

APPENDIX C

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/84-08
50-446/84-04

Dockets: 50-445; 50-446

Construction Permits: CPPR-126
CPPR-127

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 (CPSSES), Units 1 and 2

Inspection At: Glen Rose, Texas

Inspection Conducted: November 14, 1983 through March 31, 1984

Inspectors: *L M Hunnicutt* 4/10/84
for J. E. Cummins, Senior Resident Inspector-Construction Date
(paragraphs 1, 2, 3, 5, 6, 7, 8, 9, 10, 13)

L M Hunnicutt 4/10/84
for W. F. Smith, Resident Inspector-Operations Date
(paragraphs 1, 4, 13)

L. E. Martin 4/10/84
L. E. Martin, Reactor Inspector, Engineering Section Date
(paragraphs 1, 11, 13)

C. R. Oberg 4/10/84
C. R. Oberg, Reactor Inspector, Reactor Project Sec. A Date
(paragraphs 1, 11, 13)

Richard L. Bangart for 07/26/84
 D. M. Hunnicutt, Chief, Reactor Project Section A Date
 (paragraphs 1, 3, 9, 13)

Approved: Richard L. Bangart for 07/26/84
 D. M. Hunnicutt, Chief, Reactor Project Section A Date

Inspection Summary

Inspection Conducted November 14, 1983 through March 31, 1984 (Report 50-445/84-08)

Areas Inspected: Routine, announced inspection of licensee action on previous findings, 10 CFR Part 50.55(e) report followup, 10 CFR Part 21 followup, allegation followup, independent inspection of coatings, training of protective coatings inspectors, review of safety-related systems, inventory of audit material in custody of NRC, plant status, and plant tours.

The inspection involved 190 inspector-hours onsite by five NRC inspectors.

Results: Within the ten areas inspected, two violations (gaps on Unit 1 polar crane bracket and seismic connections exceed design requirements, paragraph 3 and failure to perform required inspections, paragraph 11) and one deviation (deviation from FSAR design requirement, paragraph 11) were identified.

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The inspection involved 44 inspector-hours onsite by two NRC inspectors.

Results: Within the seven areas inspected, no violations or deviations were identified.

DETAILS1. Persons ContactedPrincipal Licensee and Contractor Employees

- *E. R. Clements, Vice President, Nuclear Operations
- *J. C. Kuykendall, Manager, Nuclear Operations
- *J. T. Merritt, Site Project Manager
- *R. A. Jones, Manager, Plant Operations
- *T. L. Gosdin, TUGCO Public Information Coordinator
- *R. T. Jenkins, Operations Support Superintendent
- *M. McBay, Engineering Manager, TUGCO, Engineering and Construction (E&C)
- *R. P. Baker, Staff Engineering Manager, TUGCO E&C
- *R. G. Tolson, TUGCO Site QA Supervisor
 - S. Spencer, QA Auditor (Corporate Office)
 - J. Marshall, Licensing Supervisor (Corporate Office)
- *D. E. Deviney, Operations QA Supervisor
- *T. P. Miller, Lead Startup Engineer, TUGCO
- *C. H. Welch, QA Services Supervisor
- *H. A. Lancaster, Startup QA Specialist
- *J. C. Smith, Operations QA
- *M. Riggs, Operations Support Engineer
 - B. C. Scott, QA Supervisor
 - A. Vega, QA Services Supervisor
 - R. Kissenger, Project Civil Engineer
 - J. D. Hicks, Assistant Site QA Supervisor
 - R. L. Moller, Westinghouse Site Project Manager
 - G. Purdy, Site QA Manager Brown & Root (B&R)
 - H. Hutchinson, Project Control Manager
 - G. L. Morris, Site Mech. Level III ASME Quality Engr., B&R

The NRC inspectors also contacted other plant personnel including members of the construction, operations, technical, quality assurance, and administrative staffs.

*Denotes those attending one or more exit interviews.

2. Plant Status

Construction of Unit 1 is approximately 97% complete with fuel loading scheduled for July 1984. There is presently a great deal of effort to complete areas and then turn the completed areas over to Texas Utilities Generating Company (TUGCO) operations. The turnover process requires two phases. The first phase takes place when construction completes a specified area and turns that area over to the startup group. The second phase of the turnover process is when TUGCO operations completes final acceptance of the area from the startup group. The licensee has identified 422 distinct areas which are to be turned over. As of March 9, 1984, 158 of these 422 areas had been turned

over from construction to the startup group. TUGCO operations has made final acceptance of 66 of the 422 areas. The 422 distinct areas identified by the licensee to be turned over vary greatly in size and complexity; therefore, the number of areas turned over provides an indicator that progress is being made, but to make a determination as to the degree of progress, the size and complexity of each area must be evaluated.

