

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-445/92-41; 50-446/92-41

Operating License: NPF-87

Construction Permit: CFR-127

Licensee: TU Electric
Skyway Tower
400 North Olive Street, L.B. 81
Dallas, Texas 75201

Facility Name: Comanche Peak Steam Electric Station (CPSES), Units 1 and 2

Inspection At: CPSES, Glen Rose, Somervell County, Texas

Inspection Conducted: September 14-18, 1992

Inspectors: D. R. Hunter, Senior Reactor Inspector
J. E. Whittemore, Reactor Inspector

Approved: T. F. Stetka for 9/29/92
T. F. Stetka, Chief, Operational Programs Date
Section, Division of Reactor Safety

Inspection Summary

Areas Inspected (Unit 1): Routine, announced inspection of Unit 1 balance-of-plant activities and the followup of a previously identified inspection finding.

Results:

- o The balance-of-plant maintenance and problem identification activities were included within the licensee's overall program controls. The licensee's activities regarding this area were effective. However, the inspectors expressed concerns regarding the tracking of caution clearance and work items (paragraph 2.1).
- o The control and tracking of problem annunciators appeared good (paragraph 2.2).
- o The administrative controls established for the leakage repair activities on the balance-of-plant systems was considered a strength (paragraph 2.3).

- The licensee's corrective action process, as applied to the balance-of-plant areas, was confusing regarding the closure of the identified deficiencies. The inspectors considered this to be a potential weakness in the tracking of completion of corrective actions (paragraph 2.4).
- The equipment failure analysis and trending reporting program was considered to be effective (paragraph 2.5).

Areas Inspected (Unit 2): No inspection of Unit 2 activities was performed.

Summary of Inspection Findings

- Unresolved Item 445/9154-01 was closed (paragraph 3)

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting
- Attachment 2 - Documents Reviewed

DETAILS

1 PLANT STATUS

During this inspection period, Comanche Peak Steam Electric Station (CPSES), Unit 1, was operating routinely in Mode 1 at 100 percent reactor power.

2 BALANCE-OF-PLANT (BOP) INSPECTION (71500)

The inspection was conducted to verify the overall effectiveness of the activities associated with the BOP systems including maintenance, modifications, operating procedures, and problem identification, root cause analysis, and corrective actions.

2.1 Plant Walkdowns and Administrative Systems

The inspectors walked down the control room and portions of BOP areas and systems to assess how these systems were being maintained. These walkdowns were also performed to determine how the BOP systems were administratively controlled within the clearance system, modification process, and corrective action system.

The walkdown and review of the main electrical generator primary water cooling system revealed that the system was in normal operation with noted discrepancies. A small system water leak was observed on a fitting near the system head tank. Document review and personnel interviews revealed that an evaluation was in progress (Work Order WO 92-023170) to decide if the fitting should be repaired at power or to wait for the upcoming plant refueling outage. Also, the system oxygen analyzer was not functioning and routine manual grab samples were being obtained. The leakage and sample purge volume increased the water makeup to the system and impacted the maintenance of the stringent cooling water system chemistry requirements. The assigned system engineer was monitoring the increased makeup water rate to the system to ensure the system chemistry was being monitored and maintained as required. The licensee had also identified a vent line on an exchanger in a degraded condition and the repair of the specific item was scheduled (Work Order WO 92-001732).

Several problems with work item identification and tracking were identified by the inspectors during the walkdowns and subsequent followup. While walking down the non-safety-related portion of the control boards the inspectors found caution tags on the hand switches for the air-operated suction valves on the main condenser vacuum pumps (MCVP). There were two tags on the hand switch for the valve on MCVP 1, and one tag each on the switches for the valves associated with MCVP 2 and 3. The verbiage on one tag on each pump stated that the air-operated suction valves leaked and cautioned the operator to close the manual suction valves when the particular vacuum pump was not in use. The second tag located on MCVP 1 suction valve handswitch indicated that the vacuum pump seal water tank level switch was malfunctioning and the manual seal water makeup valve was closed.

