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April 14, 1997

C. Lance Terry
Group Vice President

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-445 and 50-446
NRC INSPECTION REPORT NOS. 50-445/96-17 and 50-446/96-17
RESPONSE TO NOTICE OF VIOLATION

TU Electric has reviewed the NRC's letter dated March 7, 1997, concerning the inspection conducted by your staff which was completed on February 1, 1997. The subject inspection report enclosed a Notice of Violation.

The NRC inspection report 50-445(446)/96-17 states that the corrective actions taken to prevent repetition of the April 4, 1993, Unit 2 grid synchronization event were not effective. TU Electric wishes to note that the 1993 event transpired two years prior to the current violation, and during that time no violations have occurred which could have reasonably been expected to have been prevented by our corrective actions for the 1993 event. NUREG-1600, "General Statement of Policy and Procedures for NRC Enforcement Actions," at § VII.B.2.(b) for "mitigation" appears to accept two years or two inspection periods in which no violations occur that could have been prevented by licensee's corrective action as a period that substantiates effective corrective actions. Given the referenced NUREG, TU Electric's corrective actions for the 1993 event appear to be effective. Notwithstanding, via Attachment 1, TU Electric accepts the violation and is responding to the specific Notice of Violation (445/9617-01).

The response to the subject inspection report was due on April 7, 1997; however, TU Electric requested an extension until April 14, 1997. The extension was discussed with Mr. Larry Yandell of the NRC Region IV staff.

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Should you have any comments or require additional information, please do not hesitate to contact Obaid Bhatti at (817)-897-5839 to coordinate this effort.

Sincerely,

C. L. Terry
C. L. Terry

By: *Roger D. Walker*
Roger D. Walker
Regulatory Affairs Manager

OB:ob
Attachment

cc: Mr. E. W. Merschhoff, Region IV
Mr. J. I. Tapia, Region IV
Resident Inspectors

RESPONSE TO THE NOTICE OF VIOLATION

RESTATEMENT OF THE VIOLATION (50-445(446)/9617-01)

10 CFR Part 50, Appendix B, Criterion XVI, states, in part, that measures shall be established to assure that significant conditions adverse to quality are promptly identified and corrected and that the cause of the condition is determined and corrective action taken to preclude repetition.

Contrary to the above, the corrective actions taken to prevent repetition of a 1993, Unit 2 grid synchronization event were not effective. The resultant reactor coolant system transient resulted in plant operation below the minimum temperature for criticality. A similar event, involving Unit 1, occurred November 16, 1996.

RESPONSE TO THE VIOLATION (50-445(446)/9617-01)

TU Electric accepts the violation and the requested information is provided herein.

1. Reason for Violation

Event description:

On November 16, 1996, Comanche Peak Steam Electric Station (CPSES) Unit 1 was in Mode 1 after completing its refueling outage number 5 (1RF05). Reactor power was between 6% and 10%. Shift Operations completed the preparatory steps to synchronize the main generator according to procedure IPO-003A "Power Operations" step 5.1.28.

The task was classified as an infrequent evolution. The Unit Supervisor (US) performed a general pre-job brief on the evolution for synchronizing the main generator and initiating loading. The brief discussed the governing procedure. Neither the US nor the BOP Operator had plant experience initiating a generator load with a new core. The US had performed the task once at core mid-life. The BOP Operator experience was based on simulator training during initial license training.

The BOP Operator's task was to establish turbine speed at 1800 RPM, place the generator voltage regulator in service, energize the generator synchroscope and adjust turbine speed to obtain synchroscope rotation at 2-4 rpm in the fast direction, close one generator output breaker when the synchroscope reached the 12 o'clock

position, raise the speed reference device until a positive increase in turbine megawatts (MW) was observed, adjust reactive load by raising the generator voltage regulator reference value, then loading the main turbine to between 30 MW and 100 MW by raising the speed reference device. These actions were outlined in procedure IPO-003A step 5.1.29.

