

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-445/92-55
50-446/92-55

Operating License: NPF-87

Construction Permit: CPR-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: November 2-10 and November 16-19, 1992

Inspectors: C. E. Johnson, Reactor Inspector

Accompanied By: D. Skeen, Events Assessment Branch, Nuclear Reactor
Regulation

Approved: T. F. Stetka 12/9/92
T. F. Stetka, Chief, Maintenance Section Date
Division of Reactor Safety

Inspection Summary

Areas Inspected (Unit 1): No inspection of Unit 1 activities was performed.

Areas Inspected (Unit 2): Routine, announced inspection of the Unit 2 plant operation and maintenance procedures and programs.

Results:

- Operations procedures have been established and approved for use. These procedures were good and appear to accomplish their intended purpose. Final update and revision of approved procedures had not been completed because of few safety-related systems being turned over to operations.
- The established operation procedures program scope, format, and content were determined to be in accordance with station administrative procedures.

- Maintenance procedure scope and content were determined to be good. However, format of maintenance procedures was not completely implemented in accordance with station administrative procedures.
- The established operations and maintenance procedures were determined to be technically adequate to accomplish their stated purpose in the control of safety-related operations and maintenance activities.
- The Unit 2 preventive maintenance program was still in its early stages during this inspection, however, the basic program was already included in the database for those few safety-related systems that were turned over to operations.

Attachments:

- Attachment - Personnel contacted and Exit Meeting

DETAILS

1 PLANT STATUS

During this inspection period, Comanche Peak Steam Electric Station (CPSES), Unit 2, was undergoing the final phase of integrated plant testing required for initial licensing and fuel load.

2 PLANT PROCEDURES INSPECTION (42450, 42451)

This inspection was conducted to confirm that plant operation and maintenance procedures are prepared to adequately control operation and maintenance of safety-related systems within applicable regulatory requirements.

The inspectors verified that the following written administrative procedure controls have been established to assure that procedures will be reviewed, updated, and approved (including 10 CFR Part 50.59 considerations) as required:

- Preparation of procedures including the desired format and content,
- issuing new and revised procedures,
- Controlling temporary changes to procedures,
- Control of outdated procedures, and
- Training department awareness of procedure changes.

The inspectors selected a sampling of administrative, operations, and maintenance procedures and verified that review, approval and revision of the procedures have been accomplished in accordance with administrative controls. In addition, the inspectors verified that the procedure working copy is the latest approved revision.

2.1 Station Administrative Procedures (STA) (42450)

The inspectors reviewed selected STAs to determine if they were written, approved, and revised in accordance with regulatory requirements. STAs are the principal implementing procedures for programs specified by the Nuclear Engineering and Operations organizations and those support organizations providing services.

The following procedures were reviewed:

- STA-202, Revision 22, "Administrative Control of CPSES Nuclear Engineering and Operations Procedures"
- STA-205, Revision 15, "Changes to Procedures"
- STA-207, Revision 5, "Guidelines For The Preparation And Review Of Operations Procedures"

- STA-802, Revision 10, "Acceptance Of Station Systems & Equipment"
- STA-820, Revision 1, "Reporting And Evaluating Unit Differences"

These administrative procedures describe how the plant operating procedures should be written and revised. They also define those personnel responsible for ensuring the revisions are reviewed and approved as applicable.

In summary, it was found that plant administrative procedures, which were common to both units, were adequate.

2.2 General Plant Procedures (42450)

The inspectors reviewed the following integrated plant operating procedures (IPOs):

- IPO-001B, Revision 0, "Plant Heatup From Cold Shutdown To Hot Standby"
- IPO-002B, Revision 0, "Plant Startup From Hot Standby"
- IPO-003B, Revision 0, "Power Operations"
- IPO-005B, Revision 0, "Plant Cooldown From Hot Standby To Cold Shutdown"

These procedures followed the format and content as described in the STAs. Each procedure was technically adequate to accomplish its stated purpose.

The inspectors verified that essential prerequisites were included prior to nuclear startup such as:

- A check to insure that instruments are operable and properly set for startup;
- A panel check to verify the position of remotely operated valves, and that proper equipment is operating; and
- A valve lineup check of local valve positions.

