



TUELECTRIC

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December 13, 1995

C. Lance Terry
Group Vice President

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) - UNITS 1&2
DOCKET NOS. 50-445 AND 50-446
CONDITION PROHIBITED BY THE PLANT'S TECHNICAL SPECIFICATIONS
LICENSEE EVENT REPORT 445/95-005-00

Gentlemen:

Enclosed is Licensee Event Report (LER) 95-005-00 for Comanche Peak Steam Electric Station Units 1&2, "Power Operated Relief Valves Potentially Inoperable Due To Non-conservative Accumulator Set Points".

This condition was discovered on August 31, 1995 but was not determined to be reportable until November 13, 1995.

Sincerely,

C. L. Terry

GLM/glm
Enclosure

cc: Mr. L. J. Callan Region IV
 Mr. W. D. Johnson Region IV
 Resident Inspectors CPSES

9512180105 951213
PDR ADOCK 05000445
S PDR

NRC FORM 366 (4-95)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)		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.

FACILITY NAME (1) COMANCHE PEAK STEAM ELECTRIC STATION 1	DOCKET NUMBER (2) 05000445	PAGE (3) 1 OF 5
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TITLE (4)
 POWER OPERATED RELIEF VALVES POTENTIALLY INOPERABLE DUE TO NON-CONSERVATIVE SETPOINTS

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 NUMBER
08	31	95	95	-- 005	-- 00	12	13	95	CPSSES UNIT 2	05000446
									FACILITY NAME	DOCKET NUMBER
									N/A	05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
		20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)		
POWER LEVEL (10)	100	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)		50.73(a)(2)(iv)		OTHER		
		20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A		
		20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)				

LICENSEE CONTACT FOR THIS LER (12)

NAME JIMMY BARKER (MECHANICAL ENGR. MANAGER)	TELEPHONE NUMBER (Include Area Code) 817-897-8552
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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).	X	NO						

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

On August 31, 1995, at approximately 2:10 p.m. CDT, Units 1 and 2 of Comanche Peak Steam Electric Station (CPSSES) were in Mode 1 at 100% power.

Engineering personnel (utility, non-licensed) identified non-conservatism in the calculation that determined: 1) leakage rates for accumulator check valves associated with various air operated valves and the nitrogen accumulators for the pressurizer Power Operated Relief Valves (PORV) (EIIS:(RV)(AB)) and 2) the pressure switch alarm set points for these accumulators. After subsequent reviews of the accumulator low pressure alarm set points, compliance with CPSSES Technical Specification (TS) 3.4.8.3 could not reasonably be assumed to have occurred at all times in the past for Modes 4, 5 and 6, therefore, this event is being conservatively reported as a condition prohibited by TS.

The cause of this event was 1) non-conservative original design prior to licensing involving the selection of alarm setpoints for the PORV accumulators pressure switches and 2) untimely resolution of a previous deficiency document. Non-conservative alarm set points for all safety-related valve accumulators have been identified and are being corrected.

NRC FORM 366A (4-95)		U.S. NUCLEAR REGULATORY COMMISSION			
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION					
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		YEAR	SEQUENTIAL	REVISION	
COMANCHE PEAK STEAM ELECTRIC STATION 1	05000445	95	-- 005 --	00	2 OF 5
TEXT (If more space is required, use additional copies of NRC Form 366A) (1.7)					
I. DESCRIPTION OF THE REPORTABLE EVENT					
A. REPORTABLE EVENT CLASSIFICATION					
Any operation or condition prohibited by TS.					
B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT					
On August 31, 1995, Comanche Peak Steam Electric Station (CPSSES) Unit 1 and Unit 2 were in Mode 1, Power Operation, and operating at 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					
Not applicable - no structures, systems, or components were inoperable at the start of the event that contributed to the event.					
D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES					
<p>On August 31, 1995, at approximately 2:10 p.m. CDT, engineering personnel identified non-conservatism in the calculation that determined; 1) leakage rates for accumulator check valves associated with various air operated valves and the nitrogen accumulators for the pressurizer Power Operated Relief Valves (PORVs), and 2) the pressure switch alarm set points for these accumulators. Engineering performed evaluations which determined that, with the exception of the PORVs, the valves associated with these accumulators were operable. The PORV accumulator low pressure alarm set points would still assure operability during Modes 1, 2 and 3. However, for Modes 4, 5 and 6 the set points would not assure operability for all conditions. TS 3.4.8.3 requires at least 2 overpressure devices (2 PORVs, 2 Residual Heat Removal suction relief valves, or one of each) to be operable for Low Temperature Over Pressure Protection (LTOP) in Modes 4, 5, and 6 when the reactor vessel head is on (or not vented through a 2.98 sq. in. or larger vent). With one of two required devices inoperable in Mode 4, two devices must be restored to operable within 7 days and with one of two required devices inoperable in Modes 5 and 6, two devices must be restored to operable within 24 hours.</p>					