At approximately 9:22 p.m., on November 16, 1996, after closing the generator output breaker, the BOP Operator started initiating a load increase by depressing the speed reference device. About 10 feet away, the US was observing the plant computer monitor for MWs. After approximately 15 seconds the BOP Operator noticed no MW increase. It should be noted that on the simulator (as experienced by the BOP Operator) the effects of the push-button speed reference device were seen within a few seconds. Since the BOP Operator was concerned about having a generator reverse power trip, he depressed the MW raise button on the speed reference device once more and watched for a MW increase. After approximately 10 seconds, again the BOP Operator noticed no MW increase and depressed the MW raise button one more time.

After several seconds, load began responding to the BOP Operator's action. MW load rapidly increased to about 150 MW with a corresponding Reactor Coolant System (RCS) response and alarms. RCS temperature, pressure, and pressurizer level decreased rapidly to below 551°F the minimum temperature for critical operation per Technical Specification (TS) 3.1.1.4, 2219 psi, and 17% level respectively. Chemical and Volume System (CVCS) letdown flow automatically isolated due to low pressurizer level.

The US directed reduction of MW load. The BOP Operator lowered turbine load to about 40 MW for the next three minutes. In parallel, rod withdrawal was initiated in increments to restore RCS temperature. The extra RODs took control of Steam Generator Level Control (SGWLC) and rod control and monitored RCS parameters.

At approximately 9:30 p.m. on November 16, 1996, normal RCS parameters were restored, the TS 3.1.1.4 action statement was exited and CVCS letdown was restored.

TU Electric Analysis:

TU Electric believes that the corrective actions for the previous event were effective, this conclusion is based on the several successful restarts since the 1993 event. However, the corrective actions for the previous events did not adequately consider the consequences of having a person whose experience and training are solely based on the simulator perform a sensitive task without being directly observed by a person experienced in the evolution. While Operating procedure IPO-003A contained cautions and direction on turbine loading as a result of the previous event, simulator and classroom training did not adequately prepare Operators to anticipate and respond to potential transient situations encountered during beginning-of-life startups.

2. Corrective Steps Taken and Results Achieved

The US directed the reduction of turbine load and Main Feedwater flow. The BOP Operator lowered turbine load to about 40 MW. At approximately 9:30 p.m., on November 16, 1996, normal RCS parameters were restored, the TS 3.1.1.4 action statement was exited and CVCS letdown was restored.

3. Corrective Actions Taken to Preclude Recurrence

The applicable procedure which provides guidance for synchronizing the main generator to the grid has been further enhanced to include cautions for beginning of life operations to minimize temperature transients induced in the RCS. A Simulator Action Request (SAR) was initiated and implemented to add a new temperature control (TC) malfunction to allow control of turbine load using the Speed Reference Device. The Turbine Generator model was modified to provide an approximate 20 second time delay from the time the speed reference raise push-button is depressed until the time load is actually increased. All crews have been trained on this event. TU Electric believes that these action will minimize the potential for recurrence.

4. Date of Full Compliance

TU Electric is in full compliance.

5. Additional Information

CPSES TS 3.1.1.4 states that the RCS lowest operating loop temperature shall be greater than or equal to 551°F. The required action is to restore temperature within its limit within 15 minutes or be in Hot Standby within the next 15 minutes. During this incident, CPSES was within the TS limiting condition for operation as RCS temperature was restored to greater than 551°F in less than 15 minutes.

CPSES has been analyzed for a number of events which postulate an increase in heat removal from the RCS by the secondary system. This event is bounded by the more severe limiting RCS cooldown events presented in FSAR Section 15.1 "Increase in Heat Removal by the Secondary System." Had the turbine loading continued, the reactor would have eventually been tripped by the High Power Range Neutron Flux - Low reactor trip function prior to the time that any fuel damage would have been predicted. Hence, this transient had no impact on the public health and safety.