Review of these startup and shutdown IPOs indicated that appropriate limitations were specified and, during power operation, that reactivity control was specific. Process surveillances were specified for plant systems to insure that the reactor core did not exceed its specified limits. Instructions in the IPOs required routine surveillance of systems to detect any abnormal conditions.

In summary, the licensee has operating procedures in place to adequately control safety-related operations within regulatory requirements. However, the inspectors found minor inconsistencies between the Unit 1 and Unit 2 IPOs. The minor inconsistencies for Procedures IPO-003B and -005B had been corrected. Procedures IPO-001B and -002B had not been revised. A licensee representative stated that Revision 9 to Procedure IPO-002B and Revision 11 to Procedure IPO-001B would address the inconsistencies identified. The licensee

informed the inspectors that the final reviews will be completed when the systems are turned over to operations.

2.3 System Operating Procedures (SOP) (42450)

These procedures specify instructions for energizing, filling, venting, draining, startup, shutdown, and change of operating mode of both safety-related and nonsafety-related systems. The inspectors reviewed selected SOPs to ensure that they were written in the proper format and contained sections describing prerequisites, precautions, limitations, and checklists as prescribed by the licensee's governing Administrative Procedure STA-202, and ANSI N18.7-1976/ANS-3.2, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants."

The following procedures were reviewed:

- SOP-201B, Revision 0, "Safety Injection System"
- SOP-508B, Revision 1, "Service Air System"
- SOP-604B, Revision 2, "480V Switchgear and Motor Control Centers"
- SOP-108B, Revision 0, "Reactor Coolant Pump"

During the review of the SOPs, the inspectors checked them against the similar Unit 1 procedures and noted some minor differences. Interviews with a licensee representative revealed that the bulk of the differences were because the Unit 1 SOPs have been revised as needed during the unit's operating life. The Unit 2 SOPs had not yet been revised because of both time and manpower constraints. The representative indicated that the Unit 2 SOPs will be revised as the associated system is turned over from the construction department to the operations department. The procedures required for entrance into Mode 6 will be given the highest priority, with procedures needed for Mode 5 the next highest priority, and so on down the line, with procedures needed for Mode 1 being the lowest priority. The inspectors were given a list of 25 Unit 2 systems that have been turned over to the operations department from June through October 1992. Most of these systems were nonsafety-related and their associated operating procedures have not been revised. Part of the review process will include comparing the Unit 2 procedures to the Unit 1 procedures for compatibility as prescribed in Procedure ODA-207, "Guidelines for the Preparation and Review of Operations Procedures."

In summary, the Unit 2 SOPs appeared to be adequately written and technically correct. The SOPs will need to be updated to incorporate the enhancements made to the Unit 1 procedures as the Unit 2 systems are turned over to the operations department in preparation for Unit 2 initial startup and operation.

2.4 Operations Test Procedures (OPT) (42450)

These procedures prescribe the surveillance testing activities to be performed by the operations department to satisfy Technical Specification requirements. Periodic testing of safety-related systems ensure that they will be able to

perform their safety function as needed. The inspectors reviewed the following procedures to determine proper format and technical content.

- OPT-204B, Revision 1, "Safety Injection System"
- OPT-215B, Revision 0, "Class 1E Electrical Systems Operability"
- OPT-217B, Revision 0, "Turbine Overspeed Protection System Test"
- OPT-407, Revision 4, "RCS Temperature And Pressure Verification"

Review of these procedures included comparing them to the similar Unit 1 OPTs. Differences were found between the Unit 2 and Unit 1 OPTs. Discussions with the licensee revealed that the bulk of the differences were due to changes in Section XI of the ASME Code, which deals with inservice testing of pumps and valves. The Unit 1 procedures were written to comply with the 1986 edition of the Code, while the Unit 2 procedures comply with Part 6 and 10 of Section XI of the 1989 edition of the ASME Code. The licensee stated that the Unit 1 OPTs will be updated to meet the 1989 ASME Code requirements as they come due for biennial review and that all of them should be revised by the third Unit 1 refueling outage. Other differences between the two units' OPTs were minor in nature and were due to manpower and time constraints in the Operations Support Department. Flaws and typographical errors in the Unit 1 procedures were found during use by the Unit 1 operators and revised accordingly. The licensee stated that when the systems are turned over to the Operations Department, the associated OPTs will be revised to incorporate the enhancements made to the Unit 1 procedures. The inspectors were also informed that in conjunction with the procedure review by operations support, the plant operators actually walk through the procedures to determine their usability. Any deficiencies noted are included in the updated revision.