Construction of Unit 2 is approximately 65% complete. Fuel loading is scheduled for January 1986.

3. Licensee Action on Previous Inspection Findings

- a. (Closed) Violation (445/82-11): Failure to Perform Inspections of Installation Activities Related to Unit 1 Containment Polar Crane.

The licensee's Nonconformance Report (NCR) M-82-00894 documents the above violation. The disposition of NCR M-82-00894 directed that the polar crane girder connection finger shims previously installed per DCA 9872 were to be removed and inspected and any deviations from the requirements of DCA 9872 were to be identified to engineering for resolution. The licensee removed and inspected all of the finger shims associated with the Unit 1 polar crane bracket and seismic connections. During this inspection, any shim that did not meet the design requirements of DCA 9872 was replaced. This included the replacement of ten finger shims that were found to have clipped fingers. Operational traveler CE-82-370-8104 was issued to accomplish and document the shim inspection and rework directed by NCR M-82-0094. Traveler CE-82-370-8104 also instructed that the new shims were to be installed per the requirements of DCA 9872.

The shim inspection and rework was inspected and documented by quality control (QC) inspectors on NCR M-82-00894. This NCR was closed on January 24, 1983. The quality control inspection of the shim rework satisfies the requirements which were previously not met and which resulted in the original violation. This item is closed. However, the NRC inspector performed a random inspection of the polar crane girder connection shims and had the following two concerns:

- (1) Design Change Authorization (DCA) 9872 required that all gaps greater than 1/16 inch be shimmed. In addition QC personnel verified that the gap for each polar crane girder connection was less than 1/16 inch and documented this on a shim documentation card which was attached to Traveler CE-82-370-8104. However, the NRC inspector observed that the following randomly selected girder connections had gaps that exceeded 1/16 inch:

<u>Girder Number</u>	<u>Connection Location on Girder (looking from inside containment)</u>	<u>Approximate Gap</u>
23	center	1/8"
23	right	1/8"
26	right	3/16"
20	center	5/32"
20	left	3/16"
19	right	3/16"
17	center	5/32"
16	right	1/8"

This is an apparent violation (445/8408-01).

- (2) DCA 9872 required that the shims be tack welded as shown on Gibbs and Hill sketch SK82032 (Sheet 3 of DCA 9872). General Note 4 of SK82032 states that shims in the seismic connection may be welded to either vertical plate; however, on the seismic connections for girders 18, 22, 26, and 27 the tack welds which welded the shims together also tack welded the vertical plates together. This concern was discussed with licensee personnel. This is an unresolved item (445/8408-04).

b. (Closed) Severity Level IV Violation 445/8323-02: Instructions

The five jam nuts identified as being loose were reworked and verified by QC to be "snug tight." The inspection checklist of procedure CP-QAP-12.1 was revised so that jam nut tightness is verified.

c. (Closed) Unresolved Item 446/8309-01: NDE Level III Certification

The licensee inspector's NDE Level III certification was rewritten on May 27, 1983, to show that his certification was based, in part, on successful completion of examinations.

4. 10 CFR Part 50.55(e) Report Followup Inspection

The RRI (Operations) conducted a review of all reports made by the licensee pursuant to 10 CFR 50.55(e) since the CPSES construction permit was issued on December 19, 1974. During the period between December 19, 1974, and February 17, 1984 NRC reading files showed that 103 reports were transmitted to the Commission. TUGCO logs were in agreement. Of these, subsequent correspondence indicated that the licensee, upon further investigation, concluded that 57 reports did not meet the reporting criteria of 10 CFR 50.55(e) and thus were "not reportable."

The balance of 46 10 CFR 50.55(e) reports appear to be reportable except for three recent items, which were under investigation at the time of the inspection.

The RRI noted that 26 10 CFR 50.55(e) reports had been closed by the licensee. However, the status report published weekly by the site QA secretary indicated that they were awaiting NRC action for closure. The licensee's representatives stated that the item would be closed and removed from the weekly report as soon as the SRR (Construction) reviewed the records submitted to him and specifically addressed each in an inspection report as satisfactorily closed. At the exit interview of March 2, 1984, the RRI pointed out that this is not a requirement of the NRC and as such the NRC should be removed from the status report as actionee for closure of each item. The records submitted to the SRR (Construction) should be retrieved and placed in the appropriate licensee-controlled file, subject to future NRC audits. During the exit interview the licensee stated that this would be done.

