

U. S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

REGION IV

Report No. 50-445/80-11; 50-446/80-11

Docket No. 50-445; 50-446

Category A2

Licensee: Texas Utilities Generating Company  
2001 Bryan Tower  
Dallas, Texas 75201

Facility Name: Comanche Peak, Units 1 and 2

Inspection at: Comanche Peak Steam Electric Station, Green Rose, Texas

Inspection conducted: April and May 1980

Inspector: *W. A. Crossman* 6/16/80  
*for* R. G. Taylor, Resident Reactor Inspector Date  
Projects Section

Approved: *W. A. Crossman* 6/16/80  
W. A. Crossman, Chief, Projects Section Date

Inspection Summary:

Inspection During April and May 1980 (Report 50-445/80-11; 50-446/80-11)

Areas Inspected: Routine, announced inspection by the Resident Reactor Inspector (RRI) including follow up to previous inspection findings; general site tours; safety-related pipe and equipment installations; concrete repair activities; electrical installation activities; and protection of major components. The inspection involved one hundred fifty-five inspector-hours by one NRC inspector.

Results: Of the seven areas inspected, no items of noncompliance were identified in six areas. One item of noncompliance was identified in one area (infraction - failure to follow piping installation procedures - paragraphs 2 and 7).

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## DETAILS

### 1. Persons Contacted

#### Principal Licensee Employees

- \*J. B. George, TUSI, Project General Manager
- \*J. T. Merritt, TUSI, Construction and Engineering Manager
- \*D. N. Chapman, TUGCO, Quality Assurance Manager
- \*R. G. Tolson, TUGCO, Site Quality Assurance Supervisor

The RRI also interviewed other licensee and Brown & Root employees during the inspection period including both craft labor and QA/QC personnel.

\*Denotes those persons with whom the RRI held on-site management meetings during the inspection period.

### 2. Action on Previous Inspection Findings

(Closed) Infraction (50-445/79-18): Failure to Control Inspection Stamps. As noted in paragraph 2 of Inspection Report 50-445/79-27; 50-446/79-26, the use of numbered inspection stamps has been discontinued and the implementing procedure cancelled. The licensee's Site Surveillance Group interviewed all QC personnel to whom such stamps had been issued and who had failed to return them when the cancellation took place to ascertain the reason for the nonreturn and approximately when the stamp was lost or misplaced. Personnel no longer in QC by reason of termination were not interviewed. The dates of loss and/or termination were then used as the basis for an extensive QA records search to determine if the missing stamps had been improperly used. The records search failed to reveal any such improper use and the licensee concluded that the loss of the stamps was attributed to personnel carelessness rather than any overt act.

The RRI had no further questions on this matter.

(Closed) Unresolved Item (50-445/80-01; 50-446/80-01): Class 1 to Class 2 Transition Orifices. The licensee has issued Component Modification Cards 33001 and 33002 which require the installation of the required transition orifices in the manner originally called for in the design drawings at a location approximately six inches from the improperly sized orifices. The improperly sized orifices will be plugged and seal welded.

The RRI had no further questions on this matter but will follow the implementation of the above Component Modification Cards during routine inspections.

(Closed) Infraction (50-445/80-01; 50-446/80-01): Failure to Provide Instructions and Procedures Appropriate to the Circumstances. The licensee informed RIV, by letter dated February 19, 1980, that their analysis of

the as-built mounting of the battery chargers indicated that the mounting provided adequate strength to satisfy seismic requirements. The licensee also stated that engineering procedures were being revised to require an Architect/Engineer review of equipment mounting details in addition to that already required by the equipment vendor. The RRI has verified that the procedure has been revised and implemented.

The RRI had no further questions on this matter.

(Closed) Deficiency (50-445/80-08; 50-446/80-08): Failure to Report a Significant Construction Deficiency. The licensee informed RIV, by letter dated April 21, 1980, that a review of the reporting requirements of 10 CFR 50.55(e) had been accomplished and that a meeting in the RIV office, as documented by Inspection Report 50-445/80-12; 50-446/80-12, had rendered further clarification of the requirements. The licensee stated that necessary instructions had been given to appropriate personnel in the matter. The RRI has interviewed these personnel and is satisfied that they now understand and will implement the requirements fully. For further information relative to the "honeycomb" condition referred to in the original finding, see paragraph 4 of this report.

This item is considered closed.