2.5 Conclusion

In summary, the inspectors concluded that the licensee has developed adequate operating procedures for Unit 2. There were some inconsistencies identified in the review of these procedures. However, discussions with the licensee and the review of the administrative procedures provided assurance that these differences between the Unit 1 and Unit 2 operating procedures would be captured. Overall, procedures reviewed were adequate to control safety-related operations within the applicable regulatory requirements.

3 MAINTENANCE PROCEDURE REVIEW (42451)

The inspectors selected maintenance procedures from the mechanical, electrical, and instrumentation and controls areas. The inspectors also reviewed procedures for control of measuring and test equipment, performing maintenance, and surveillance testing. Prior to this review, the inspectors reviewed the following administrative procedures:

- STA-608, Revision 15, "Control Of Measuring And Test Equipment"
- STA-702, Revision 11, "Surveillance Program"

- STA-605, Revision 11, "Clearance And Safety Tagging"
- MDA-101, Revision 5, "Maintenance Department Organization And Responsibilities"
- MDA-202, Revision 1, "Maintenance Department Procedure Users Guide"
- MDA-311, Revision 1, "Meter And Relay Calibration Program"
- CP-SAP-05, Revision 17, "Safety Tagging Procedure"

Procedure STA-605 provides a method for controlling the status and configuration of all systems and components under the control of the nuclear operations department through the use of component tagging and restoration processes whenever clearances on plant equipment are necessary. Unit 2 clearances for systems not yet turned over to the operations department are controlled by Startup Administrative Procedure CP-SAP-05. This control will be converted to that established under Procedure STA-605 prior to fuel load. Procedure STA-605 appeared to be adequate to protect personnel and equipment, and to maintain the operability of plant systems and the integrity of the physical boundaries of plant systems.

3.1 Mechanical Maintenance

The inspectors reviewed the following Unit 2 mechanical maintenance procedures and found that procedures were essentially the same as Unit 1 procedures.

- MSM-SO-5713, Revision 1, "Diesel Generator Fuel Oil Tank Cleaning"
- MSM-SO-8702, Revision 1, "Main Steam Safety Valve Setpoint Verification"
- MSM-SO-8800, Revision 0, "Section XI Check Valve Disassembly Inspection"
- MSM-CO-7309, Revision 1, "RHR Pump Maintenance"
- MSM-CO-7304, Revision 1, "Positive Displacement Charging Pump Maintenance"
- MSM-CO-7308, Revision 1, "Containment Spray Pump Maintenance"

There were some additions, such as the inclusion of Unit 2 Borg-Warner check valves, to the surveillance procedures. There were minor differences identified involving the format of procedures. Format changes to the procedures had not been completely implemented in accordance with Procedure STA-202 during this inspection. Format differences will be updated during the biennial review or if a procedure revision is required due to other circumstances. In general, the mechanical maintenance procedures were good.

3.2 Instrumentation and Control (I&C) Procedures

These procedures control the plant instrumentation calibration program, maintenance of plant instruments and controls, and measuring and test equipment. The inspectors reviewed the following procedures for technical adequacy and proper format.

