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Ref: 10CFR50.73(a)(2)(i)(B)

CPSES-200301986
Log # TXX-03153
File # 10010

October 16, 2003

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
CONDITION PROHIBITED BY TECHNICAL SPECIFICATIONS
LICENSEE EVENT REPORT 445/03-004-00

Gentlemen:

Enclosed is Licensee Event Report (LER) 03-004-00 for Comanche Peak Steam Electric Station Units 1 and 2, "Inadvertent Technical Specification 3.0.3 Entry due to Inoperable Control Room Air Conditioning System Trains."

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

TEA

TXX-03153

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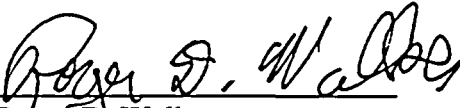
Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC,
Its General Partner

M. R. Blevins

Senior Vice President and Principal Nuclear Officer

By: 
Roger D. Walker
Regulatory Affairs Manager

GLM/gm

Enclosures

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
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2>		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 20553-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-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.

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Title (4)
CONDITION PROHIBITED BY TECHNICAL SPECIFICATIONS

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
08	20	03	03	004	00	10	16	03	CPSES UNIT 2	05000446 05000

Operating Mode (9)	1	This report is submitted pursuant to the requirements of 10 CFR: (Check all that apply) (11)							
Power Level (10) 100		20.2201(b)	20.2203(a)(3)(i)	50.73(a)(2)(i)(C)	50.73(a)(2)(vii)				
		20.2201(d)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(A)				
		20.2203(a)(1)	20.2203(a)(4)	50.73(a)(2)(ii)(B)	50.73(a)(2)(viii)(B)				
		20.2203(a)(2)(i)	50.36(c)(2)(i)(A)	50.73(a)(2)(iii)	50.73(a)(2)(ix)(A)				
		20.2203(a)(2)(ii)	50.36(c)(1)(ii)(A)	50.73(a)(2)(iv)(A)	50.72(a)(2)(x)				
		20.2203(a)(2)(iii)	50.36(c)(2)	50.73(a)(2)(v)(A)	73.71(a)(4)				
		20.2203(a)(2)(iv)	50.46(a)(3)(ii)	50.73(a)(2)(v)(B)	73.71(a)(5)				
		20.2203(a)(2)(v)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(C)	OTHER				
	20.2203(a)(2)(vi)	X 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 Terry L. Marsh - Work Control Manager	Telephone Number (Include Area Code) 254-897-8222

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 August 20, 2003, Comanche Peak Steam Electric Station (CPSES) Units 1 and 2 were both in Mode 1 operating at approximately 100 percent power. At 0434, combined maintenance activities on Unit 1 and Unit 2 Structures, Systems and Components resulted in a Technical Specification (TS) 3.0.3 condition on Units 1 and 2 when both trains of the Control Room Air Conditioning System (CRACS) became inoperable as outlined by the TS. The inoperable conditions and TS 3.0.3 entry criteria were not initially recognized. As a result, the shutdown actions of Limiting Condition for Operation (LCO) 3.0.3 were not met within the specified time limits.

TXU Generation Company LP (TXU Energy) believes that the causes of this event were Operators failure to directly reference the Safety Function Determination Program (SFDP) Support System Reference Guide when completing the operability review for clearances being implemented during the shift, over-reliance by the Operators on the Probabilistic Risk Assessment (PRA) reviews to detect potential TS 3.0.3 conditions, and over-reliance by the Operators on the Operations Work Control Group to detect potential TS 3.0.3 conditions during the preparation of the work schedule. Corrective actions included the restoration of the inoperable equipment allowing exit from LCO 3.0.3, issuing a Shift Order regarding performance of SFDP evaluations, and issuing Lessons Learned on this event to all system/outage schedulers and all Reactor Operators and Senior Reactor Operators.

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

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

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

Any operation or condition prohibited by the plant's Technical Specifications (TS).

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On August 20, 2003, Comanche Peak Steam Electric Station (CPSES) Units 1 and 2 were both in Mode 1 operating at approximately 100 percent power.