(Closed) Infraction (50-445/80-11; 50-446/80-11): Failure to Follow Piping Installation Procedures. This infraction, which is discussed in paragraph 7 of this report, was forwarded by RIV letter dated April 9, 1980. The licensee reported to RIV, by letter dated May 5, 1980, that an analysis of the reported situation showed that no excessive strain had been placed on the pump nozzle involved. The RRI reviewed these calculations with the NSSS supplier and was satisfied that no damage had been incurred. The licensee also committed to additional inspection for like items which was accomplished and the results documented. Other situations were found of a like nature and fortunately no harm to equipment was involved. The licensee stated that piping installation procedures have been revised to make it clear to the craft labor force that piping connections to equipment are not to be made until the piping is supported properly with hangers rather than by simple cribbing.

The RRI observed, during tours of the facility, that the revised procedures had been implemented and had no further questions.

(Closed) Infraction (50-445/80-08; 50-446/80-08): Failure to Follow Procedures for Reporting and Repair of Damaged Electrical Cable. The licensee informed RIV, by letter dated May 14, 1980, that a new cable would be pulled through the buried bus duct to replace the damaged cable. In addition, new cables were also pulled to replace several other cables in the duct that were damaged in the search for the cable originally reported. The licensee also stated, in the referenced letter, that Management/Supervisory Seminars had been held to emphasize the need to follow all project procedures. The RRI reviewed documentation indicating that eighty-two persons, including

electrical department superintendents, general foremen, and foremen, attended one of two such seminars. Interviews with two electrical crew foremen indicate that they are aware of the procedural requirements.

The RRI had no further questions.

### 3. Site Tours

The RRI toured the safety-related plant areas several times weekly during the inspection period to observe the general progress of construction of the practices involved. Five of the tours were accomplished during portions of the second shift. Since the principal effort of the second shift is the installation of electrical cables, primary emphasis was placed on this activity.

No items of noncompliance or deviations were identified.

### 4. Concrete Repair Activities

The RRI observed substantial portions of the activities involved in the removal of the defective concrete in the "honeycomb" areas of the Unit 2 Reactor Containment Building internal walls as discussed in Inspection Reports 50-445/80-01; 50-446/80-01 and 50-445/80-08; 50-446/80-08.

The RRI examined a number of the cavities after removal of the "honeycomb," after application of concrete bonding agents, and again after the repair formwork was in place for the concrete pour back. In one area, the sleeve through the wall for the reactor coolant pipe had to be partially removed to gain access to the defective concrete. The RRI observed portions of the weld repair to the sleeve to re-establish its original configuration. The welding was accomplished in accordance with the engineer's instructions by qualified welders utilizing qualified weld procedures. As of the end of the inspection period, the entire repair effort was essentially complete and appeared to have been done in a sound manner in accordance with recognized concrete repair practices.

The licensee officially informed RIV of the above matter as required by 10 CFR 50.55(e) in a letter dated April 21, 1980. The report outlines the engineering evaluations performed, the safety impact had the defects gone unrecognized and/or unrepaired, and the repair methods to be utilized.

No items of noncompliance or deviations were identified.

### 5. Major Component Installation Activities

During the inspection period, the RRI observed the efforts involved in installing the last two steam generators and the first two Reactor Coolant pumps in the Unit 2 Reactor Containment Building. The RRI observed the

initial preparation of the steam generators for hoisting into the building, the actual hoisting and movement, and finally the setting and alignment of the units on their support columns. Each step was observed to be in accordance with Operation Travelers RI80-369-3400 and ME80-2005-5500 governing the work of the riggers and millwrights, respectively. The RRI also reviewed the steps indicated by the two Operation Travelers with the NSSS supplier representatives on site and verified that the steps utilized were in consonance with the supplier's written recommendations. The RRI reviewed data developed by the site field engineers (surveyors) which showed that the generators are well within the established vertical requirements of the vendor and that each of the four support columns are carrying approximately equal load. In regard to the Reactor Coolant pump installation, the RRI observed the work involved in setting the pumps on their columns and establishing the pumps into an essentially level position.

The RRI also observed the preliminary installation of two of the Reactor Coolant pipe legs through the sleeves leading to the Reactor Pressure Vessel. These pipe sections were carefully handled and placed into position in accordance with good practice.

No items of noncompliance or deviations were identified.

