

APPENDIX C

OPERATIONS INSPECTION REPORT

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/85-14

Permit: CPPR-126

Docket: 50-445

Category: A2

Applicant: 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: October 1-31, 1985

Inspectors:

Dennis L. Kelley
D. L. Kelley, Senior Resident Reactor Inspector
(SRRRI), Region IV CPSES Group
(paragraphs 1, 5, 7, 8)

2/27/86
Date

W. F. Smith
W. F. Smith, Resident Reactor Inspector (RRI)
Region IV CPSES Group
(paragraphs 1, 2, 3, 4, 5, 6, 7, 8)

2/28/86
Date

Reviewed By:

I. Barnes
I. Barnes, Group Leader, Region IV CPSES Group

3/3/86
Date

Approved:

T. F. Westerman
T. F. Westerman, Chief, Region IV CPSES Group

3/3/86
Date

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Inspection Summary

Inspection Conducted: October 1-31, 1985(Report 50-445/85-14)

Areas Inspected: Routine, unannounced inspection of (1) applicant actions on previous inspection findings, (2) maintenance procedures, (3) preventive maintenance programs, (4) plant tours, and (5) plant status. The inspection involved 117 inspector-hours onsite by two NRC inspectors.

Results: Within the five areas inspected, one violation (failure to maintain sufficient chemistry records, paragraph 4) was identified.

DETAILS

1. Persons Contacted

Applicant Personnel

- *A. B. Scott, Vice President Operations
- *J. C. Kuykendall, Vice President
- *C. H. Welch, Quality Control Services Supervisor
- *R. B. Seidel, Operations Superintendent
- S. N. Franks, Special Project and Technical Support Lead
- *M. R. Blevins, Maintenance Superintendent
- D. E. Deviney, Operations QA Supervisor
- *R. A. Jones, Manager, Plant Operations
- K. L. Luken, Lead Startup Engineer
- *R. R. Wistrand, Administrative Superintendent
- *D. W. Braswell, Engineering Superintendent
- *J. C. Smith, Quality Assurance
- *T. L. Gosdin, Support Services Superintendent
- *G. M. McGrath, Licensing/Compliance Supervisor, Startup
- *M. J. Riggs, Operations Support Engineer
- D. M. Jones, Maintenance Engineering Technician
- L. Parr, Maintenance Engineer
- K. Stenburg, Maintenance Engineer
- T. Justis, Maintenance Engineer
- H. Haby, Instrumentation & Controls Staff Engineer
- W. Jones, Instrumentation & Controls Staff Engineer
- B. Taylor, Instrumentation & Controls Engineer
- R. D. Delano, Chemistry & Environmental Engineer
- G. B. Moore, Chemistry & Environmental Supervisor
- R. L. Theimer, Chemistry Supervisor

*Denotes applicant representatives present during exit interview of paragraph 8.

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

2. Applicant Actions on Previous Inspection Findings

- a. (Closed) Open Item 445/8436-05: Applicant to provide a response manual for the loose parts monitoring system. In Section 5.4.3 of the Safety Evaluation Report (July 1981), the staff indicated acceptance of the applicant's loose parts monitoring system. The SRRI issued Open Item 445/8436-05 to track the applicant's issuance of a response manual for the loose parts monitoring system. On October 10, 1985, EDA-310, "Analysis of Loose Parts Monitoring System Data" was issued, which provides instructions for use of the system. This item is closed.
- b. (Closed) Open Item 445/8502-01: Voiding of signatures in preoperational test data packages. During routine inspections of completed preoperational test data packages, the RRI noted inconsistencies in the methods used by System Test Engineers (STEs) to void or supersede previous signatures when test steps had to be repeated. Section 4.8 of CP-SAP-21 required the STEs to void entries by lining through and signing (or initialing) the line-outs and dating them. Sometimes the STE failed to sign and date the line-out, thereby casting doubt on the part of a reviewer as to whether the signature was for the line-out or for reperformance of the step. The RRI suggested that a more straight-forward method of superseding such steps be considered. The applicant has since responded that the requirements of CP-SAP-21 will not be changed; thus the STEs will be expected to comply with Section 4.8 when voiding signatures. This item is closed.
- c. (Closed) Open Item 445/8502-02: Unclear justifications for test procedure deviations (changes). While reviewing completed preoperational test data packages, the RRI identified a number of cases where the STE did not enter a clear and concise reason or justification for making minor changes to test procedures, which are called test procedure deviations (TPDs). It appeared that if more specific direction was provided in Startup Administrative Procedure CP-SAP-12, "Deviations to Test Instructions/Procedures," this problem might not have existed. The applicant has since issued Revision 3 of CP-SAP-12 which directs the TPD author to enter a detailed justification for each change. The RRI reviewed the revised procedure and is satisfied with the change. This item is closed.
- d. (Closed) Open Item 445/8502-03: Post-completion changes to test documentation. During an inspection of completed preoperational test data packages, the RRI identified what appeared to be post-completion changes to test procedures using test deficiency reports (TDRs) as the authorizing document. Although this practice did not have any adverse effects on the test records, administrative procedures did not provide for such changes. The applicant's response to this item

