

TU ELECTRIC

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Ref. # 10CFR2.201

William J. Cahill, Jr.
Group Vice President

August 13, 1992

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
NRC INSPECTION REPORT NOS. 50-445/92-16; 50-446/92-16
REPLY TO A NOTICE OF VIOLATION

Gentlemen:

TU Electric has reviewed the NRC's letter dated July 14, 1992, concerning the inspection of Messrs. D. N. Graves and R. M. Latta during the period May 3 through June 13, 1992, of activities authorized for the Comanche Peak Steam Electric Station, Units 1 and 2. A Notice of Violation was attached to the July 14, 1992 letter. TU Electric's response to the Notice of Violation is attached.

The letter also requested that TU Electric advise the NRC when the review of potentially reportable deficiencies (SNs), identified between January 1988 and June 1990, would be complete and provide your staff an opportunity to review the results. The subject review will be completed before October 1, 1992. Documentation of the review will be available for your staff at that time.

Sincerely,

William J. Cahill, Jr.

By: D. R. Woodlan
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Dock Licensing Manager

TLH/ds

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Item A
(445/9216-01)

CPSES, Unit 1, Facility Operating License, Paragraph 2H, states, in part, "TU Electric shall fully implement and maintain in effect all provisions of the physical security plan...previously approved by the Commission...."

CPSES Physical Security Plan, paragraph 6.2.3.1 requires that all licensee designated vehicles must be locked or secured when not in use within the protected area.

Contrary to the above, on June 9, 1992, at approximately 11:40 a.m., the inspector identified an unsecured licensee designated vehicle within the protected area which was unattended with the motor running while not in use.

Response to Item A
(445/9216-01)

TU Electric accepts the violation and the requested information follows:

1) Reason for Violation

The reason for the violation was less than adequate comprehension of the procedural requirement on the part of the vehicle operators. While preparing to unload a temporary structure from a tractor trailer within the protected area, the vehicle operator and his assistant left the cab to inspect the proposed laydown area. Contrary to the above requirement the operators positioned themselves away from the Licensee Designated Vehicle (LDV) at a distance from which control could not be assured.

2) Corrective Steps Taken and Results Achieved

The vehicle operator's assistant returned to the immediate vicinity of the cab to maintain control of the LDV. The vehicle operator, the assistant, and their supervisor were counseled by the Administrative Security Supervisor as to the proper implementation of the control of LDV's. The occurrence was entered in the Security Log. All individuals who control LDV's were contacted and informed of the nature of the violation. Contractor craft personnel working within the protected area were informed by their management of the details of the violation and the procedural requirements which govern the proper steps to be taken when an LDV is not in use.

3) Corrective Actions Taken to Preclude Recurrence

A memorandum detailing the requirements for the control of LDV's and management's expectations for compliance with these requirements has

been issued to applicable site personnel. Additionally, guidelines for controlling LDV's are now distributed to individuals who request use of an LDV.

4) Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Item B
(446/9216-02)

Criterion V of Appendix B to 10 CFR 50 as implemented by Section 5.0 of the TU Electric Quality Assurance Manual, states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances."

Station Administration Procedure STA-806, "Construction Work Requests and Work Orders," Revision 16, Steps 6.3.8 and 6.3.9, states, in part, that the Unit 2 work control center will ensure all permits and clearances have been included and that the Unit 2 shift supervisor or his designee shall sign for work start approval following review and approval of all necessary documents.

Contrary to the above, Construction Work Document ETP-1191, including Startup Work Authorization 82903, was not appropriate to the circumstances in that it was approved, authorized for work, and released to the field for performance on battery room exhaust fan CP2VAFN1D10, which was energized from a temporary power source, without adequate provisions for ensuring personnel safety and equipment protection.

