

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-445/84-21                      Construction Permit: CPPR-126

Docket: 50-445    Category: A2

Licensee: Texas Utilities Electric Company (TUEC)  
Skyway Tower  
400 North Olive Street  
Lock Box 81  
Dallas, Texas 75201

Facility Name: Comanche Peak Steam Electric Station (CPSES), Unit 1

Inspection At: Glen Rose, Texas

Inspection Conducted: June 1-30, 1984

Inspectors: *Dennis L. Kelley*    *8/8/84*  
D. L. Kelley, Senior Resident Reactor Inspector    Date  
(SRRI) (paragraphs 1, 3, 4, and 5)

*W. F. Smith*    *8/8/84*  
W. F. Smith, Resident Reactor Inspector (RRI)    Date  
(paragraphs 1, 2, 3, and 5)

Approved: *D. M. Hunnicutt*    *8/9/84*  
D. M. Hunnicutt, Team Leader, Task Force    Date

Inspection Summary

Inspection Conducted: June 1-30, 1984 (Report 50-445/84-21)

Areas Inspected: Routine, announced inspection of (1) plant procedures inspection; (2) preoperational test witnessing; and (3) plant tours.

The inspection involved 180 inspector-hours onsite by two NRC inspectors.

Results: Within the areas inspected, two violations were identified and were transmitted under separate cover to the licensee on July 18, 1984, as Severity Level IV Violations, 445/8421-01, Supplement II-D, and 445/8421-02, Supplement II-E.

DETAILS

1. Persons Contacted

Licensee Personnel

- \*B. R. Clements, Vice President, Nuclear Operations
- \*J. C. Kuykendall, Manager, Nuclear Operations
- \*R. A. Jones, Manager, Plant Operations
- J. T. Merritt, Assistant Project General Manager
- \*J. H. Roberts, Construction Startup Turnover Surveillance Supervisor
- \*T. P. Miller, Lead Startup Engineer
- \*R. B. Seidel, Operations Superintendent
- \*H. A. Lancaster, Startup Quality Assurance Specialist
- \*J. C. Smith, Quality Assurance
- \*T. L. Gosdin, Support Services Superintendent
- \*D. E. Deviney, Operations Quality Assurance Supervisor
- \*S. M. Franks, Startup Special Projects
- R. R. Wistrand, Administrative Superintendent
- J. Moorefield, Office Services Coordinator CPSES
- D. C. Hisey, System Test Engineer
- J. A. Van Gulik, System Test Engineer
- K. B. Becker, System Test Engineer
- K. E. Hemmila, System Test Engineer
- S. E. Harvey, Assistant Shift Supervisor
- R. L. Fortenberry, Shift Supervisor
- M. S. Harris, System Test Engineer
- M. Smith, Shift Supervisor
- R. Beck, System Test Engineer

Others

The NRC inspectors also interviewed other licensee employees during this inspection period.

\*Denotes those present during the exit interview.

2. Plant Procedures Inspection

The objective of this inspection was to determine that the scope of the plant procedures system is adequate to control safety-related operations within applicable regulatory requirements and to determine the adequacy of management controls in implementing and maintaining a viable procedure system.

The first segment of this inspection module was accomplished during the period March 1 through April 30, 1984. The results of the inspection are

described in NRC Inspection Report 50-445/84-15, dated July 3, 1984. The plant procedures inspection was completed June 30, 1984. Detailed operating, emergency, and maintenance procedure inspections will be conducted separately and reported in subsequent inspection reports.

The following procedures were reviewed during this inspection period:

STA-605 (Rev.3)	"Clearance and Safety Tagging"
STA-707 (Rev.1)	"Safety Evaluations"
STA-606 (Rev.3)	"Maintenance Action Requests"
STA-608 (Rev.5)	"Control of Measuring and Test Equipment"
STA-616 (Rev.0)	"Control Room and Observation Area Access"
SOP-609A (Rev.0)	"Diesel Generator System"
SOP-501A (Rev.0)	"Station Service Water System"
ODA-202 (Rev.2)	"Preparation of System Operating Procedures"
ODA-301 (Rev.3)	"Operating Logs"

The RRI verified that responsibilities have been assigned to assure that site procedures such as those listed above are reviewed, updated, approved, and that 10 CFR 50.59 considerations are included in the review. In addition, the NRC inspector verified that when special orders are used, administrative controls have been established that provide a mechanism for their review, issuance, distribution, and limitations for use.