was that test data packages were not being "revised or changed" by TDRs, per se, but rather were being "annotated" to show the correct information found during the data package review which was in turn documented and evaluated by the TDR. This concern is being addressed by recent changes to the Startup Administrative Procedures Manual to clarify the entry of corrections during completed test data reviews. For example, on July 8, 1985, Revision 6 to CP-SAP-11, "Review, Approval, and Retention of Test Results," was issued. The revised administrative procedure now requires the Joint Test Group (JTG) to document test data review comments and resolutions, and to include this with the supporting documentation in the completed test data package. This will provide a means by which problems found during the JTG review of test data can be documented along with the JTG-approved disposition. The TDR will still be utilized to document bonafide deficiencies and corrective actions (including retesting, if any); however, the applicant has indicated that changes or revisions will not be made against completed test procedures. This item is closed.

- e. (Closed) Unresolved Item 445/8502-08: Discontinuity between reference drawing revisions in similar test procedures. While conducting an inspection of the completed preoperational test data package for ICP-PT-29-03, Retest(RT)-2, the NRC inspector noted that the list of reference drawings contained later revisions of the same drawings referred to in ICP-PT-29-03, RT-1, which was conducted later than RT-2. The issue was whether or not failure to update the references for ICP-PT-29-02, RT-1 had any affect on test performance. After the question was raised, the applicant responded by explaining that RT-1 did not have the correct revision numbers; however, since the objective of both tests was to start and load test the emergency diesel generators, the revisions of the reference drawings had no significance and thus did not affect the outcome nor the objectives of the test. The applicant filed a copy of the response and explanation as a supplement to the completed test data packages for ICP-PT-29-03, RT-1 and RT-2 for future reference. This item is closed.
- f. (Closed) Open Item 445/8502-11: During an inspection of the completed preoperational test data package for ICP-PT-57-10, "Load Group Assignment," the SRRJ noted that TDR-3676 had identified a failure to accomplish the slow transfer of train B bus 1EA2 when initiated by the test procedure. Under corrective action, the TDR referenced Maintenance Action Request (MAR) 84-4036 to repair and/or adjust the auxiliary switches and actuating bar at a later date. Meanwhile, per the TDR, the switches were placed in the required position manually so that the test could be resumed, including a repeat of the slow transfer test, which was successful. The MAR and MAR retest documents were not in the test data package. Subsequent

RRI review of the completed MAR revealed that the actuating bar was in need of lubrication and operated freely once lubricated. The applicant's representatives explained that the state of the auxiliary switches was in a condition required for accomplishment of the test and that testing of this breaker was not an objective of the test; thus, it was not necessary to repeat the applicable section of ICP-PT-57-10 after the actuating bar was lubricated and successfully exercised. This item is closed.