6. Reactor Coolant Pressure Boundary Piping Installation

The RRI made limited observations of piping component handling in the Reactor Coolant Pressure Boundary area during the period. The RRI observed two welds in process as follows:

Weld Number:	FW-3A	FW-20
Isometric:	RC-1-RB-026	SI-1-RB-037
Line Identification:	14-RC-1-135-2501R1	10-RC-1-021-2501R1
Welder Identification:	AWT and BMK	BAG
Weld Procedure:	99025 (Machine GTAW)	88025 (Manual GTAW)
Filler Metal Identification:	463870	762550

Subsequent to the observation of welding, the RRI verified that the welders, weld procedures and weld filler metals were each properly qualified in accordance with the ASME Code, Section III or IX as appropriate. In addition, the RRI also examined the radiographs taken of the welder qualification test coupons for welders BAG, BLU, AXC, BPA and AED. These

radiographs, which are an examination alternative of ASME, Section IX (the other alternative is prescribed bend tests), indicated a sensitivity technically acceptable per Section V of the Code. The RRI discussed the radiographs with the supervising radiographer who stated that the fuzziness of the radiographs was caused by energy scatter from the source (Iridium 192). Since the radiographs met all technical requirements of the Code, he felt there was no problem. The RRI agreed that the Code had been technically satisfied, but at a marginal or minimum level and the radiographs could be substantially improved by a better technique. The RRI will pursue this matter during future inspections. The above discussed radiographs indicated that each welder had accomplished a weld or welds that satisfied the Code requirements and were, thus, fully qualified to perform production welding.

The RRI also examined radiographs of the following reactor coolant boundary (Class 1) welds:

<u>Weld Identification</u>	<u>Isometric</u>	<u>Line Number</u>
W-6	SI-2-RB-042	2-SI-2-086-2501R1
FW-12	SI-1-RB-21	3-SI-1-033-2501R1
W-14	SI-2-RB-042	2-SI-2-086-2501R1
W-14	SI-1-RB-020	1.5-SI-1-020-2501R1
W-12	SI-2-RB-042	2-SI-2-086-2501R1
W-6	CS-1-RB-031B	2-CS-1-105-2501R1
FW-1-1	RC-1-RB-15	3-RC-1-111-2501R1
FW-10-2	RC-1-RB-15	3-RC-1-111-2501R1
FW-38-1	RC-1-RB-15	3-RC-1-146-2501R1
W-10	CS-1-RB-031B	1.5-CS-1-249-2501R1
W-8	CS-1-RB-031B	1.5-CS-1-105-2501R1
W-9	CS-1-RB-031B	1.5-CS-1-105-2501R1
W-7	CS-1-RB-031B	1.5-CS-1-105-2501R1
W-2	CS-2-RB-074	2-CS-2-112-2501R1
W-5	CS-1-RB-031B	2-CS-1-105-2501R1

W-3	CS-1-RB-028	2-CS-1-112-2501R1
W-18	RC-1-RB-15	3-RC-1-111-2501R1
FW-42	RC-1-RB-15	3-RC-1-146-2501R1
FW-6	RC-1-RB-08	3-RC-1-052-2501R1
W-6	RC-1-RB-06	6-RC-1-70-2501R1
FW-3	RC-1-RB-017	4-RC-1-075-2501R1
FW-38-2	RC-1-RB-05	3-RC-1-146-2501R1
FW-2	RC-1-RB-017	4-RC-1-075-2501R1
W-5	SI-2-RB-042	2-RC-2-086-2501R1
W-35	SI-1-RB-015	2-SI-1-086-2501R1
FW-11	SI-1-RB-021	3-SI-1-033-2501R1
FW-1	RC-1-RB-06	12-RC-1-069-2501R1
FW-5A	RH-1-RB-02	12-RH-1-022-2501R1

No items of noncompliance or deviations were identified.

7. Other Safety-Related Piping Installation Activities

The RRI observed welder AHI during a period when the welder was working on joint FW-5 as identified on isometric CT-1-RB-17 in line 10-CT-1-027-301R2. The welder was working to Weld Procedure 88021 using filler metal Heat Number 463638. The qualification of the procedure and this heat of filler metal have been verified several times during previous inspection. Review of the welder qualification records for AHI indicate that he has been properly qualified in accordance with ASME, Section IX.