The RRI reviewed eight of the 10 CFR 50.55(e) report folders in detail. The licensee refers to them as "Significant Deficiency Analysis Reports" (SDARs). Attributes evaluated included followup correspondence, depth of investigation, and compliance with reporting requirements. The eight folders were numbered SDAR 81-07, 82-03, 82-07, 82-09, 82-13, 82-14, 83-03, and 83-20. Half were ruled "non-reportable" by the licensee, and half were "reportable." The RRI did not observe any deficiencies in any of the folders.

In addition to reviewing specific SDAR records, the RRI reviewed the following applicable procedures:

CP-EP-16.3	"Control of Reportable Deficiencies"
DQP-CS-6	"Reporting of Significant Deficiencies"
CP-CP-16.1	"Significant Construction Deficiencies"
CP-Q, -15.6	"SDAR Status Tracking"

The above procedures appear to meet the requirements of 10 CFR 50. The condition and tracking of each of the SDAR packages substantiate this. However, the RRI noted that the corporate office in Dallas, Texas, has one numbering system with their own log for SDAR's originated in the corporate office. The CPSES site QA office has another numbering system, with their own log, for SDAR's originated at the site. The corporate office tracks all SDAR's, but CPSES tracks only the SDAR's originated at the site. At the exit interview of March 2, 1984, the RRI commented that Site status report addressees could be led into believing the site tracking system is complete when such is not necessarily the case.

No violations or deviations were identified.

5. Followup of Part 21 Report

On February 3, 1984, a licensee audit of one of its suppliers, Gulfalloy, Inc., identified an apparent falsification of inspector's eye examination records. This apparent falsification of records was reported to the NRC by Gulfalloy, Inc., in accordance with the reporting requirements of 10 CFR Part 21. The falsification of eye exam records occurred when the eye exam records from an eye exam given to three inspectors on November 13, 1980, were photocopied and the date changed so that it would appear that the three inspectors had also received eye exams on October 22, 1981. Additional eye exams were given to the inspectors on September 15, 1982, and again on January 16, 1984. The Gulfalloy, Inc., employee responsible for ensuring that the inspectors received the required eye exam was also responsible for reviewing material manufacturers chemical and physical test results.

The NRC inspectors discussed this event with licensee personnel and were informed that corrective action would include a review of the records of material received from Gulfalloy, Inc. The NRC inspector will continue to monitor the licensee's corrective action.

No violations or deviations were identified.

6. Followup of Allegation

The following allegation was relayed from the NRC Region IV office to the NRC inspector for followup: "Fork lift ran into guide rods by missile shield. Rods were approximately 2½" diameter stainless steel." Representatives from the Office of Investigations interviewed the alleged in order to obtain more details regarding this allegation, but were unsuccessful in this effort.

The NRC inspector was unable to identify an event that fit all the specifics in the above allegation. As far as the NRC inspector could determine from discussions with personnel familiar with work in the reactor building, fork lifts have not been used in the reactor building. However, the following event could have been what was observed by the alleged:

On October 14, 1983, the refueling crane struck and bent a thermocouple column. This incident and subsequent corrective action were documented on Westinghouse Field Deficiency Report TBX-10285 and Brown and Root NCR M-11438. The thermocouple column that was bent is a long (approximately 17 feet) tube that provides support for incore thermocouple tubing between the upper core internals and the reactor vessel head. The lower end of the thermocouple column is attached to the upper core assembly.

The refueling crane is a bridge type crane that spans the refueling cavity. At the time the incident took place, the upper core assembly was mounted on extension legs and stored in its normal storage location in the refueling cavity. The extension legs elevated the upper end of the thermocouple column high enough to place it in the path of the refueling crane. The bent thermocouple was reported, evaluated, and straightened as reported in the two documents identified above. This allegation is closed.

No violations or deviations were identified.

7. Independent Inspection of Coatings

Brookhaven National Laboratories (BNL) has been contracted by the NRC to conduct an independent inspection of the CPSES protective coatings program and its implementation, and to investigate allegations of improprieties in the protective coatings area.

During this inspection period BNL inspectors performed three onsite inspections at CPSES.

The scope and findings of this ongoing inspection will be documented in a subsequent NRC report.

