TU ELECTRIC

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Ref. # 10CFR2.201
10CFR2.205

William J. Cahill, Jr.
Group Vice President

March 19, 1992

Mr. James Lieberman, Director
Office of Enforcement
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION - UNIT 1
DOCKET NO. 50-445
NRC INSPECTION REPORT NOS. 50-445/91-62 & 50-446/91-62
RESPONSE TO NOTICE OF VIOLATION AND PROPOSED
IMPOSITION OF CIVIL PENALTY (EA 91-189)

REF: NRC Letter from Robert D. Martin to
Mr. William J. Cahill, Jr., dated February 18, 1992

Gentlemen:

In the above reference, the NRC issued a Notice of Violation and Proposed Imposition of Civil Penalty of $25,000 related to Comanche Peak Steam Electric Station (CPSES). Three violations were identified. The first concerning misalignment of certain Residual Heat Removal (RHR) System valves, was identified as a Severity Level III violation and was the violation for which the civil penalty was proposed. The second and third violations concern certain manipulations of the Auxiliary Feedwater System contrary to procedural requirements and were each identified as Severity Level IV violations. TU Electric accepts these violations and agrees to pay the civil penalty. Attachment 2 provides TU Electric's reply to the Notice of Violation pursuant to 10 CFR 2.201 and the terms of the Notice. Enclosed is a check in the amount of 25,000 dollars.

As discussed in more detail in Attachment 2, TU Electric identified the RHR misalignment, promptly corrected the valve line up, and took extensive actions to preclude further recurrence. These actions included training on the lessons learned from this event and procedural enhancements.
TU Electric has also taken extensive corrective action for the other two violations identified in the notice.

Although the conditions which existed when the violations occurred did not pose a serious plant safety concern, TU Electric recognizes the importance of properly controlling plant configurations and takes these violations seriously.

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As described in Attachment 2, for future Mode changes, a period of quiet time will be built into the schedule to allow the operators and management to focus additional attention on mode changes and assure they are completed correctly.

If you have any questions, please contact me.

Sincerely,

William J. Cahill, Jr.

BSD/grp
Attachments
Enclosure

c - Mr. R. D. Martin, Region IV w/o enclosure
Resident Inspectors, CPSES (2) w/o enclosure
Mr. T. Bergman, NRR w/o enclosure

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
Texas Utilities Electric Company	)	Docket Nos. 50-445
	)	
(Comanche Peak Steam Electric Station, Unit 1)	)	

AFFIDAVIT

William J. Cahill, Jr. being duly sworn, hereby deposes and says that he is Group Vice President, Nuclear of TU Electric; that he is duly authorized to sign and file with the Nuclear Regulatory Commission this response to Notice of Violation and Proposed Imposition of Civil Penalty EA 91-189; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.

William J. Cahill, Jr.
Group Vice President, Nuclear

STATE OF TEXAS)
)
COUNTY OF SOMERVELL)

Subscribed and sworn to before me, a Notary Public, on this 19th day of March, 1992.

Patricia Wilson
Notary Public

PATRICIA WILSON
MY COMMISSION EXPIRES
March 16, 1993

NOTICE OF VIOLATION AND IMPOSITION OF CIVIL PENALTY
(EA-91-189)

I. VIOLATION ASSESSED A CIVIL PENALTY

CPSES Technical Specification 6.8.1 states, in part, that written procedures shall be established, implemented and maintained, covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, dated February 1978.

Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, recommends the establishment of general plant operating procedures, including procedures covering "Cold Shutdown to Hot Standby."

CPSES Unit 1 Integrated Plant Operating Procedure IPO-001A, Revision 10, "Plant Heatup From Cold Shutdown to Hot Standby," established by the licensee in accordance with the requirements of Technical Specification 6.8.1, requires in Section 5.3.5 that, prior to exceeding 350 degrees F in the Reactor Coolant System (RCS) (entry into Mode 3), the Residual Heat Removal (RHR) system be shut down and placed in standby readiness per SOP-102A, "Residual Heat Removal System."