The RRI interviewed a reactor shift supervisor to determine whether or not he understood the systems established for controlling temporary changes to procedures. Several pertinent questions were asked, and all of the answers provided by the shift supervisor were correct. As the NRC inspector witnessed the daily progress of preoperational testing, he noted that the shift supervisors as a group were sufficiently aware of the established systems.

The NRC inspector reviewed the above listed procedures to ensure that:

- . The review, approval, and updating had been done in accordance with station administrative requirements.
- . The issuance and superseding of the procedures were done in accordance with the established controls.

- . The procedures were formatted properly.
- . The procedures were free of typographical errors, conflicts, or editorial errors.
- . The procedures were adequate for the intended purpose and scope.
- . The working copy at key locations such as the control room is the latest revision.

Upon completion of the above review, the NRC inspector did not identify any significant deficiencies; however, the following comments were offered to the licensee for consideration to reduce the possibility of problems in the future:

STA-605

Section 4.1.9 does not require independent verification of danger tags for nonsafety-related systems that do not affect the safe operation of the plant. Discussion with shift supervisors revealed a tendency on their part to be conservative in actual practice and require such verification checks on most, if not all, tagouts. The NRC inspector stated to representatives of the licensee that some plants require independent verification checks in those situations where operating system pressure, temperature, electrical, or radiological conditions could result in equipment damage or injury to personnel. Usually the pressure is defined as greater than 150 pounds per square inch gage and/or temperatures greater than 200 degrees Fahrenheit. The licensee agreed to consider this matter for the next revision of STA-605.

Section 4.1.9 states that the hanging of danger tags "should not normally" be done simultaneously with the independent verification check. The NRC inspector recommended that the statement be changed to "shall not." The NRC inspector was concerned that the power of suggestion in watching a tag being hung on a component could lead the verifier into believing the component was correct instead of the verifier independently determining the component was correct. This can defeat the concept of independent verification.

The NRC inspector noted that Attachment 1 of STA-605, "Clearance Report," did not have a column for the independent verification of tag removal and restoration of each component in accordance with Section 4.2.2.3. This action is not documented except by a single signature. Such a column would be a good tool to help the verifier check off each item, and would provide better assurance to the shift supervisor that none were inadvertently overlooked.

The above comments were discussed with the licensee's representative, who indicated that the comments are under consideration and that some of them are already incorporated into a major rewrite of STA-605 that is currently underway. In particular, the attachment, such as the clearance report, has been improved significantly to incorporate such features as verification columns discussed above.

#### STA-707

Section 4.1.5 does not clearly implement the requirement of 10 CFR 50.59(b) to publish a periodic (at least annual) report of changes made as permitted by 10 CFR 50.59(a). During discussion between the RRI and the licensee's representative, two major points relative to this report were brought out by the RRI.

IE Circular 80-18 dated August 22, 1980, clarifies the NRC requirements for the report. In short, the Circular points out that, for all cases requiring a written safety evaluation, the safety evaluation must set forth the bases and criteria used to determine that the proposed change does not involve an "unreviewed safety question." Though the annual report can be brief, a simple statement of conclusion in itself is not sufficient. The regulation requires a summary of the safety evaluation. Changes made under the authority of 10 CFR 50.59(a) are reportable and should appear in the annual report, if a change in the facility or procedure generates a need for revision of any of the text or drawings in the current Safety Analysis Report (SAR).

In addition, tests or experiments not described in the current SAR shall also be reported if they are to be added to the SAR. Section 4.1.5 of STA-707 should more clearly address the requirements of 10 CFR 50.59.