8. Training of Protective Coatings Inspectors

On March 8, 1984, the NRC inspector attended a training session given for protective coatings quality control inspectors. The purpose of the training session was to review and discuss recent changes to protective coatings Procedure QI-QP-11.4-26, "Inspection of Steel Substrate, Surface Preparation, Primer Application, Primer Repair Seal and Finish Coat Application and Repair". The lesson plan for the training session was followed and the attendees were allowed ample opportunity to discuss the topics covered.

No violations or deviations were identified.

9. Inventory of Audit Material in Custody of NRC

On March 9, 1984, the NRC inspector took custody of a box containing file folders from the site quality assurance supervisor. The box of file folders had been collected by licensee personnel during an audit of quality control inspectors conducted on March 8, 1984. An NRC representative subsequently made an inventory of the contents of this box.

10. Plant Tours

At various times during the inspection period, the NRC inspector conducted general tours of the reactor building, fuel building, safeguards building,

electrical and control building, and the turbine building. During the tours the NRC inspector observed housekeeping practices, preventive maintenance on installed equipment, and ongoing construction work.

No violations or deviations were identified.

11. Review of Safety-Related Systems (Unit 1)

a. Platforms Inside Containment

On December 14, 1983, the NRC inspector observed loose bolted connections on platform OP-11 in the pressurizer compartment. Platform OP-11 supports safety-related instrument tubing for two channels of pressurizer level on the under side of the platform. A review of the design documentation including Gibbs & Hill Drawing 2323-S1-0556, Revision 4, DCA 9764, Revision 3, and DCA 1090 indicated that this platform was originally designed as nonsafety-related. It was upgraded to Seismic Category II with the particular beams in question being Seismic Category I as they were supporting safety-related instrument tubing for two channels of pressurizer level. DCA 1090 required that the bolts be "hand tight only" to allow for lateral expansion of the platform, but it did not address any locking device or thread upset to prevent nut backoff. DCA 9764 upgraded the platform to Category I and changeout of material but did not change the connection requirements specified in DCA 1090. Subsequent to identification of this problem by the NRC inspector, a DCA was initiated requiring the use of jam nuts or upset threads to correct this problem with the platforms shown on G&H Drawing 2323-S1-0556. The NRC inspector advised the licensee that DCA 1090 affected more than one drawing and that engineering would have to look at all similar connections for general application and corrective action.

This is a deviation (445/8408-03).

b. Main Coolant Loop Restraints

During an inspection inside containment, Unit 1, the crossover leg restraints of main coolant loop No. 1 were examined for conformance to applicable drawings for materials, construction, and installation. Materials and welding were found to be as specified on the drawings.

There are two similar restraints on each main coolant loop made of 1½ inch ASTM A36 carbon steel. The restraints were manufactured by AFCO Steel Corporation in accordance with G&H 0550,

Revision 4. The restraints are massive, approximately 11 feet long, 3 feet wide and 5½ feet tall. Each restraint is fastened to the base mat by 16 prepositioned 2½ inch diameter anchor bolts as specified on G&H drawing 2323-S1-0551, Detail B.

Drawing S1-0550 required that each anchor bolt be pretensioned to "90 plus or minus 10 kips" and utilize a washer, two regular nuts and a jam nut made of ASTM A 540 material. The bottom nut and the washer required a tack weld as noted in the drawing. The tack welds were not found on any of the anchor bolts inspected. In addition, no record of a QC installation inspection of the restraints for loop No. 1 or any other loop of Unit 1 could be found. Thus, pretensioning of the anchor bolts could not be confirmed.

The crossover leg restraints are major components of the main coolant piping seismic restraint and support system. Appendix B of 10 CFR 50, Criterion X, requires that inspections of activities affecting quality shall be established and performed to verify conformance with documented instructions, procedures, and drawings for accomplishing the activity.

TUEC QA Plan, Section 10.0 requires that planned written inspection procedures be used. No requirement for inspection of the crossover leg restraints had been issued. This is also contrary to 10 CFR 50, Appendix B, Criterion X.

This is a violation (445/8408-02).

12. Unresolved Items

Unresolved items are matters about which more information is required in order to determine whether they are acceptable items, violations or deviations. One unresolved item related to polar crane shims (Unresolved Item 8408-04) is discussed in paragraph 3.

13. Exit Interviews

The NRC inspectors met with members of the TUEC staff (denoted in paragraph 1) at various times during the course of the inspection. The scope and findings of the inspection were discussed.