CPSES System Operating Procedure SOP-102A, Revision 6, requires in Section 5.3, "Placing the RHRS in Standby Readiness," that CPSES verify that the prerequisites in Section 2.3 are met.

Section 2.3 of SOP-102A, Revision 6, requires, in part, that the control switch lineup per Attachment 2 is complete.

Attachment 2 of SOP-102A, Revision 6, "Control Switch Lineup Sheet - Standby Readiness," requires, in part, that the control switches for RHR Train A and B crosstie valves 8716-A and 8716-B are verified to be in the open position.

Contrary to the above, on December 4, 1991, the licensee placed CPSES Unit 1 in Mode 3, continued reactor coolant system heatup above 350 degrees F, and did not verify that the control switches for RHR Train A and B crosstie valves 8716-A and 8716-B were in the open position. On December 6, 1991, these control switches (and their associated valves) were discovered by licensee personnel to be in the closed position.

RESPONSE TO NOTICE OF VIOLATION

TU Electric accepts the violation and provides the following information, as requested:

1. Reason for the Violation

On December 4, 1991, following the first refueling outage, activities were in place to bring Comanche Peak Steam Electric Station (CPSES), Unit 1 into Mode 3 (Hot Standby). Various valves in the Emergency Core Cooling System (ECCS) and the Residual Heat Removal (RHR) System were placed in the required Mode 3 alignment in accordance with the plant's integrated operating procedures. Train A RHR was placed into the required Mode 3 alignment configuration (Standby Readiness) with crosstie valve 8716A open.

Train B of the RHR system was operating in the shutdown cooling mode. RHR crosstie valve 8716B was in the closed position in accordance with the alignment specified in the System Operating Procedure (SOP-102). In order to support Reactor Coolant System (RCS) boundary check valve testing, Train B of the RHR system was secured. Difficulties subsequently encountered during the check valve testing necessitated realignment of the RHR system to allow the discharge header to be filled. As a result, the Train A RHR crosstie valve (8716A) was closed. Following completion of the RCS check valve testing, the RHR pumps and system were vented to satisfy related surveillance requirements.

Upon completion of the check valve testing, the Unit 1 Supervisor directed the reactor operator to place the RHR system into a standby readiness configuration. The reactor operator, while placing the RHR system in standby readiness, inadvertently left the crosstie valves (8716A and 8716B) closed. Unit 1 subsequently entered into Mode 3 operation at 1:33 p.m. on December 4, 1991.

At 5:45 p.m. on December 6, 1991, while reviewing plant configurations on the Emergency Response Facility (ERF) computer, an engineer in the instrument and control (I&C) group observed that both crosstie valves were not open. The engineer notified the Independent Safety Engineering Group (ISEG) that the crosstie valve configuration did not appear to be proper and requested confirmation of the required valve position. After reviewing the System Operating Procedure to confirm the correct valve lineup, the ISEG engineer contacted the Unit 1 Shift Supervisor, who directed that the crosstie valves be opened. At 6:31 p.m., the crosstie valves were opened.

The root cause of this violation was personnel error. The reactor operator that was directed by the Unit 1, Unit supervisor to place RHR in standby readiness failed to comply with the Station Operating Procedure SOP-102. Additionally, administrative procedure ODA-410, "System Status Control," requires the reactor operators to document system configurations in the Unit 1 log that are different than the position in the System Operating Procedure (SOP) or a Test Procedure (OPT). However, the control room staff did not track valve positions during the changes to the RHR alignment to support the RCS check valve testing.

There were a number of other factors that contributed to this violation, including:

- The reactor operator, who was directed to place RHR in standby readiness, was told by the center desk that there was a "lineup" for the RHR system in the system status file. He believed that a handswitch alignment had been previously completed and the crosstie valves would be repositioned as part of the restoration from the check valve testing. However, this control switch alignment was performed for Mode 4. There had not been an alignment performed for Mode 3, and the operator did not complete the required steps.