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

The PORV contribution to LTOP protection is the Cold Overpressure Mitigation System (COMS). Based on review of the accumulator sizing calculation, engineering determined that an initial accumulator pressure of 90 psig is required for PORV operability in Modes 4, 5 and 6. Although the nitrogen supply to the PORV accumulators is regulated to near 100 psig, this supply has occasionally been taken out of service during Modes 4, 5, and 6. Under these conditions, the accumulators would be recharged when the low pressure alarm is received. Therefore, the PORV accumulator pressure was potentially below the 90 psig required for COMS operability. Because the accumulator set point from initial licensing to December, 1993 (Unit 2) and March 1994 (Unit 1) was 75 psig (and subsequent to that 85 psig) it cannot be determined with reasonable assurance, even with an extensive review of Operation's records, when, and for how long, the nitrogen supply may have been isolated. TU Electric is conservatively assuming that, with at least one of the PORV's being credited toward LTOP operability, the nitrogen supply was isolated in the past for a period of time which would have allowed the PORV accumulator pressure to decrease below 90 psig for longer than the time allowed by TS 3.4.8.3 prior to the accumulator alarming at 75 psig. Regardless, CPSES TS require one train of RHR to be in operation in Modes 4, 5, or 6 which would assure that at least one RHR relief valve was in service.

Based on the above, compliance with TS 3.4.8.3 cannot reasonably be assumed to have occurred at all times in the past. Therefore, TU Electric is conservatively reporting this event as a condition prohibited by TS.

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

Engineering personnel (utility, non-licensed) identified non-conservatism in the calculation that determined; 1) leakage rates for accumulator check valves associated with various air operated valves and the nitrogen accumulators for the PORVs and 2) the pressure switch alarm set points for these accumulators.

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

II. 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 OPERABILITY

Although it cannot be conclusively determined that safety system trains were inoperable as a result of this event, TU Electric is conservatively assuming that the PORVs were inoperable for some period in the past longer than that allowed by Technical Specification 3.4.8.3.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

The effects of the reduced PORV nitrogen accumulator pressure are an increase in the PORV opening stroke time and a reduction in the number of PORV cycles which could be accommodated.

In the FSAR Chapter 15 accident analyses, the PORVs are credited only for the mitigation of a Steam Generator Tube Rupture (SGTR) event. In several of the other analyses, the PORVs are assumed to operate if their operation makes the transient more severe relative to the relevant event acceptance criteria; however, PORV operation is not required for accident mitigation. In the analysis of the SGTR accident, the reactor operators are assumed to manually open the PORVs in order to depressurize the Reactor Coolant System (RCS) to the pressure of the affected steam generator. This action minimizes or stops the primary-to-secondary break flow, thereby terminating the accident. In the SGTR analyses, because manual PORV control is assumed, the exact PORV stroke time is not important. In addition, calculations have demonstrated that adequate nitrogen pressure was available in the accumulators to allow the PORVs to perform their intended safety function in the mitigation of an SGTR accident. Therefore, it is concluded that the reduced PORV nitrogen accumulator pressure would not have adversely affected the conclusions of the SGTR analysis and the health and safety of the public would have been unaffected.

The PORVs are also credited in the analyses of the postulated LTOP events. The analyses of the LTOP events are used to develop the PORV set points used with the COMS. The purpose of the COMS, and the Residual Heat Removal (RHR) System suction relief valves if used for LTOP protection, is to supplement the normal plant administrative controls in order to prevent exceeding the reactor vessel pressure/temperature limits. These limits are calculated in accordance with Regulatory Guide 1.99, Revision 2, and satisfy the requirements of 10CFR50, Appendix G. In the development of the COMS/PORV set points, the proper operation of only one PORV is assumed in order to satisfy the single failure criterion.

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If the normal administrative controls were ineffective in the prevention of an LTOP event, and if one or both PORVs were being used for LTOP mitigation, the 10CFR50, Appendix G pressure/temperature limits could have been violated, either as a result of the slower PORV opening time or due to the inability to provide a sufficient number of PORV cycles before operator action to terminate the cause of the LTOP event could be credited. However, given the amount of conservatism inherent in the calculation of the pressure/temperature limits, it is engineering judgement that the potential overpressurization could be accommodated with no adverse effects on the integrity of the reactor vessel. Therefore, even if an LTOP event had occurred, the health and safety of the public would have been unaffected.

III. CAUSE OF THE EVENT

TU Electric believes that the cause of the event was; 1) non-conservative design in the original calculation used to determine the low pressure alarm set point for the PORV accumulators and the accumulator check valve leakage rates and 2) untimely resolution of a previous deficiency when originally identified in a December 13, 1989 deficiency document. The deficiency document was scheduled to be resolved prior to receipt of an Operating License for Units 1 and 2 and timely resolution could have prevented the potential for a Technical Specification violation. There have been no previous similar events at CPSES related to non-conservative PORV accumulator pressure set points.

IV. CORRECTIVE ACTION

- 1) The PORV nitrogen accumulator low pressure alarm set points are being raised to 90 psig. A review has been performed for all safety related accumulators used for valve actuation to verify that the appropriate set points are being used. Non-conservative set points identified during the review will be corrected. Operations has taken compensatory actions to ensure COMS operability is maintained until the PORV nitrogen accumulator low pressure alarm set points are changed. It should be noted that CPSES Units 1 and 2 have not been in Modes 4, 5, or 6 since August 31, 1995.
- 2) A site-wide priority scheme has recently been implemented for both deficiency documents and the documents or processes to which they are closed. The procedure governing the deficiency document resolution process has also been clarified with regards to closing a deficiency document to other documents or processes.