#### ODA-202

Section 4.2.6.1 of ODA-202, Revision 2, requires the "Instructions" section of system operating procedures to be subdivided into specific evolutions of operation. Examples are, "Startup," "Normal Operations," "Shutdown," and "Draining." Because of the differences between systems it is not practical to use the subsections specified by ODA-202. Consequently, some standard operating procedures (SOPs) do not follow the formatting requirement, such as SOP-503, "Surface Water Pretreatment System," SOP-607A, "118 VAC Distribution System and Inverters," SOP-706, "Digital Radiation Monitoring System," and SOP-710, "Incore Instrumentation System." The NRC inspector discussed this with the

licensee, who stated that there is a major rewrite of SOPs in progress, and formatting problems such as this are being corrected. Since these procedures are scheduled for NRC review after publication, the NRC inspector indicated that this area would be reinspected at a later date.

There were no other concerns, deficiencies, or violations noted during the procedures inspection.

3. Preoperational Test Witnessing

a. 1CP-PT-37-01, RT-1, "Auxiliary Feedwater System (Motor Driven Pumps)"

The purpose of this retest was to verify those items which remained open items to 1CP-PT-37-01, Rev. 0, and to retest certain items which require retest due to rework. The items to be tested and reason for retest were:

- (1) Auxiliary feedwater valves control logic due to major rework of control boards, analog racks, relay racks, and cable spread room wiring.
- (2) Motor-driven auxiliary feedwater pumps 1-1 and 1-2 control logic due to major rework of control boards, analog racks, relay racks, and cable spread room wiring.
- (3) Motor-driven auxiliary feedwater pumps 1-1 and 1-2 hydraulic performance due to redesign of test line, mini-flow orifice, and a 1CP-PT-37-01, Rev. 0, open item.
- (4) Auxiliary feedwater system response time because system response time was not determined during performance of 1CP-PT-37-01, Rev. 0.
- (5) Auxiliary feedwater pumps 1-1 and 1-2 endurance test due to redesign of test line orifice due to unsatisfactory operation of original test line orifice.

The NRC inspector noted that during the section of the test to verify item (1) above, the timing of the feedwater valves was not within the range specified in the test. An error in the calibration of the timing logic was found to be the problem. The logic was recalibrated and the test section was reperformed and the results were satisfactory. During the 48-hour performance run of pump 1-1, a high temperature condition developed in the pump outboard bearing. This resulted in having to stop the pump and check for bearing misalignment or other problems. There were no apparent problems.

Several attempts were made to re-initiate the 48-hour run. These were unsuccessful until it was determined that there was too much oil in the outboard bearing. The level was adjusted and the 48-hour performance run of pump 1-1 was successfully completed.

b. ICP-PT-49-01, Rev. 3, "Letdown, Charging and Seal Water System"

The purpose of the test was:

- (1) To verify proper operation of control and interlock functions for various valves and pumps in the Chemical and Volume Control System (CVCS) (see Section 2.0 for components tested).
- (2) To verify response of various CVCS valves and pumps to Solid State Protection System (SSPS) signals such as safety injection, including response times of valves.
- (3) To verify hydraulic performance of the positive displacement charging pump.
- (4) To verify proper operation of the volume control tank diversion valves.

The NRC inspector observed portions of the last phases of this test. A review of the completed portion of the test was also performed, including a review of the test log entries, test procedure deviations and test deficiency reports, if any. The witnessing of this test was in addition to the preoperational tests preselected by the NRC inspectors for observation.

c. ICP-PT-57-02, RT-1, "Centrifugal Charging Pump Test"

The purpose of this test was to verify proper operation of control and interlock functions for various valves in the CVCS which are related to the centrifugal charging pump high head injection flowpaths. The retest was required as a result of electrical rework for train separation criteria and walkdown deficiencies.

The NRC inspector witnessed portions of the test performance from the control room and hot shutdown panel. There were no problems encountered with the test.

The NRC inspector, however, noted that when a transfer switch is operated to transfer control of a device from the control room to the hot shutdown panel the device being transferred will go to the position dictated by the control switch on the hot shutdown panel. This will result in valves changing position unless the hot shutdown panel

valve control switches are matched to the actual valve positions prior to operating the transfer switches. This concern was discussed with the licensee, who indicated that procedural or hardware changes are under consideration. The NRC inspector will followup on this during subsequent inspections.

d. ICP-PT-04-01, RT. 1, "Station Service Water (SSW)"

The purpose of this test was to verify the operating characteristics and to demonstrate the capability of each train of the SSW to supply adequate flow to each of the components served.