- The surveillance program did not require a check of the RHR valves prior to entry into Mode 3. Rather, the system operating procedure governed placement of the system in correct alignment.

- There were multiple activities involving RHR configuration prior to Mode 3 entry.

- Four crews of reactor operators did not identify that the handswitches for the crosstie valves were mispositioned. These handswitches, which are located on the control boards, were mispositioned for approximately 53 hours.

2. Corrective Steps Taken and Results Achieved

The immediate corrective actions taken for this violation include:

- Upon notification of the valve misalignment, the Shift Supervisor directed the RHR crosstie valves to be opened and that the other Mode 3 and 4 valve lineups, which had been completed to support startup, be reviewed. No additional misaligned valves were identified.

- The surveillance database was reviewed to ensure the proper valve configuration and compliance with mode entry surveillances. Although this review indicated some incorrect documentation of valve configurations, the configurations were correct in the

field. The surveillance database was corrected to reflect the actual valve configuration.

- Mode 3 RHR and Chemical Volume and Control System (CVCS) surveillances were performed to verify correct valve configuration.

- An (ECCS) Emergency Core Cooling System handswitch alignment check was performed which included verification of the handswitches and controllers on the Safety Injection (SI), Containment Spray (CT), RHR, Chemical Volume & Control System (CVCS), and Auxiliary Feedwater (AFW) systems.

- The following procedure changes were made:

  IPO-001 - Added steps independent of the surveillance database, to ensure safety system lineups are completed prior to mode change.

  SOP-102 - Added steps, independent of the surveillance database, to ensure RHR lineups are completed when the system is placed in standby readiness.

  SOP-103 - Added steps independent of the surveillance database, to ensure CCP lineups are completed when the system is placed in standby readiness.

- A voice mail was sent immediately to supervisors giving the lessons learned and subsequently, the operations crews received lessons learned training on this violation and the RHR crosstie configuration requirements.

3. Corrective Steps Taken to Avoid Further Violations

TU Electric has taken the following additional actions to preclude further violations of this type:

- Management's expectations of the operators' awareness of control board configuration and implementation of operating procedures were stressed with each operating crew via lessons learned, group discussions and simulator training.

- An ECCS Control Switch Alignment checklist was developed. This checklist provides a means to periodically verify the alignment of handswitches, controllers and computer points on the SI, CT, CVCS, RHR and AFW systems.

- A quiet period will routinely be built into the startup schedule to allow for the review of paperwork and plant status prior to changing modes from major outages.

- Enhancements were made to the procedures governing the surveillance database, including requirements to: (1) complete the ECCS valve line up verification prior to entry into Mode 3 (OPT-201); and (2) creating separate computer entries to ensure that both Mode 4 and Mode 3 surveillances are performed prior to the entry into their respective modes (OPT-203).

- The standby readiness handswitch alignment is now specified in the body of SOP-102 rather than in the Prerequisites.

- Enhancements to the Integrated Operating Procedures (IPO-001) (1) require an ECCS handswitch alignment check prior to changing modes, (2) resequence steps to more closely coordinate RHR discharge check valve testing with system realignment for entry into Mode 3 from Mode 4, and (3) require RHR valve alignment to be checked prior to entry into Mode 3.

- The requirements to ODA 410 to document abnormal valve configurations in the unit log were emphasized by shift order.

4. Date of Full Compliance

TU Electric is in full compliance.

II. VIOLATIONS NOT ASSESSED A CIVIL PENALTY

A. CPSES Technical Specification (T/S) 3.7.1.2 requires, in part, at least three independent steam generator auxiliary feedwater pumps and associated flow paths to be operable in Modes 1, 2 and 3, with one steam turbine-driven auxiliary feedwater pump capable of being powered from two operable steam supplies. With one auxiliary feedwater pump inoperable, Technical Specification 3.7.1.2 requires, in part, that the required auxiliary feedwater pump be restored to operable within 72 hours or be in at least hot standby within the next 6 hours and in hot shutdown within the following 6 hours.