Response to Item B
(446/9216-02)

TU Electric accepts the violation and the requested information follows:

1. Reason for Violation

On April 28, 1992, a construction electrician attempted to work on a battery Room Exhaust Fan which was energized by temporary power. The electrician was unaware of the energized condition. The electrician first removed the fan motor terminal cover for general inspection. As the cover was removed and the electrician began straightening the wires, a faulty wire grounded inside the fan motor housing causing arcing and

a brief fire. The fire self-extinguished and the fan motor was de-energized. The electrician was not injured.

The electrician was attempting to rework a deficiency different from the one which started the fire. The deficiency which started the fire had not been previously identified. The electrician was fully compliant with procedures and authorized to perform the work. At the time, it was believed that the administrative controls, including work sequencing, authorizations and tagging, were adequate to preclude work on energized equipment.

The root causes for this incident are discussed below.

- o Inadequate communication of the Battery Room Exhaust Fan work sequencing, and lack of designated overall responsibility for work sequencing, led to inappropriate approval of a Startup Work Authorization (SWA). This allowed work in a component that had temporary power (under the Startup Temporary Modification (TM) process) supplied to it. The electrician implementing the SWA was unaware of the temporary power condition when he removed the component's cover for an authorized work activity inspection.
- o The electrician was not familiar with temporary modification tags and the associated potential safety hazards. This led to a field situation where, despite a conservative approach to TM tag coverage and despite reference to the TM on the Unit 2 Impact Sheet in the work package, the assigned electrician was still not alerted to the temporary power condition.

Several contributing factors pertinent to the overall work planning and implementation processes were also identified and are discussed below.

- o The original planning effort for the Battery Room Exhaust Fan work was not implemented as scheduled. This created the need for additional planning and temporary modification to the Battery Room Exhaust Fan motors. After a defined scope of electrical work associated with the fan relays had been planned and completed under a clearance, construction work on other priorities delayed completion of the I&C and Mechanical packages associated with the same clearance. This delay prevented closure of the clearance, thus creating interferences for additional work activities.
- o Some packages were worked outside of the intended work window. Construction work packages were prepared in advance, with clearances and work release authorizations issued prior to the actual intended work window. This practice complicated the

Startup Test Engineer's (STE) task of maintaining cognizance of overall system status and specific work activities that could impact one another.

- o Construction craft personnel and others involved in the package preparation process generally felt that they were still working in a construction environment versus a testing/operations-type environment, which necessitates more detailed work planning and sequencing.
- o Interface impact reviews between TMs and clearances were not effective enough to find and correct all potential personnel safety hazards. Work packages or TMs/clearances that may have had a personnel safety impact on each other could have been approved for field implementation concurrently.
- o Construction craft/supervision's implementation of the Common Area Checklist, pre-job briefings, and Total Safety Task Instructions (TSTI), proved ineffective in detecting and calling craftsman's attention to the potential safety hazard. The craftsman felt that no out-of-the-ordinary precautions were needed for the job.
- o There was lack of clarity in this specific work package concerning the exact scope of intended work. As a result, package reviewers (STE and Work Control Center) were hindered from performing effective TM/clearance safety impact reviews.
- o There was a general lack of information exchange within Construction and with the STE. As a result, specific sequencing notes or precautions were not brought to craft's attention.

2. Corrective Steps taken and Results Achieved

A TUE Form was written to identify and disposition deficient Battery Room Fan No. 10. The fan has been replaced.

Another TUE Form was written to document the incident involving work on the energized fan. Because of the "near miss" nature of the incident, it was considered both serious and significant. Therefore, management's review of the TUE Form resulted in formation of a multi-disciplined Task Team. The Team was organized to identify root cause(s) and contributing factors; perform a safety analysis and personnel performance evaluation; and recommend corrective actions and actions to preclude recurrence which would be consistent with and which would resolve the causes and contributing factors. The Team's evaluation also included an investigation of another similar incident involving authorized work in an energized chill water system control panel.

The team's conclusions and recommendations were documented in a report approved on June 5, 1992. This report generated a number of subsequent actions which were finalized on July 20, 1992. The causes and corrective actions specified in this letter are consistent with the Team's conclusions and report and are intended to preclude conditions that existed prior to both investigated incidents.