The inspectors attempted to find out if work orders had been issued to repair the leaking valves. The clearance data base and the hard copy caution tag log did not reference action requests, work requests, or work orders against the equipment identified as deficient on the caution tags. A search of the work control data base did not reveal any work action pending against the equipment or components. The inspectors went to the components in the turbine building and found work request tags on the air-operated valves for MCVPs 1 and 2. Work request tags were not found on the level switch for the seal water tank or MCVP 1, or the suction valve for MCVP 3. When the data base was queried with the work request numbers of the tags that had been located, no match was indicated. The inspectors left this condition with a licensee representative, and by the following day, the licensee had determined that the three air-operated suction valves for the main condenser vacuum pumps were being replaced by a plant modification to be completed during the next scheduled outage. The inspectors did not determine how the problem with the MCVP 1 seal water tank level switch was to be dispositioned.

There were caution tags attached to the start switches for circulating water pumps 3 and 4. These tags warned the operator that reservoir level switches were defective and would not provide the logic necessary to start the pumps from the control board. Through a search of the work control data base, a licensee representative was unable to find any scheduled corrective maintenance for the level switches. However a work order had been issued to perform a preventive maintenance procedure on the level detection system. This document referenced the caution tag clearance in effect which had indicated that corrective maintenance was necessary to release the clearance. The licensee could not explain the lack of a corrective maintenance work order or instructions.

A work request tag was affixed to the control board controller for main turbine lubricating oil temperature (ITK-3094). The controller was observed to be in the automatic mode, functioning normally to maintain oil temperature, and the control room operators were not aware of any problem with the controller. When the licensee entered the work request number in the work control data base a work order number was referenced. This work order was to perform the 5-year preventive maintenance (loop calibration procedure) on the controller. Licensee representatives stated that it was not in accordance with procedure to initiate work requests to schedule preventive maintenance. This occurrence could not be explained by the licensee.

During a walkdown of the upper elevation of the turbine building, the inspectors found loose modification and work request tags. These tags were returned to the licensee for disposition. Also several tags had become illegible or very difficult to read. Tags hung on this elevation were continually exposed to the weather and deteriorated rapidly. Protective tag covers with metal or plastic fasteners were not used in this potentially severe weather environment.

The inspectors observed a significant number of steam and water leaks in the turbine building. However, considering that the next refueling outage was

scheduled to start within 30 days, the number of leaks did not appear to be excessive. Most of the observed leaks were located in the lower pressure reheat steam, extraction steam, or heater drain systems. Except for the upper elevation all the observed leaks were noted to have work request tags attached to or near the leaking component. Licensee personnel had been careful to ensure that leakage did not puddle on the floor and become a slipping hazard and that barriers had been constructed to preclude personnel injury from steam burns. The inspectors considered the housekeeping and cleanliness of the turbine building to be good.

In summary, the inspectors believed that the licensee's maintenance effort for identified balance-of-plant equipment anomalies was effective. However, they were concerned about the effectiveness of the licensee's clearance tag and work control tracking systems. The licensee had recently integrated the clearance tag and work control systems into a single computer data-based system referred to as the Plant Reliability-Integrated System for Management (PR-ISM). The above examples raised questions about the present reliability of the system to effectively track both safety and non-safety-related work identification and performance. Several licensee personnel stated to the inspectors that the problem was related to the inexperience of the system users. The inspectors discussed this concern with licensee management at the exit meeting conducted on September 18, 1992.

2.2 Annunciator Status

The inspectors reviewed the overall status and controls established associated with problem annunciators. Document reviews and personnel interviews revealed that the licensee had recently provided an "annunciator blackboard status" to management that addressed both illuminated and dark annunciators and, to evaluate and classify problem annunciators. For each problem annunciator the licensee provided an action and estimated completion date to return the window to full service. The inspectors reviewed the controls established and the actions taken for selected annunciators to ensure adequate compensatory measures for inactive alarms had been established and implemented. The licensee had established specific administrative procedures and actions regarding the control and tracking of problem annunciators. The inspectors considered the licensee's actions related to problem annunciators to be effective.

2.3 Team Leak Program

The inspectors reviewed the program and procedures established to provide control of the "Team Leak" activities.