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

Other than the inoperable equipment described below, there were no other structures, systems, or components that were inoperable at the start of the event that contributed to the event.

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

The CPSES Control Room is common to both Units 1 and 2. There are two 50 percent capacity air conditioning units that make up a single Train of the Control Room Air Conditioning System [EIS:(VI)]. All four Control Room Air Conditioning System (CRACS) units share common ductwork. CRACS units X-01 and X-02 comprise Train A and CRACS units X-03 and X-04 comprise Train B. Normal alignment for CRACS support systems is as follows:

Train A CRACS Unit and Supporting SSCs:

Unit 1 Train A CRACS unit X-01
Unit 1 Train A Diesel Generator
Unit 1 Train A Component Cooling Water

Unit 2 Train A CRACS unit X-02
Unit 2 Train A Diesel Generator
Unit 2 Train A Component Cooling Water

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Train B CRACS Unit and Supporting SSCs:

Unit 1 Train B CRACS unit X-03
 Unit 1 Train B Diesel Generator
 Unit 1 Train B Component Cooling Water

Unit 2 Train B CRACS unit X-04
 Unit 2 Train B Diesel Generator
 Unit 2 Train B Component Cooling Water

Normal Component Cooling Water (CCW) alignment is as indicated above but the capability exists to align either Unit's CCW to either associated train CRACS unit (e.g. Unit 2 Train A CCW can be aligned to both CRACS units X-01 and X-02). Similarly, either Unit's Train related Diesel Generator [EIIS:(EK)(DG)] can be aligned to the associated Train CRACS unit (e.g. Unit 1 Train A Diesel Generator (DG) can supply CRACS units X-01 or X-02). It is not possible to align the opposite Unit DG to the associated Train CCW in the other Unit.

The four CRACS units utilize two temperature controllers [EIIS:(VI)(TC)] (one per each train). If the control power is removed from CRACS units X-01 or X-03 (which house and provide power to the temperature controllers) the corresponding Train CRACS unit (X-02 and X-04, respectively) will either not be able to start (if the temperature controller was in a no cooling required configuration when de-energized) or will start and run in the last position it was in before being de-energized, which would not allow the CRACS unit to automatically control temperature in the control room envelope.

CPSSES Technical Specification Limiting Condition for Operation (LCO) 3.8.1 Condition B exists for one Diesel Generator inoperable. Condition B.2 requires that within four hours from the discovery of Condition B, concurrent with the inoperability of redundant required feature(s), the required feature(s) supported by the inoperable Diesel Generator are to be declared inoperable when its required redundant feature(s) is inoperable.

LCO 3.7.11 Condition A exists for one CRACS Train inoperable. The inoperable CRACS Train is to be restored within 30 days or the affected Unit must be in Mode 3 within six hours. LCO 3.7.11 Condition E exists for two CRACS trains inoperable. If two Trains are inoperable, the capability to remove 100 percent of the required heat load (equivalent to one single operable Train) must be verified immediately and one CRACS Train must be restored within 30 days. If these required actions are not met, then both Units 1 and 2 must enter TS 3.0.3 immediately. LCO 3.0.3 requires that the affected Unit(s) be in Mode 3 within seven hours.

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On August 17, 2003, at 0340, CRACS unit X-03 was taken out of service for a modification. This modification required the removal of control power to X-03. As discussed above, removing the control power from unit X-03 also made unit X-04 inoperable because the temperature controller was in a no cooling required configuration when de-energized. This allowed the fan to run but would not allow the compressor to run on the start of unit X-04. With one CRACS Train inoperable, TS LCO 3.7.11 Condition A was entered.

On August 20, 2003, at 0355, the Unit 1 Train A Diesel Generator was taken out of service for maintenance, and TS LCO 3.8.1 Condition B was entered. Since the Diesel Generator was inoperable for more than 4 hours, Condition B.2 was entered. As previously discussed, Condition B.2 requires declaring required features supported by the Diesel Generator (which includes Unit 1 Train A CCW and the X-01 CRACS unit) inoperable. However, the requirement to declare the X-01 CRACS unit inoperable at 0755 per Condition B.2 was not recognized at that time by Shift Operations personnel (utility, licensed).

