



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

CPSES-200002763
Log # TXX-00211
File # 10200

November 10, 2000

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) UNIT 2
DOCKET NO. 50-446
CONDITIONS PROHIBITED BY TECHNICAL SPECIFICATIONS
LICENSEE EVENT REPORT 446/00-003-00

Gentlemen:

Enclosed is Licensee Event Report (LER) 00-003-00 for Comanche Peak Steam Electric Station Unit 2, " Core Alterations Had Continued While A Required Technical Specification Source Range Monitor Was Inoperable." There were no safety system functional failures identified as a result of this event. Additionally, this event was evaluated using the NRC's Significant Determination Process and was determined to be of very low safety significance.

D029



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There are no new licensing based commitments in the communication.

Sincerely,

C. L. Terry

By: 

J. J. Kelley, Jr.
Vice President – Nuclear
Engineering & Support

OAB/jrh

Enclosure

cc - E. W. Merschoff, Region IV
J. I. Tapia, Region IV
Resident Inspectors, CPSES

NRC FORM 366 (4-95)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 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)		

Facility Name (1) COMANCHE PEAK STEAM ELECTRIC STATION UNIT 2	Docket Number (2) 05000446	Page (3) 1 OF 5
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Title (4)
CORE ALTERATIONS HAD CONTINUED WHILE A REQUIRED TECHNICAL SPECIFICATION SOURCE RANGE MONITOR WAS INOPERABLE

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	
10	13	00	00	003	00	11	10	00	CPSES UNIT 1	05000445	
									05000		

Operating Mode (9) 0	This report is submitted pursuant to the requirements of 10 CFR: (Check one or more) (11)										
Power Level (10) 0	<input type="checkbox"/>	20.2201 (b)	<input type="checkbox"/>	20.2203 (a) (2) (v)	<input checked="" type="checkbox"/>	50.73 (a) (2) (i)	<input type="checkbox"/>	50.73 (a) (2) (viii)			
	<input type="checkbox"/>	20.2203 (a) (1)	<input type="checkbox"/>	20.2203 (a) (3) (i)	<input type="checkbox"/>	50.73 (a) (2) (ii)	<input type="checkbox"/>	50.73 (a) (2) (x)			
	<input type="checkbox"/>	20.2203 (a) (2) (i)	<input type="checkbox"/>	20.2203 (a) (3) (ii)	<input type="checkbox"/>	50.73 (a) (2) (iii)	<input type="checkbox"/>	73.71			
	<input type="checkbox"/>	20.2203 (a) (2) (ii)	<input type="checkbox"/>	20.2203 (a) (4)	<input type="checkbox"/>	50.73 (a) (2) (iv)	<input type="checkbox"/>	OTHER			
	<input type="checkbox"/>	20.2203 (a) (2) (iii)	<input type="checkbox"/>	50.36 (c) (1)	<input type="checkbox"/>	50.73 (a) (2) (v)	<input type="checkbox"/>	Specify in Abstract below or in NRC Form 366A			
<input type="checkbox"/>	20.2203 (a) (2) (iv)	<input type="checkbox"/>	50.36 (c) (2)	<input type="checkbox"/>	50.73 (a) (2) (vii)	<input type="checkbox"/>					

Licensee Contact For This LER (12)	
Name RAFAEL FLORES - SYSTEM ENGINEERING MANAGER	Telephone Number (Include Area Code) 254-897-5590

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)				EXPECTED SUBMISSION DATE (15)		Month	Day	Year
YES (If YES, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/>	NO						

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

Following reactor shutdown as a part of the fifth refueling outage of Unit 2 (2RF05), on September 30, 2000 it was discovered that Source Range Neutron Flux Monitor 2-N-0031 (EIIS: (CHA)(JC)) read lower than source range neutron flux monitor 2-N-0032 (EIIS: (CHA)(JC)). Troubleshooting was performed and the affected monitor was deemed operable. On October 8, 2000 core alterations began.

On October 13, 2000, at approximately 2:41 p.m., an analysis of data extracted from the plant computer determined that Source Range Neutron Flux Monitor 2-N-0031 may not have provided valid neutron indication prior to commencing core alterations as required by the Comanche Peak Steam Electric Station's Technical Specification.

The troubleshooting identified a degraded connector. The degraded components were replaced and the Source Range Neutron Flux Monitor 2-N-0031 was declared operable. The specific cause of the degraded connector was not identified.

NRC FORM 366
(4-95)

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

I. DESCRIPTION OF THE REPORTABLE EVENT

A. **REPORTABLE EVENT CLASSIFICATION**

This Licensee Event Report is submitted as a violation of conditions prohibited by plants Technical Specification pursuant to the requirements of 10CFR50.73 (a)(2)(i)(B).

B. **PLANT OPERATING CONDITIONS PRIOR TO THE EVENT**

On October 13, 2000, when this issue was discovered Comanche Peak Steam Electric Station (CPSSES) Unit 2 was in no Mode condition (i.e., after Mode 6).

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

On October 13, 2000, Source Range Neutron Flux Monitor 2-N-0031 (EIS: (CHA)(JC)) was declared inoperable. There were no other inoperable structures, systems or components that contributed to event.