Document reviews and personnel interviews revealed that the licensee had established Administrative Procedure STA-695, Revision 0, "Temporary Leak Repairs and Vendor Freeze Seals," and specific Implementing Procedures ERPM-2, Revision 0, "Vendor Repair Procedures Manual," to control these activities. The inspectors identified one vendor repair procedure, which had not been included in the licensee's list of approved procedures. The licensee stated

that this procedure had not been used in the past and the concern would be resolved prior to any future use of the procedure. The licensee indicated that, even though the contract was quality-related the "team leak" activities were only performed on non-quality systems under the temporary modification program. This methodology ensured that the specific activity received adequate engineering evaluations prior to implementation. The licensee had assigned a coordinator to oversee the activity.

The administrative controls established regarding temporary leak repair activities on BOP systems, including the use of the temporary modification program and the assignment of a specific coordinator to oversee the activities, resulted in a strong program.

2.4 Corrective Action

The inspectors asked the licensee to provide a list of all Operational Notification and Evaluation (ONE) Forms submitted on balance of plant equipment or events since January 1, 1991. ONE forms were considered to be the low level entry into the licensee's corrective action system. The inspectors screened a sample of about 20 reports on the list and selected 10 of these for a detailed review. The inspectors identified concerns with 2 of the 10 reports.

ONE Form FX 91-824 was submitted on July 7, 1991, in response to an observed abnormal transient on the unit 1 feedwater system associated with steam generator No. 1. The inspectors noted that the ONE form was considered by the licensee to be closed. The vaulted copy of the report contained only the report cover sheet (FORM STA-421-1) and 21 computer trend graphs depicting the behavior of several parameters associated with the transient during a time period encompassing the event. The report cover sheet indicated that the work control center had reviewed the event and initiated the performance of a technical evaluation identified as TE-91-2118. This appeared to mean that a completed technical evaluation was required to close out the item. Further, a review of Procedure STA-422, Revision 6, "Processing of Operations Notification and Evaluation Forms," Section 6.6, stated that to close the ONE Form, managers were responsible to ensure that assigned corrective action(s) had been completed. A licensee representative informed the inspectors that it was normal practice to close out the ONE form when a technical evaluation was initiated. The completed corrective action would then be tracked through the technical evaluation procedure. The licensee could not provide a status of Technical Evaluation TE-91-2118 as it was still being worked toward completion. The inspectors believed that corrective action had been ongoing for an excessive amount of time (14 months).

ONE Form FX 91-900 was submitted on August 10, 1991. In response to the discovery of water in a pneumatic level controller for the heater drain system, that was supplied by the instrument air system. The initially specified corrective action was to perform a technical evaluation. The instructions on the technical evaluation (TE 91-2411) were to investigate the source of water in the instrument air system and take appropriate corrective

action. The assigned due date for the technical evaluation was August 26, 1991, but the actual completion date was December 23, 1991. The ONE Form had been closed on August 26, 1991. The technical evaluation results stated that the observed condition had been evaluated in the Instrument Air Task Team Report dated November 29, 1991, and that actions were being tracked under a new ONE Form, FX 91-1675. However, the ONE Form issued for corrective action tracking did not contain a listing of the specified corrective actions. The inspectors verified that this ONE Form was still open. As stated in Procedure STA-422, the corrective actions should have been tracked on the original ONE Form, FX 91-900.

The inspectors concluded that the licensee's procedure was confusing on what constituted deficiency closure and how the closure was to be implemented. The inspectors were concerned that a potential existed to close out deficiencies before the required corrective action was completed. In at least one case, the ONE Form had been closed and corrective action was still incomplete 14 months later. This is considered a potential weaknesses in licensee tracking of completion of corrective actions.

2.5 Equipment Failure Analysis and Trending

The inspectors reviewed the licensee's process for equipment failure analysis and trending. A review of Procedure STA-512, Revision 1, "Failure Analysis," and the latest quarterly report demonstrated that the program had the following attributes:

- o The program provided trend reports of components by system and component type.
- o Failures were identified for inclusion in the industry-wide reporting system.
- o The program identified repetitive maintenance.
- o The program compared CPSES failure rates to industry failure rates. This comparison was subjected to threshold criteria to identify potential future impact.
- o The program required feedback by groups receiving the information.

The inspectors noted that the program had only one source of input in the form of completed work orders. This provided for consistency of input and a more meaningful product. Licensee representatives who were responsible for the program stated that the program's effectiveness had improved as a result of the conversion to the PR-TSM system.

The inspectors concluded that the program was effective in the production of useful information. The use of this information by licensee groups was not assessed during this inspection.