On August 20, 2003, at 0434, Unit 2 Train A Safety Chilled Water [EHS:(KM)] was taken out of service rendering Unit 2 Train A Component Cooling Water inoperable due to the loss of CCW pump room cooling. With Unit 2 Train A CCW inoperable, X-02 CRACS unit also became inoperable. With CRACS units X-02, X-03, and X-04 inoperable, both Trains of the CRACS were inoperable, and at 0434 CPSES met the conditions for entry into TS 3.0.3. However, the requirement to declare the X-02 CRACS unit inoperable, and the need to enter TS 3.0.3 at this time were not recognized by Shift Operations personnel (utility, licensed).

On August 20, 2003, at 0930, during his review of the Unit 1 Train A Diesel Generator work package, the Unit 1 Supervisor (utility, licensed) questioned the need for post maintenance testing and the availability of a power source for the CRACS in the event of a loss of offsite power. Consultation with the Unit 2 Supervisor (utility, licensed) and Operations Support personnel (utility, licensed) resulted in the determination at 1020 that it was necessary to enter TS 3.0.3 at that time and within one hour initiate actions to place both CPSES Units in Mode 3 within 7 hours (1720 on August 20, 2003).

On August 20, 2003, at 1024, Unit 2 Train A Safety Chilled Water was returned to operable status returning Unit 2 Train A CCW and CRACS unit X-02 to operable conditions. However, TS 3.0.3 conditions remained in effect as a result of only one 50 percent CRACS unit (X-02) being operable.

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On August 20, 2003, at 1317, Unit 1 Train A Diesel Generator was declared operable, restoring Unit 1 Train A CCW and CRACS X-01 to operable status. This restored CRACS Train A, the TS 3.0.3 conditions were cleared and the LCO was exited. Therefore, both CRACS Trains were inoperable in accordance with the TS from 0434 to 1317. Because both CPSES Units were not in Mode 3 by 1134 (be in Mode 3 within 7 hours per LCO 3.0.3), a reportable violation of TS occurred. It should be noted that even though both CRACS Trains were technically inoperable, two CRACS units remained in service cooling the Control Room for the duration of this event.

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

During his review of the Unit 1 Train A Diesel Generator work package, the Unit 1 Supervisor (utility, licensed), through discussions with the Unit 2 Supervisor (utility, licensed) and Operations Support personnel (utility, licensed), discovered that both Trains of the CRACS were inoperable.

II. COMPONENT OR SYSTEM FAILURES

A. FAILURE MODE, MECHANISM, AND EFFECTS OF EACH FAILED COMPONENT

Not applicable – No component or system failures were identified during this event.

B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

Not applicable – No component or system failures were identified during this event.

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

Not applicable – No component or system failures were identified during this event.

D. FAILED COMPONENT INFORMATION

Not applicable – No component or system failures were identified during this event.

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III. ANALYSIS OF THE EVENT**A. SAFETY SYSTEM RESPONSES THAT OCCURRED**

Not applicable – No safety system responses occurred as a result of this event.

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

On August 20, 2003, both CRACS Trains were inoperable in accordance with the TS from 0434 to 1317.

C. SAFETY CONSEQUENCES AND IMPLICATIONS

The CRACS provides temperature control for the control room during normal and emergency operation. The CRACS consists of two redundant trains that provide cooling and heating of recirculated control room air. Each CRACS train includes two heating and cooling units, instrumentation, and controls to provide for control room temperature control. Each cooling unit provides 50 percent of the maximum heat removal capability for its respective Train.

The design basis of the CRACS is to maintain the control room temperature during normal operations and for 30 days of continuous occupancy following a design basis accident with a loss of offsite power. The CRACS components are arranged in redundant, safety related trains. During normal and emergency operation, the CRACS maintains the temperature between 70 degrees F and 80 degrees F. A single active failure of a component of the CRACS, with a loss of offsite power, does not impair the ability of the system to perform its design function. Redundant detectors and controls are provided for control room temperature control. The CRACS is capable of removing sensible and latent heat loads from the control room, which include consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment operability.