- g. (Closed) Open Item 445/8502-12: Potential impact of reference drawing changes in preoperational test ICP-PT-57-10. During the completed test data package review of ICP-PT-57-10 conducted by the applicant, TDR-3966 was issued identifying a failure to update the correct revision of 15 drawings referenced in the test procedure. The SRRI was concerned that no documentation existed in the completed test data package showing that an evaluation was made to determine the impact this might have on the test results. The RRI verified that the applicant had since conducted the evaluation, documented the results on letter TSU-85169 of October 14, 1985, and incorporated the letter into the completed test data package. The evaluation did not identify any impact on test results. This item is closed.
- h. (Closed) Open Item 445/8506-02: Open TDR in a completed preoperational test package. During routine inspection of the completed preoperational test data package for ICP-PT-64-01, the RRI found TDR 3793 filed in the package with no evidence that it had been properly dispositioned and closed. Subsequently, the applicant's representative responded by explaining that this TDR was not written against ICP-PT-64-01; however, it was filed in the package for information only. Any testing issues associated with this TDR and the referenced containment spray valves have been deferred to the initial startup test program. The RRI found this to be adequately tracked by TUGCO Operations under DPTR-85-002. This item is closed.

3. Maintenance Procedures

The objective of this inspection was to confirm that plant maintenance procedures were prepared to adequately control maintenance and surveillance testing of safety-related systems within applicable regulatory requirements.

The inspection included verification that:

- o Adequate procedures and processes were in place for control of measuring and test equipment (M&TE);
- o Procedures had been published for performing preventive and selected corrective maintenance;

- o Adequate procedures and programs existed for the implementation of surveillances required by Technical Specifications (TSs);
- o All procedures were in the appropriate format as specified in the administrative control manual, and that they were technically adequate to accomplish their stated purpose; and
- o Where appropriate, procedures prescribed steps important to the protection of the health and safety of the workers and of the public.

The maintenance procedure inspection commenced in September 1985 and continued through completion in October 1985. Details of the inspection conducted in September 1985 were reported in Appendix G of NRC Inspection Report No. 50-445/85-13.

- a. The following procedures were reviewed by the NRC inspector which met the objectives of this inspection and for which there were no comments or adverse findings:
 - o INC-101, Revision 4, "I&C Maintenance Program";
 - o INC-109, Revision 1, "I&C Preventive Maintenance Program";
 - o INC-7323A, Revision 1, "Analog Channel Operational Test and Channel Calibration - Steam Generator NR Level, Loop 1, Protection Set III, CH 0518";
 - o INC-601, Revision 2, "Digital Multimeter Calibration";
 - o INC-624, Revision 2, "Pressure Test Gauge Calibration";
 - o INC-631, Revision 1, "Dial-Type Thermometer Calibration";
 - o MMI-302, Revision 0, "Reactor Coolant Pump Seal Replacement";
 - o MMI-320, Revision 0, "Pressurizer Spray Nozzle Inspection";
 - o EMI-313, Revision 1, "Centrifugal Charging Pump Motor Inspection"; and
 - o EMI-806, Revision 0, "Electric Penetration Removal, Repair, and Installation."
- b. Procedures INC-2006X, Revision 0, "Filling and Venting Flow and Differential Pressure Transmitters (Water or Steam)," and INC-2007X, Revision 0, "Venting and Filling Pressurizer and Steam Generator Level Transmitters," were found to not meet the objectives of this inspection as identified below. On March 21, 1985, Severity Level IV

Notice of Violation 445/8445-02 was issued citing the applicant for failure to provide adequate procedures appropriate to circumstances. The circumstances involved an Instrumentation and Control (I&C) technician who attempted to fill a pressurizer level detector reference leg while the plant was hot in accordance with an inadequate procedure (i.e., ICI-2007), which led to errors and a first degree thermal burn on his forearm. One of the preventive actions in the applicant's response to the violation dated April 15, 1985, was to revise ICI-2007 which became INC-2007X. Another action was to review the remaining applicable procedures for similar procedural problems. The applicant stated that there were no other procedural problems that would result in a similar incident. ICI-2006 was among those reviewed and it has since become INC-2006X. In light of the problems found by the RRI when he reviewed these two representative procedures, violation 445/8445-02 could not be closed. This was discussed with applicant management during the exit interview of November 1, 1985, and acknowledged.

The revised procedures (INC-2006X and INC-2007X) contained steps that were unnecessary, and contained instructions to perform preparations (i.e., assembling test equipment) in a radiation area when they could have been done in a nonradiation area. It was apparent to the NRC inspector that ALARA program considerations were not incorporated into the procedures. The ALARA ("As Low As Reasonably Achievable") Program is implemented by HPA-101, "ALARA PROGRAM," which requires procedures, planning, and training to ensure all ionizing radiation exposure is reduced to as low as reasonably achievable on the basis of the state of technology and the economics of reducing exposure relative to the benefits realized.