The RRI also examined the licensee actions in regard to implementation of his commitment to radiograph and repair those field welds in the Safety Class 3 Component Cooling Water and Auxiliary Feedwater Systems that do not require radiographs under the Code. (For more information regarding this commitment, see Inspection Reports 50-445/79-12 and 50-445/79-17.) The personnel managing the program indicated that approximately 56% of the 1842 welds involved have, to date, been radiographed and that about 37% of those requiring repair have been repaired. The RRI randomly selected the following radiographs for review:

<u>Weld Identification</u>	<u>Isometric</u>	<u>Line Number</u>
FW-10	AF-1-SB-23	4-AF-1-102-152-3
FW-25	AF-1-YD-05	3-AF-1-86-152-3
FW-13	CC-1-RB-042	3-CC-1-232-152-3
FW-10A	CC-1-RB-58A	3-CC-1-234-152-3
FW-30	CC-1-RB-58A	3-CC-1-234-152-3
FW-1	CC-2-AB-045	3-CC-2-118-152-3
FW-22-R1	AF-1-SB-10	6-AF-1-33-152-3
FW-28-R1	AF-1-SB-15	4-AF-1-102-152-3
FW-3-R1	AF-1-SB-72	3-AF-1-72-152-3
FW-24-R1	CC-1-RB-041	3-CC-1-232-152-3

The RRI made numerous observations of the general pipe and component handling operations in both Units 1 and 2 during the inspection period and found that good practices were being followed as outlined in the General Piping Procedure CPM-6.9. In one instance however, the RRI observed a situation that was of concern in that possible major safety component damage might have occurred which could easily have gone undetected. The RRI found that a pipe assembly, consisting of several feet of six inch diameter pipe, was being entirely suspended by attachment to the suction nozzle flange of the Unit 2 Train A Safety Injection pump TCX-SIAPSI-01. Further investigation developed that the pipe assembly would place a torque load on the nozzle of between 1500 and 2000 foot-pounds. The RRI found that CPM 6.9 did not provide instructions on this matter to the labor force, although the project Mechanical Erection Specification (MS-100) specifically prohibited such practices. The RRI notified the licensee of the situation which was in turn followed up with a Notice of Violation dated April 9, 1980.

The licensee responded to the initial notification by having the other installed pumps and valves in Unit 2 checked for like situations. A very limited number of other comparable situations were identified during this inspection.

The RRI identified situation and others identified by the licensee were detailed on Nonconformance Reports which were submitted to the component

vendor, Westinghouse, for analysis of possible damage to the components. The analysis indicated that no damage was likely to have occurred due to the static loading on the nozzles, although had the pipe been of a heavier schedule or longer in length, such damage would have occurred. The Westinghouse analysis was reviewed by the RRI who had no question of its accuracy.

The licensee's investigation of the circumstances surrounding the incident indicated that the pipefitters had the pipe supported by temporary wooden blocks or jack stands when they left the work area. These workers were subsequently reassigned to other work and did not return to the area. In the meantime, it appears that a group of painters were assigned to paint the floors in the area and removed the temporary shoring under the piping leaving it suspended from the nozzles.

The labor force was notified that this practice must cease and the licensee also revised CPM 6.9 to provide specific instructions in the matter. All of these actions were consummated during the period covered by this report, and as noted in paragraph 2, this item of noncompliance is considered to have been satisfactorily closed.

Except as noted above, no items of noncompliance or deviation were identified.

#### 8. Electrical Installation Activities

The RRI made a number of observations of electrical cable installations during the inspection period. The primary inspection effort was directed toward observing the activities of the various cable pulling crews and toward this end at least five crews were checked. During most of the period there were seven active crews working safety-related cable. Each of the crews observed appeared to be knowledgeable of the prescribed methods of pulling cable and of the limitations imposed by site procedures and good practice. The RRI also examined most of the Main Control Room cabinets and the termination cabinets in the Cable Spread Room of Unit 1 relative to the quality of the workmanship displayed in termination of the cables. No instances were found in which the termination was less than satisfactory as evidenced by the application of the correct size wire lug that was properly crimped and tightly installed on the terminal boards. The RRI also examined a number of terminations for correct connection on the terminals as indicated on the electrical design drawings with no errors being detected. This effort was primarily directed toward the main 6.9 KV switchgear in Safety Train A.

No items of noncompliance or deviations were identified.

#### 9. Protection of Major Safety-Related Equipment

During the course of general plant tours, the RRI noted that the major plant components continue to be well cared for as evidenced by space

heaters being energized and where appropriate, because of on-going work, the equipment is adequately covered. The Unit 1 and 2 Reactor Vessels were noted to be well protected even though extensive civil construction work was in progress in the immediate vicinity. The Unit 1 Reactor Vessel internals were noted to be in their enclosures and apparently adequately protected as was the Unit 1 Vessel head with the installed Control Rod Drive Mechanisms.

No items of noncompliance or deviations were identified.

10. Management Interviews

The RRI met with one or more of the persons identified in paragraph 1 on April 2, 3, 9, 10, 15, 18, and May 13 and 29, 1980, to discuss inspection findings and to discuss licensee actions and positions.