During the course of events on August 20, 2003, CRACS Train B (CRACS units X-03 and X-04) was declared inoperable for maintenance activities. Several concurrent and separate maintenance activities then resulted in both of the cooling units comprising CRACS Train A being made inoperable, one as a result of cascading and the other for emergency operation following a loss of offsite power. In fact, at one time all of the CRACS units were inoperable per the TS. The environmental conditions (e.g., outside temperature, ultimate heat sink temperature) were not sufficient to ensure that the remaining unit could remove the sensible and latent heat loads from the control room; therefore, continued control room equipment operability in the event of a design basis accident with a loss of offsite power could not be assured.

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Had a design basis event occurred, one CRACS unit would have continued operating for some period of time even though one of its support systems was conditionally unavailable. This would have provided time to shift the support systems to an alternate source. Even with only one cooling unit available, it is anticipated that the rate of temperature increase in the control room would have been slow enough to allow timely operator action to restore a second cooling unit prior to overheating control room equipment. Because both Train A cooling units remained in operation throughout the duration of the event, control room temperatures were maintained within acceptable limits. There were no safety system functional failures associated with this event. Based on this analysis it was concluded that this event did not adversely affect the safe operation of CPSES Unit 1 and 2 or the health and safety of the public.

IV. CAUSE OF THE EVENT

TXU Energy believes that the causes of this event were:

1. Operators' failure to directly reference the Safety Function Determination Program (SFDP) Support System Reference Guide when completing the operability review for clearances being implemented during the shift. Operators' expectations for this process were that the SFDP evaluations would be done by mentally reviewing the logic without direct reference to the logic diagrams in the SFDP Support System Reference Guide.
2. Over-reliance by the Operators on the Probabilistic Risk Assessment (PRA) reviews to detect potential TS 3.0.3 conditions. Actual PRA examination of operating with all 4 CRACS units out of service indicates only a slight increase in the risk of core damage frequency and would not highlight a TS operability problem.

In addition, the modification on the Train B CRACS unit X-03 was performed during a normal Train A workweek. This caused the work schedulers to fail to recognize potential problems with system interaction affecting the Train that was in service. Also, Scheduling personnel did not recognize that removing control power to the X-03 unit also rendered the X-04 unit inoperable.

3. Over-reliance by the Operators on the Operations Work Control Group to detect potential TS 3.0.3 conditions during the preparation of the work schedule. The work schedule had been reviewed and approved by a number of personnel, including Senior Reactor Operators that maintain an operator license, and these approvals provided a false sense of security that may have reduced the rigor that the Unit Supervisors used to review the work schedule.

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V. CORRECTIVE ACTIONS

Immediate corrective actions taken for this event include:

1. Restoring inoperable equipment (Unit 2 Train A CCW, Unit 1 Train A Diesel Generator, CRACS units X-01 and X-02) allowing exit from LCO 3.0.3.
2. Issuing a Shift Order requiring the direct reference of the SFDP Support System Reference Guide during performance of SFDP reviews for any Train A inoperability while CRACS unit X-03 is out of service.
3. A historical review was conducted to identify any other potential conditions that could have existed in the past placing the Units in TS 3.0.3. One additional instance was identified, however, the time duration of this instance was such that the reportability threshold was not exceeded.
4. Any potentially conflicting activities for the week of August 25, 2003, were rescheduled to preclude this type of event from occurring.

Actions to preclude recurrence, as included in the CPSES Corrective Action Program, are as follows:

1. A Lessons Learned was issued to alert the system and outage schedulers of the problems encountered during this event.
2. A Lessons Learned will be issued on this event to all Reactor Operators and Senior Reactor Operators.
3. The implementation of an automated computer program that would recognize potential TS operability conflicts with removing equipment from service will be considered.
4. Operations and Work Control procedures and guidelines will be reviewed with consideration of the problems encountered during this event and revised as required.
5. A modification was performed to maintain CRACS unit X-04 operable when the X-03 control power is de-energized and a similar modification is planned for CRACS units X-01 and X-02.
6. The Training Department will consider adding Operator initial and requalification training on this event.

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VI. PREVIOUS SIMILAR EVENTS

There have been no other previous similar reportable events during the last 3 years.