heaters to service per SOP-303B." Procedure SOP-303B "Condensate System" includes provisions for filling/venting a feedwater heater string prior to returning it to service. For this event, procedure IPO-003B was being directly referenced as appropriate. Once the FW Heater 6B Hi-Hi level indication light extinguished, isolated FW Heaters 5B and 6B were returned to service without the use of procedure SOP-303B and without first filling/venting the heater string. Restoration of this heater string without reference to any procedure violated ODA-407 "Guideline on Use of Procedures."

V. CORRECTIVE ACTIONS

Immediate corrective actions taken for this event include:

1. Filled and vented feedwater heaters 5B and 6B in accordance with the provisions of SOP-303B "Condensate System."
2. Pressurized feedwater heaters 5B and 6B in accordance with SOP-303B to verify no excessive leakage present. No excessive leakage was identified.
3. Performed a Condensate System walkdown for possible water hammer effects. No system damage was identified.

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Actions to prevent recurrence of this event, as included in the CPSES Corrective Action Program, are as follows:

1. A post-job critique has been documented and a Lessons Learned memorandum has been issued.
2. Procedures associated with this event have been revised to ensure that procedures are directly referenced during component manipulations.
3. Management expectations for procedure use, ODA-407, "Guideline on Use of Procedures," and how to handle in-process evolutions at shift turnover are being re-enforced.

TXU Energy is considering other corrective actions, including revising appropriate Nuclear Training Lesson Notes and enhancing Licensed Operator simulator training to further emphasize removing/restoring feedwater heaters from/to service and to provide reference to previous in-house operating experience.

VI. PREVIOUS SIMILAR EVENTS

There was one previous similar event at CPSES which occurred February 4, 1996 (LER 445/96-003-00). In this previous event, the feedwater heater string was intentionally being drained for the purpose of reducing hotwell level. This draining evolution resulted in a significant void in the heater.

The cause of the 1996 event was lack of procedural guidance for reducing hotwell inventory via draining to the Turbine Building sump such that low pressure feedwater heater strings are properly restored to service (the draining evolution includes the opening of feedwater heater string drain cooler drain valves which allows air to enter the heater strings). Corrective actions included: (a) enhancement to procedures SOP-303A/B "Condensate System" and IPO-003A/B "Power Operations"; and (b) issuance of a Lessons Learned memorandum "Restoring an Isolated Heater String" within the Operations Department. The Lessons Learned memorandum discussed the need to properly fill and vent feedwater heaters in accordance with SOP-303A/B prior to returning them to service in order to prevent a water hammer event.

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Had the provisions of procedure SOP-303B been followed, this July 25, 2003 event would not have occurred. As discussed above under corrective actions, TXU Energy is considering other corrective actions, including revising appropriate Nuclear Training Lesson Notes and enhancing Licensed Operator simulator training to further emphasize removing/restoring feedwater heaters from/to service and to provide reference to previous in-house operating experience.