As independent inspection effort, the NRC inspectors witnessed the performance of this preoperational test over a period of several days. There were no major problems associated with obtaining satisfactory test results. The system performed as expected. However, the NRC inspector observed problems which resulted in two violations:

- (1) During the flow balancing of the SSW system in accordance with ICP-PT-04-01, it was necessary to place the SSW Chlorination System in operation in accordance with System Operating Procedure SOP-501A, "Station Service Water System." Step 5.4.1.6 of SOP-501A directs the operator to open SSW Chlorination Valve XSW-036. The operator, in the presence of the System Test Engineer (STE), noticed that what appeared to be the correct valve was labeled "XSW-042." Instead of halting the test to determine whether the valve label or the procedure was in error, the operator proceeded to open the valve. When the NRC inspector brought his attention to the procedure violation, the operation was aborted and the valve restored to the shut position. Subsequently, it was determined the procedure was in error; thus, it was changed accordingly and the operation resumed.

Prior to issuance of this inspection report, the Notice of Violation was transmitted to the licensee as Severity Level IV Violation 445/8421-01. This is the second violation issued in recent weeks pertaining to lack of procedure compliance. The previous violation was identified as 445/8418-01 and contains three examples of failure to follow procedures. The licensee was made aware by the resident inspectors of the importance of decisive permanent corrective action by senior management to prevent future procedure violations as the pace of testing and operations increases at CPSES.

(2) During the flow balancing of the SSW system, when the procedure required the STE to record the flow of service water to containment spray cooling, the installed gage was pegged high with or without flow. It became evident that the gage was malfunctioning due to air binding. There was no prerequisite in the ICP-PT-04-01 to provide for filling and venting of the installed instruments used for this test, just prior to the test. Without such a prerequisite, the data is subject to question, because air in the instrument lines will cause erroneous readings. This is contrary to Criterion XI of Appendix B to 10 CFR 50, and Notice of Violation was transmitted to the licensee prior to this inspection report in which the violation was identified as a Level IV Violation 445/8421-02.

e. ICP-PT-29-02, RT-1, "Diesel Generator (DG) Control Circuit Functional and Start Test"

The purpose of this test was to functionally demonstrate electrical and pneumatic control circuit operability in the manual mode of operation for Train A diesel generator.

The NRC inspector witnessed parts of this test to verify that the testing was conducted in accordance with approved procedures, that the observations recorded by the STE were consistent with the observations of the NRC inspector, that test results were adequately documented, and that the procedure is adequate to accomplish the intended purpose.

The test was conducted in a professional efficient manner. There were no problems observed by the NRC inspector with regard to the above attributes; however, as the NRC inspector observed the interlock testing associated with the DG barring device (the "Barring Device" is an air-operated jacking mechanism installed on the DG for the purpose of rotating the crankshaft during maintenance), he noticed that service air was not connected. Instead, a temporary air hose was connected from a portable diesel air compressor outside. ICP-PT-29-02 did not have a prerequisite requiring service air (or a temporary source of air) to conduct the test. This left the STE to his own devices to perform the test and as such is contrary to Criterion XI of Appendix B to 10 CFR 50.

f. In addition to the above tests that were completed during this reporting period, these three additional tests were started but are still in progress. These tests are:

ICP-PT-48-02, "Containment Spray System

ICP-PT-02-02, "118 VAC RPS Inverters"

ICP-PT-34-01, Rev. 1, "Main Steam Isolation Valves"

No violations or deviations were found during witnessing of the above three operational tests.

4. Plant Status

The following is a status of TUEC (TUGCO) manning levels for operations and plant testing activities as of June 30, 1984.

a. Operations Manning Status

Authorized Personnel Level (including maintenance, operations, administration, quality assurance, and engineering) - 553

Number Presently on Board - 482

b. Plant Testing Status

The present status of the NRC preoperational testing phase inspection program is approximately 60 percent complete.

The licensee preoperational testing program is as follows:

Test Completion Status

Preoperation Tests-136

Acceptance Tests-64

5. Exit Interview

An exit interview was conducted July 6, 1984, with licensee representatives (identified in paragraph 1). During this interview, the SRRI and RRI reviewed the scope and discussed the inspection findings. The licensee acknowledged the findings.