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

Following reactor shutdown as a part of the fifth refueling outage of Unit 2 (2RF05), on September 30, 2000 it was discovered that Source Range Neutron Flux Monitor 2-N-0031 (EIS: (CHA)(JC)) read lower than source range neutron flux monitor 2-N-0032 (EIS: (CHA)(JC)). A "loss of detector voltage" alarm was also in and did not reset as expected. Both problems were corrected by manipulating the test/operate switch through its positions. It was determined at that time that operability of the source range neutron flux monitors was not affected based on the fact that the channels had passed their Mode 4 source range neutron channel check and signal conditioning.

On October 13, 2000, at approximately 2:41 p.m., the source range neutron flux monitor 2-N-0031 indicated 10 cps with the core off-loaded. Subsequent analysis of data extracted from the plant computer determined that source range neutron flux monitor 2-N-0031 may not have provided valid neutron indication during core alterations. The channel was subsequently declared inoperable. Technical Specification Limiting Condition for Operation LCO 3.9.3 requires that two source range neutron flux monitors be operable in MODE 6 and states that with one source range neutron flux monitor inoperable, core alterations must be immediately suspended. Therefore, based on the determination that Source Range Neutron Flux Monitor 2-N-0031 was not operable, commencement of defueling (i.e., core alterations) on October 8, 2000 constituted a violation of Technical Specification requirements.

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

TXU Electric Instrument and Control (I&C) Technicians (Utility, Non-Licensed) discovered this anomaly, when they were comparing the results of the Source Range Neutron Flux Monitor 2-N-0031 with the redundant Source Range Neutron Flux Monitor 2-N-0032. The I&C Technicians noted that Source Range Neutron Flux Monitor 2-N-0031 read significantly lower than Source Range Neutron Flux Monitor 2-N-0032. Additionally, it was noted that, during the shutdown as the counts decayed (neutron flux), Source Range Neutron Flux Monitor 2-N-0031 had leveled off at approximately 10 counts per seconds after the core had been offloaded.

II. COMPONENT OR SYSTEM FAILURES

A. FAILED COMPONENT INFORMATION

Source Range Neutron Flux Monitor 2-N-0031 assembly.
Model # NY-10032.
Manufacturer- Westinghouse

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

A degraded connector to the Source Range Neutron Flux Monitor 2-N-0031 was deemed to be the cause of the false background reading that masked valid neutron signals at the low flux levels associated with mode 6. This degraded condition led to the inability to accurately reflect the neutron count level during core movement.

C. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

A degraded connection to the Source Range Neutron Flux Monitor 2-N-0031 was deemed to be the probable cause for the false background condition that hindered the ability to accurately indicate changes in neutron flux at low levels.

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

Not applicable – there were no other systems or secondary functions associated by the failed components associated with this event.

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III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEMS THAT RESPONDED

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

B. DURATION OF SAFETY SYSTEM INOPERABILITY

Not applicable – there were no safety systems rendered inoperable due to this event.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

The safety related functions of the NIS source range detectors are documented in the Final Safety Analysis Report (FSAR) chapter 15 accident analyses. The source and intermediate range detector reactor trips provide backup protection for the rod withdrawal from sub-critical and rod ejection events. The power range detectors provide primary protection for the subject events. The source/intermediate range detectors need only demonstrate that shorting of the detector will not degrade the NIS through electrical failure during or following a design basis event. The source and intermediate range are under administrative controls during plant start-up and shutdown. During this event when the Source Range Neutron Flux Monitor 2-N-0031 read significantly lower than Source Range Neutron Flux Monitor 2-N-0032, the other Source Range Neutron Flux Monitor 2-N-0032 was operable. TXU Electric believes that even though the Source Range Neutron Flux Monitor 2-N-0031 was declared Inoperable it was functional and would have generated neutron High Flux Shutdown alarm. This conclusion is based on the correct signal response when a neutron source was introduced to the detector. Further, the specific core alterations involved the offload of the core at the end of life (EOL). As required by Technical Specification 3.9.1, the reactor cavity was filled with highly borated water to ensure that the reactor remained subcritical during all core alterations. There were no safety system functional failures identified as a result of this event. Additionally, this event was evaluated using the NRC's Significant Determination Process and was determined to be of low significance. Therefore, it was concluded that this event did not adversely impact the safe operation of CPSES or the health and safety of the public.

VI. CAUSE OF THE EVENT

A degraded condition with the connector may have caused the Source Range Neutron Flux Monitor 2-N-0031 to be inoperable during core alterations.

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V. CORRECTIVE ACTIONS

Immediate actions were to perform troubleshooting to determine the cause of the anomalous readings. Extensive troubleshooting efforts failed to positively identify the specific cause of the Source Range Neutron Flux Monitor malfunction. The degraded components were reworked/replaced and the Source Range Neutron Flux Monitor 2-N-0031 was declared operable.

VI. PREVIOUS SIMILAR EVENTS

There have been other previous events, which resulted in inoperable components due to equipment malfunctions. However, the causes of those events are sufficiently different than subject event such that the corrective actions taken for the previous events would have not prevented this event.