- ICA-101, Revision 2, "I&C Work Control"
- ICA-114, Revision 2, "Instrument and Control Section Procedures"
- INC-4014B, Revision 1, "Solid State Protection System Safety Injection Reset Timing Circuit Calibration, Train B"
- INC-4624B, Revision 1, "Channel Calibration Containment Spray Pump 01 Discharge to Recirculation Header Flow, Channel 4772-1"
- INC-6000, Revision 1, "Calibration of Fluke Model 8600A Digital Multimeter"
- INC-6551, Revision 1, "Calibration of Dial, Digital and Vernier Calipers"
- INC-7815B, Revision 0, "Channel Calibration Reactor Coolant System Loop 1, Cold Leg Wide Range Temperature, Channel 0410F"
- INC-7326B, Revision 0, "Analog Channel Operational Test and Calibration, Steam Generator Narrow Range Level, Loop 2, Protection Set I, Channel 0529"

The inspectors reviewed the I&C procedures index for completeness. It was noted that several procedures were listed with a difference of 4 years between the effective date and the biennial review date. The licensee explained that the effective date is the date the procedure was first issued and does not change until a new revision of the procedure is issued, while the review date is changed after each biennial review to reflect the next biennial review date regardless of whether or not the procedure has been revised. This explanation was consistent with Section 6.7 of Procedure STA-202. While no procedures were found to be out of date, there was no easy way of knowing for certain if a procedure has had its biennial review by looking at either the I&C procedure index or the title page of the procedure. The licensee explained that there is a database that contains procedure histories, including revisions, procedure change notices, and dates of the latest biennial review, which can be called up by a clerk in the administrative services department if needed.

Several minor inconsistencies between Unit 1 and Unit 2 procedures were identified by the inspectors. These inconsistencies were due to revisions made to the controlling Administrative Procedure STA-202, after the Unit 1 procedures had already been issued, but prior to the Unit 2 procedures being

written. As a result, many enhancements that have been included in the Unit 2 procedures have not yet been incorporated into the Unit 1 procedures. In accordance with the requirements of Procedure STA-202, the Unit 1 procedures will be revised when they receive their biennial reviews.

The inspectors concluded that the Unit 2 I&C procedures reviewed were technically adequate to calibrate plant instrumentation, to control the measuring and test equipment, and were written in the proper format in accordance with administrative procedures.

3.3 Electrical Maintenance Procedures (MSE)

These procedures prescribed the repair, replacement, and routine maintenance of plant electrical equipment. The inspectors reviewed the following procedures for technical adequacy and proper format.

- MSE-P2-0861A, Revision 0, "Unit 2, Train A Diesel Generator Protective Relay Functional Check"
- MSE-P2-5005, Revision 0, "Unit 2 Battery Inter-Cell Connector Resistance Test"
- MSE-S2-6302, Revision 0, "Unit 2 480 Volt Air Circuit Breaker Surveillance Test"
- MSE-S2-0402A, Revision 0, "Unit 2, Bus 2EB1 and 2EB3 Overcurrent Surveillance Test"

The inspectors reviewed the index of Unit 2 electrical maintenance procedures for completeness and found it to be complete with one exception. The exception was that one of the 36 procedures in the index was past due for its biennial review.

Review of these procedures found them to be technically adequate to perform the prescribed task, and all but Procedure MSE-P2-5005 were written in the proper format. Preventive Maintenance Procedure MSE-P2-5005 was undergoing review during the inspection and the format will be corrected as part of the review.

3.4 Preventive Maintenance (PM) and Surveillance Program

The inspectors' review of the Unit 2 PM program indicated that a basic program was in place in the "plant reliability - an integrated system for maintenance [PR-ISM]" database. The following procedures were reviewed:

- STA-677, Revision 2, "Preventive Maintenance Program"
- STA-679, Revision 1, "Predictive Maintenance Program"

- CP-SAP-25, Revision 6, "Warehouse and Unit 2 Preventive Maintenance Program"
- STA-673, Revision 1, "Station Layup Program"
- MSM-PO-3321, Revision 0, "Emergency Diesel Generator Oil Change And Addition"
- MSM-PO-8349, Revision 1, "Limitorque Actuator Periodic Mechanical Inspection"

Many of the systems are still controlled under Procedure CP-SAP-25, which gives instructions for PM requirements for both installed and stored equipment. Once the system and equipment are turned over to operations, then PM requirements fall under Procedure STA-677.