Both of the above procedures were inconsistent as to how to isolate and equalize differential pressure detectors.

Some steps were not flagged for radiological controls when potentially radioactive material was to be handled.

Double valve isolation was not utilized as required by INC-101 to protect the I&C technicians from temperatures in excess of 200°F.

Filling and venting of differential pressure detectors should include sweeping air bubbles out through the equalizer valves. INC-2006X did not provide for this.

INC-2007X had a caution note which stated that the reference legs are connected to the high pressure side of the sensors. This is not true in the case of Rosemount Detector ILT-459F, thus the procedure does not accurately reflect the equipment to which it is to be applied,

indicating inadequate procedure reviews.

The above deficiencies were discussed in detail with the applicant's representative, who subsequently provided the NRC inspector with a sample mark-up of INC-2007X which reflected acknowledgement and correction of the deficiencies discussed. Since correction of deficiencies such as the above is related to corrective actions associated with violation 445/8445-02, additional tracking of this issue is not necessary.

There were no additional violations or deviations identified.

4. Preventive Maintenance Programs

The RRI is conducting an on-going inspection to verify that an adequate preventive maintenance program is scheduled and implemented, both from a routine equipment readiness standpoint, and in consideration of the length of shutdown time between Unit 1 preoperational testing and startup. This inspection includes verification that adequate controls exist to ensure equipment maintenance will be followed by appropriate tracking and performance of retests prior to restoring the equipment to an operational status.

The NRC inspector interviewed applicant representatives responsible for the implementation and tracking of preventive maintenance and surveillance testing. Three groups have separate responsibilities in this area:

- o Maintenance Engineering: Mechanical and electrical maintenance, including meter and relay maintenance.
- o Instrumentation & Control: Maintenance of plant system instrumentation and controls.
- o Results Engineering: Surveillance tests and inspections required by TSs.

Maintenance Engineering has implemented a plant equipment preventive maintenance program in accordance with Maintenance Department Administration Procedure MDA-301, "Preventive Maintenance Program." The program was developed to satisfy the requirements of ANSI N18.7-1976 as well as the maintenance manuals furnished by Westinghouse and other vendors. The scope of the program encompasses all electrical and mechanical equipment that are not assigned specifically to the I&C group.

I&C implements an overall maintenance program on equipment within their cognizance in accordance with INC-101. There are other subordinate implementing procedures, such as INC-107, which cover all scheduled calibrations and all required TS surveillance items that are assigned to I&C. INC-109, for example, covers all preventive maintenance not already covered by INC-107.

Results Engineering will implement the surveillance program in accordance with STA-702, "Surveillance Test Program." This provides for scheduling, tracking, review and disposition of the records for all surveillances required by the TSs.

The RRI interviewed representatives from each of the above groups, at which time the respective programs were explained. In general, it appears that a comprehensive preventive maintenance program is in place, that is managed through computer scheduling and tracking programs. During future NRC inspections, it will be determined if the programs are effective and the equipment is being maintained in a satisfactory state of readiness.

The RRI reviewed chemistry records for steam generators and primary fresh water cooling systems between January 1983 and September 1985 to ensure that required records were in place, that corrective measures were promptly taken when out-of-specification results were obtained, and that there was a full continuity of samples taken consistent with frequency requirements. This review identified the concerns discussed below.

The primary fresh water cooling systems chemistry results were recorded on Form CHM-508-1, which is required by CHM-508, "Chemistry Control of the Primary Cooling Systems." Systems under the purview of this procedure are Safety Chill Water, Non-Safety Chill Water, Diesel Generator Water Jackets, Component Cooling Water, and BTRS Chill Water. In general, a lack of data entry discipline existed, but with an improving trend, from January 1983 to present. For example, in many cases sample results were not entered, but there was no explanation. Presumably, the systems were drained or otherwise not available for sampling. Out-of-specification conditions were not flagged such that the RRI could determine that necessary notifications and corrective actions were implemented.