T/S 3.0.4 states, in part, that entry into an operational mode or other specified condition shall not be made when the conditions for the Limiting Condition for Operation (LCO) are not met and the associated action requires a shutdown if they are not met within a specified time interval.

Contrary to the above, on December 4, 1991, CPSES Unit 1 entered Mode 3 with the steam turbine-driven auxiliary feedwater pump in an inoperable condition in that the control room handswitches for the valves in each of the two steam supply lines to the turbine were in the "Pull Out" position. In this condition, the valves would not have opened in response to automatic signals to initiate auxiliary feedwater flow. This condition was discovered by licensee personnel 47 minutes after entry into Mode 3.

RESPONSE TO NOTICE OF VIOLATION

TU Electric accepts the violation and provides the following information, as requested:

1. Reason for the Violation

During the Fall 1991 refueling outage for Unit 1, clearances were hung on the steam supply valve handswitches (1-HS-2453-2 and 1-HS-2452-1) for the Turbine Driven Auxiliary Feedwater (TDAFW) pump. These clearances required the handswitches to be in the "Pull Out" position. All clearances that affected these handswitches were released on December 4, 1991. The handswitches were left in the "Pull Out" position. When the handswithces are in the "Pull Out" position the valves are closed and the automatic functions of these valves are defeated.

On December 4, 1991 at 1333, Unit 1 entered Mode 3 with the steam supply valves to the TDAFW pump in the "Pull Out" position, thus defeating the automatic function of these valves as required by T/S 3.7.1.2. The Shift Supervisor discovered the discrepancy after entering Mode 3 while making a Main Control Board walkdown. The switches were placed into the auto position 1 hour 10 minutes after discovery.

The root cause of this event was the licenced personnel misinterpretation of T/S 3.0.4 and 4.0.4. Normally, a system must be proven operable by performing a surveillance test to demonstrate that it can perform its intended safety function prior to changing into the Mode in which the LCO becomes applicable. A T/S 4.0.4 exception allows the Mode change without performing a surveillance only when specifically stated in the surveillance requirement. T/S 4.7.1.2 provides for such an exception for the TDAFW pump in Mode 3.

The Unit 1 Unit Supervisor and licensed Reactor Operator misinterpreted T/S 3.0.4 based upon the T/S 4.0.4 exception, believing the TDAFW Pump was not expected to be in standby readiness until sufficient steam pressure psig was available to test it. The previous operating crew drew the same conclusion and had signed the step in the operating procedure indicating that the AFW System was aligned in standby, when in fact, only the motor driven AFW pumps were aligned properly. Some members from both shifts knew the steam supply valves were shut and made the conscious decision to leave them shut. Contributing to the misinterpretation was the fact that equipment is normally considered operable only after the required surveillance testing has been performed satisfactorily.

The surveillance program for alignment of the AFW system was a contributory cause to this violation. The surveillance program depended on the system operating procedures to place the system in standby readiness.

2. <u>Corrective Steps Taken and Results Achieved</u>

As is indicated above upon discovery by the Shift Supervisor, the handswitches were placed in the auto position (standby readiness) and operability was restored.

3. Corrective Steps Taken to Avoid Further Violations

TU Electric has taken the following additional actions to preclude further violations of this type:

- Procedure OPT-206 was modified to provide a verification checklist of the TDAFW pump configuration. This information is entered into the surveillance database for performance prior to entry into Mode 3.

- Enhancements to the integrated plant operating procedures to (1) require a check of the configuration for each motor driven and the turbine driven AFW pump (2) implementation of an ECCS handswitch alignment check prior to entry into Mode 3 from Mode (3) clarification of the T/S 4.0.4 exception relating to the turbine driven AFW pump.