As part of the inspection, the inspectors questioned the three maintenance departments about scheduling of required PMs and surveillances. All three departments use the PR-ISM computer program to schedule the required PMs and surveillances. The I&C department work scheduler gets the information from PR-ISM every Monday morning and checks it against the log of the surveillances scheduled to be performed for the coming year. The scheduler then keeps track of the procedures in the log and if one cannot be worked as scheduled, it is rescheduled and tracked to completion. The I&C maintenance scheduler also maintains an independent computerized database and compares it to the PR-ISM database as a backup system. The electrical maintenance scheduler checks the PR-ISM database at least twice a week and keeps a log that runs 6 months in advance. The mechanical maintenance scheduler also reviews the PR-ISM at least twice a week.

The inspectors determined that the residual heat removal system, which was just recently turned over to operations, was in the PR-ISM database and being reviewed and compared against the Unit 1 PM program by the technical support staff. However, the PM program is still in its early stages because many safety-related systems have not been turned over from startup to operations. As a result, the inspectors were unable to verify the implementation of the PM program.

3.5 Conclusion

In conclusion, the inspectors were satisfied that the operations and maintenance procedures reviewed were of generally good quality in that they are sufficient to control the operations and maintenance activities of safety-related systems within regulatory requirements. The existing plant procedures were judged to be fully capable of performing their intended purpose.

ATTACHMENT

1 PERSONS CONTACTED

1.1 Licensee Personnel

- *R. Adams, Instrumentation and Control (I&C) Supervisor
C. Borcharding, I&C engineering
- *R. Braddy, Assistant Project Engineering Manager
- *J. Brau, Supervisor, Operations Support
- *R. Carter, Maintenance Engineer
R. Cutlip, I&C engineering
- *J. Donahue, Operations Manager
- *E. Dyes, Operations Quality Assurance (QA)
R. Green, Maintenance Support
- *J. Hitzfeld, PM Lead, Technical Programs
- *J. Kelley, Vice President, Nuclear Operations
- *D. Kross, Unit 2 Operations
- *E. Luengas, Independent Safety Engineering Group (ISEG) Engineer
- *J. Martin, ISEG, Senior Engineer
- *D. McAfee, QA Manager
- *G. Merca, Licensing Engineer
- *D. Moore, Maintenance Engineer
- *S. Palmer, Stipulation Manager
- *D. Pendleton, Unit 2 Projects
- *G. Phillips, Quality Engineering Supervisor
- *C. Rau, Unit Project Manager
B. Wallace, Electrical Maintenance Procedure Coordinator
- *D. Wilken, Unit 2 Maintenance
- *L. Wojcik, Nuclear and Mechanical Analysis Supervisor

1.2 Citizens Association for Sound Energy

- *O. Thero, Consultant

1.3 NRC Personnel

- *G. Constable, Chief, Plant Support
- *D. Graves, Senior Resident Inspector, Unit 2
- *B. Holian, Project Manager, Unit 2
- *J. Whittemore, Reactor Inspector

In addition to the personnel listed below, the inspectors contacted other personnel during this inspection period.

* Denotes personnel that attended the exit meeting.

bcc to DMB (IE01)

bcc distrib. by RIV:

J. L. Milhoan
 DRP
 Lisa Shea, RM/ALF, MS: MNBB 4503
 DRSS-FIPS
 Project Engineer (DRP/B)
 DRS
 D. Skeen, NRR
 C. Johnson
 T. Stetka

Resident Inspector (2)
 Section Chief (DRP/B)
 MIS System
 RSTS Operator
 RIV File
 Section Chief (DRP/TSS)

RIV:RI:MS	C:MS <i>JS</i>	D:DRS <i>JS</i>	D:DRP <i>JS</i>	
<i>CE</i> CEJohnson/lb	TFStetka	SOCollins	ABBeach	
12/10/92	12/8/92	12/10/92	12/10/92	

2 EXIT MEETING

An exit meeting was conducted on November 19, 1992. During this meeting, the inspectors reviewed the scope and findings of the report. The licensee did not identify as proprietary, any information provided to, or reviewed by the inspectors.