3. Corrective Steps Taken to Preclude Recurrence

The Task Team provided a number recommendations for corrective actions. The recommendations were forwarded to Project Management for evaluation and implementation. Identification and status of those actions is explained below.

On May 13, 1992, the Startup Manager wrote a memo entitled "Startup Test Engineer (STE) Responsibilities." Besides identifying the STE as the focal point for maintaining cognizance, coordination and control of systems turned over to Startup, the memo requested full support to ensure work activity coordination with the appropriate STE. As a result a second team was organized to evaluate how best to implement enhanced work activity coordination. Based on the recommendations of the initial Task Team and further work by the second team, the following actions have been accomplished.

- o STEs are currently coordinating Startup SWAs and Startup Work Permits (SWPs) in Startup by daily coordination and sequencing through the Startup Support Group over which they have direct control. In addition, the System Custody Matrix was updated to identify primary and backup STEs. A listing of these STEs is being procedurally distributed to Unit 2 organizations. All Startup Test Group Supervisors have been informed to contact the primary or backup system STE if they have questions about system status.
- o Startup and Construction conducted a review of authorized Construction SWAs (approximately 670) and either pulled the packages from the field for revision or adjusted the work windows as necessary to ensure proper work sequencing. Construction, through their Work Document Tracking Group, controls all Construction SWA packages to be sent to the field and establishes work windows based upon published Startup Plan of-the-Day schedules or communications with the appropriate Construction Engineer and STE. Work windows considerations include proper sequencing, personnel safety, and need dates.

- o The responsibilities and duties of the STE and Shift Supervisor regarding their impact reviews associated with Temporary Modifications (TMs) and clearances were proceduralized. The Unit 2 Work Control Center enhanced the processes to ensure that the TM log is thoroughly reviewed for impact on new clearances or TMs. This process was also communicated via verbal guidance from Operations Management.
- o Unit 2 Operations will develop and implement clearances to support a specific work package without further modifying the clearance scope unless specifically authorized by the appropriate STE. As more systems are turned over to Operations, the Project will transition towards this method for developing and implementing clearances.
- o Construction management met with craft supervision to review Common Area Checklists, pre-job briefings and the TSTI program to evaluate the need for changes. In general, the TSTI program and the pre-job briefings were considered effective. However, use of the Common Area Checklists was determined to be inconsistent and in some respects duplicative of the TSTI and pre-job briefing. In addition, other controls including use of dedicated crews in the common area, training, enhanced interfaces and increased emphasis on personnel and equipment safety indicated that the Common Area Checklist was not needed. Therefore the program has been discontinued.
- o Construction and Startup Management reviewed work package preparation practices for needed improvements. A number of actions were implemented. Construction Engineers (CE) involved with the package preparation were trained concerning the level of detail in various document description blocks, the need to provide work information that is "user-friendly" to the craftsmen, and the need to properly reference associated documentation. In addition, a number of human factors changes to field packages such as bold printing, highlighting and the "seven steps for self-verification" were implemented.
- o A memorandum titled "Sensitivity to Changing Work Conditions" was approved on June 17, 1992, by the Unit 2 Project Manager, Manager of Startup and Unit 2 Operations Manager. This memorandum stressed the need for all Project personnel to be sensitive to changing plant conditions, changes to custody of systems and safety now that Unit 2 has transitioned from a bulk construction mode to a test/preoperational mode.

- o Soon after this incident, Construction's craft personnel were given a training bulletin describing a Temporary Modification (TM) tag and its potential for indicating a hazardous situation.
- o Unit 2 Project Training developed and implemented an enhanced training module on site tag familiarization entitled "Safe Work Practices." This training includes the potentially hazardous conditions that each type of tag may indicate. It also reiterates the need for self-verification methods to improve attention to detail and the need to implement work within approved Startup work windows.

4. Date of Full Compliance

Full compliance has been achieved.