Specifically, weekly samples were taken 10 to 12 days apart in November 1983. Sample data entries did not exist in the Records Center for the weeks of March 28, 1983; June 7, 1983; June 14, 1983; June 21, 1983; June 28, 1983; October 3, 1983; December 16, 1983; December 23, 1983; and December 30, 1983.

Steam generator chemistry results for No. 1 and No. 2 steam generators were reviewed for the period between January 1984 and September 1985. The data appeared on Form CHM-501-1 which is a requirement of CHM-502, "Chemistry Control of the Steam Generators." In many cases, out-of-specification results were not flagged as required by CHM-501, to indicate that the shift supervisor was notified and at what time. Some samples were not taken, but no explanation existed. As was the case with primary cooling systems, the attention to detail expected to be seen on

such records did not appear to exist, even though all the forms were reviewed and approved by supervision.

Specifically, pH for both steam generators was recorded as being out-of-specification low (i.e., as low as 9.0 when a range of 9.8 to 10.5 was required by CHM-501, Attachment 1) from June 20, 1984, through October 8, 1984, with no apparent explanation. When the RRI questioned this, the applicant's representative explained that there had been a considerable amount of discussion between the applicant and Westinghouse and that there had been no urgent need to correct the condition since the steam generators were in cold wet layup. At the time, the applicant could not produce documentation supporting this information. The RRI was presented with a copy of Problem Report PR84-361 which was originated on October 5, 1984; over three months after the problem of low pH became known. The report did not identify the pH as having been out-of-specification low for over three months, but, rather, stated that the mechanical seals on the recently installed recirculation pumps were leaking, causing carbon dioxide entrainment, which in turn caused a "depression" of pH in the steam generators. The engineering review did not evaluate the effects of the long-term pH depression on steam generators. The RRI was also presented with Independent Safety Engineering Group Report 84-03, which documented a review of steam generator water chemistry control. The review included the period when pH was depressed, but stated that, ". . . Plant chemistry personnel report that the steam generators chemistry sample data is stable and no problem areas have been noted." There was no mention of the pH problem. The report concluded, ". . . prompt response to out-of-specification conditions indicate that no significant corrosion related damage has occurred in the Unit 1 steam generators." The applicant was requested to provide the RRI with documented evidence which proves that the quality of the primary and secondary boundaries of the steam generators had not been compromised as a result of over three months out-of-specification low pH. This is an unresolved item (445/8514-U-01).

The concerns identified above with respect to what appears to be missed chemistry samples, failure to indicate when and if the Shift Supervisor was notified as out-of-specification results were obtained, a lack of records to indicate corrective actions taken, and inadequate reviews of data forms constitute a violation of Criterion XVII of Appendix B to 10 CFR Part 50 (445/8514-V-01).

5. Plant Tours

During this reporting period, the SRRI and RRI conducted inspection tours of Unit 1. In addition to the general housekeeping activities and general cleanliness of the facility, specific attention was given to areas where safety-related equipment was installed and where activities were in progress involving safety-related equipment. These areas were inspected to ensure that

- o Work in progress was being accomplished using approved procedures;
- o Special precautions for protection of equipment were implemented, and additional cleanliness requirements were being adhered to for maintenance, flushing, and welding activities;
- o Installed safety-related equipment and components were being protected and maintained to prevent damage and deterioration.

Also during these tours, the SRRI and RRI reviewed the control room and shift supervisors' log books. Key items in the log review were:

- o plant status,
- o changes in plant status,
- o tests in progress, and
- o documentation of problems which arise during operating shifts.

No violations or deviations were identified.

6. Unresolved Items

Unresolved items are matters for which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. One unresolved item disclosed during the inspection is discussed in paragraph 4.

7. Plant Status as of October 31, 1985

- a. Unit No. 1 is reported to be 99% complete; however, excavation is underway to facilitate replacement of main condenser internals and a significant amount of rework continues on the control room ceiling.
- b. Unit No. 2 is reported to be 77% complete. The preoperational test program on systems associated with NRC inspections has not yet started.

8. Exit Interview

An exit interview was conducted November 1, 1985, with the applicant representatives identified in paragraph 1 of this appendix. During this interview, the NRC inspectors summarized the scope and findings of the inspection. The applicant acknowledged the findings.