- Training on the use of T/S exceptions 3.0.4 and 4.0.4 was included in licensed operator and requalification training program.

- The lessons learned from this event will be discussed with the operating crew prior to the next ascension into Mode 3.

4. Date of Full Compliance

TU Electric is in full compliance.

B. CPSES Technical Specification 6.8.1 states, in part, that written procedures shall be established, implemented and maintained, covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, dated February 1978.

Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, recommends the establishment of administrative procedures.

CPSES Procedure ODA-308, "LCO Tracking Program," developed in accordance with Technical Specification 6.8.1, prescribes controls and documentation requirements for controlling entries into Technical Specification limiting condition for operation action statements.

Section 6.4.3 of Procedure ODA-308 states, in part, that a LCOAR (Limiting Condition for Operation Action Requirement form) shall be initiated when it is determined that a system configuration impacts the operability of any system which is Technical Specification related.

Contrary to the above, on December 5, 1991, with CPSES Unit 1 in Mode 3, the licensee manually isolated the steam supply lines to the steam turbine-driven auxiliary feedwater pump, a configuration which impacted the operability of the steam turbine-driven auxiliary feedwater pump and which placed the unit in a limiting condition for operation action statement, and the licensee did not complete an Active LCOAR Form.

RESPONSE TO NOTICE OF VIOLATION

TU Electric accepts the violation and provides the following information, as required.

1. Reason for the Violation

On December 5, 1991, a work order for a TDAFW pump main steam check valve surveillance was issued. This surveillance requires that the isolation valves on the steam supply line to the TDAFW pump be closed, thereby rendering the TDAFW pump inoperable.

This surveillance requirement was signed out taking credit for a pre-existing Tracking LCOAR (91-337) applicable to the TDAFW pump, which had been issued several weeks earlier when the TDAFW was not required to be operable under the T/S. Tracking LCOARs are used to document inoperable T/S components that are not required to be operable in the mode in question. Under ODA-308, "LCO Tracking Program," the surveillance requirement should have been documented on an Active LCOAR (which applies to components required to be operable under the T/S in the mode in question), because the reactor was in Mode 3 and T/S 3.7.1.2 required the TDAFW to be operable in Mode 3.

The manual isolation valves on the steam supply lines were closed to support the check valve testing at 3:00 a.m. on December 6, 1991. The check valve testing was completed by 7:00 a.m. on the December 6, 1991 and the manual isolation valves on the supply lines were reopened. At that time, an Active LCOAR (91-376) was written to replace the Tracking LCOAR (91-337). The surveillance on the TDAFW pump was successfully completed by 5:30 pm on December 7, 1991, within the 72 hours allowed by the T/S LCO.

The root cause of this violation was the failure of the Unit Supervisor to follow procedures. The Unit 1 Supervisor failed to document the inoperable TDAFW pump on an Active LCOAR as required by ODA-308. The TDAFW pump was inoperable when the manual isolation valves for the steam supply were closed to support surveillance testing. The licensed reactor operators, who completed the tracking LCOAR, also knew that the AFW pump was inoperable, but logged the required surveillance for the steam admission check valves on a Tracking LCOAR rather than an Active LCOAR.

2. Corrective Steps Taken and Results Achieved

As noted above, the manual isolation valves on the supply lines were reopened.

3. Corrective Steps Taken to Avoid Further Violations

As is indicated above, after performing the surveillance on the check valves, the Tracking LCOAR was replaced with an Active LCOAR. Moreover, the surveillances necessary to satisfy the T/S LCO were performed within the 72 hours allowed by T/S 3.7.1.2.

TU Electric has taken the following action to preclude further violations:

- The Unit Supervisor was given counseling on the use of Active and Tracking LCOARs.

- This event was discussed with the operating crews to ensure their understanding of the requirements.

4. Date of Full Compliance

TU Electric is in full compliance.