3 FOLLOWUP (32701)

The following item was reviewed further to ascertain whether the licensee had adequate programs and procedures established to address the matter.

3.1 (Closed) Unresolved Item (445/9154-01): Inspection Requirements

The item involved the classification methodology and the lack of definitive, preplanned inspection requirements for electrical relay calibration activities.

The inspectors reviewed the work order planner's guide, the established plant procedure administrative controls, selected electrical maintenance procedures, and interviewed personnel associated with the selection of system classification and inspection activities. The licensee had established a verification and inspection program. The program included a requirement for prior quality control review of maintenance activities classified as quality-related. The program also included a requirement to establish specific verification and inspection points within quality-related activities. Work planner and personnel experience was relied upon to select the specific verifications and hold points utilizing general procedure guidance. Additionally, work planner and QC personnel experience was relied on to provide verification of non-quality-related activities, which could affect quality-related activities. This addressed the inspectors concern in this area and this item is closed.

ATTACHMENT 1

1 PERSONS CONTACTED

1.1 Licensee Personnel

T. Beaudin, Shift Supervisor
*O. Bhatti, Senior Licensing Engineer
*L. Bradshaw, Stipulation Activities
*R. Byrd, Manager, Operation Quality Control
R. Carter, Maintenance Engineer
J. Corbell, Team Leak Coordinator
E. Edwards, Work Center Scheduler
J. Green, Supervisor, Preventive Maintenance Program
*W. Guldmond, Manager, Independent Safety Engineering Group
L. Gunnels, Lead Electrical Planner
*H. Haby, Balance-Of-Plant Supervisor - System Engineer
M. Hensen, System Engineer
J. LaMarca, Manager, Technical Programs
*B. Lancaster, Manager, Plant Supervisor
*D. McAfee, Manger, Quality Assurance
*J. Muffett, Manager, Design
D. Rood, Technical Program Support
L. Schaefer, ONE FORM Coordinator
*A. Scott, Vice President, Nuclear Operations
S. Sewell, Unit Supervisor
S. Smith, Acting Manager, Work Control Center
J. Thompson, Licensing Engineer
B. Wallace, Procedure Coordinator-Electrical
*I. Whitt, Design Engineering

1.2 CASE

*O. Thero, Consultant

1.3 NRC Personnel

*W. Jones, Senior Resident Inspector

*Denotes those personnel who attended the exit meeting conducted September 18, 1992.

2 EXIT MEETING

An exit meeting was conducted on September 18, 1992. During this meeting, the inspectors reviewed the scope and findings of the inspection. One document reviewed during the inspection was identified by the licensee as proprietary information. The document was reviewed for scope and content and returned to the licensee.

ATTACHMENT 2

DOCUMENTS REVIEWED

STA-202, Revision 22, Administrative Control of CPSES Nuclear Engineering and Operations Procedures
STA-421, Revision 3, Operations Notification and Evaluation (ONE) Forms
STA-422, Revision 6, Processing of Operations ONE Forms
STA-504, Revision 9, Technical Evaluation
STA-512, Revision 1, Failure Analysis
STA-517, Revision 1, Repetitive Maintenance
STA-606, Revision 18, Work Request and Work Orders
STA-623, Revision 6, Post-Work Test Program
STA-680, Revision 1, Equipment History Program
STA-694, Revision 1, Station Verification Program
STA-695, Revision 0, Temporary Leak Repairs and Vendor Freeze Seals
ETG-340A, Revision 0, Steam Dump Performance and Timing Test
ODA-401, Revision 4, Control of Annunciators
OWI-203, Revision 6, Operations Department Management Periodic Reviews
SOP-408A, Revision 6, Generator Primary Water System
MOA-202, Revision 1, Maintenance Department Procedure Users Guide
NQA 3.29, Revision 4, Review of Project Documents
NQA 3.09-9.01, Revision 6, Review of Quality Related Work orders
MSE-CO-6302, Revision 1, 480 V Air-Circuit Breaker Rework
MSE-PO-6302, Revision 0, Westinghouse 480V Circuit Breaker
ERPM-2, Revision 0, Vendor Repair Procedures Manual (Proprietary);
Comanche Peak Steam Electric Station Maintenance Planners Guide