

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

REGION IV

Report No. 50-445/80-03; 50-446/80-03

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 & 2

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

Inspection conducted: February 1980

Inspector:

for W. G. Taylor
R. G. Taylor, Resident Reactor Inspector
Projects Section

3/20/80
Date

Approved:

W. A. Crossman
W. A. Crossman, Chief, Projects Section

3/20/80
Date

Inspection Summary:

Inspection During February 1980 (Report 50-445/80-03; 50-446/80-03)

Areas Inspected: Routine, announced inspection by the Resident Reactor Inspector (RRI) including follow up to previous inspection findings and licensee identified findings: safety-related piping installation and welding; storage and maintenance of major components; and electrical cable installations. The inspection involved ninety inspector-hours by one NRC inspector.

Results: Of the five major areas inspected, no items of noncompliance or deviations were identified in four. One item of noncompliance was identified in the area of electrical cable installation (infraction - failure to follow procedures for cable installation - paragraph 6).

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 several randomly selected craft and Quality Control personnel that were interviewed in a semi-formal, private atmosphere.

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

2. Action on Previous Inspection Findings

(Open) Infraction (50-445/79-27; 50-446/79-26) Failure to Follow Procedures for Hoisting Safety Related Components. The licensee notified the NRC, by a letter dated December 18, 1979, that the valve indicated by the RRI as being hoisted in an uncontrolled manner was not damaged nor was the structure used as a hoisting point. The licensee's letter also states that certain procedures would be reviewed and revised to assure consistency with rigging and lifting requirements. The procedures, as revised, appear to provide even less control than the original procedures in that all decisions relative to how to rig and lift, except those defined as "critical" and apply to only a few major components, are left to the discretion of an engineer. No mechanism is apparent to the RRI as to how the engineer is called in to examine any given situation nor is there any procedural assurance that a given manufacturer's instructions will be reviewed for such special requirements as may be pertinent.

This matter will remain open pending satisfactory resolution.

(Closed) Unresolved Item (50-445/79-28; 50-446/79-27) Licensee Review of In-Service Inspection Data. The licensee has augmented the Comanche Peak Quality Assurance Plan as of February 18, 1980, to specifically provide instructions and delegations to provide assurance that the licensee will be properly involved in the in-service inspection program and will review the results of the program as they develop.

The RRI had no further questions on this matter.

3. Site Tours

The RRI toured the safety-related plant areas several times weekly during the inspection period to observe the progress of construction and the general practices involved. Two of the tours were conducted during portions of the construction second shift, with a primary emphasis on electrical cable pulling activities.

No items of noncompliance or deviations were identified during the tours.

4. Safety-Related Components Installation

a. Service Water Pumps

The licensee informed the RRI, on January 17, 1980, that the vendor of the safety-related Service Water Pumps had asked that they stop all further work on two of the four pumps due to the discovery of possible problems with the pumps that might have occurred during manufacturing. The vendor, Haywood-Tyler Pump Co., indicated that a carbon steel split coupling ring may have been supplied rather than the required monel ring. It was also indicated that certain drilled lubrication holes in the pump shaft may have not been drilled. On February 19, 1980, the licensee informed the RRI that the vendor's representatives had visited the site and had examined the pumps in question. The split coupling rings were found to be monel, however, the rings were not properly identified and were replaced as a result. The identified lubrication holes were confirmed to be missing and were drilled as required under the vendor's supervision. The vendor stated that the missing drilled holes would have had no adverse effect on either pump performance or life as installed and used at this site. Both the holes and the split coupling ring of monel are furnished as standard items to allow the pumps to be used under much more adverse conditions than will be seen at this power station. After review of the vendor's documentation, the RRI had no further questions.

b. Aluminium-Bronze Discs for Service Water Valves

On February 22, 1980, the licensee informed the RRI that the Continental Division of Fisher Controls had notified the licensee of a technical nonconformance that had been identified by them in regard to nine butterfly valves for use in the safety-related Service Water System. These valves, which were certified and supplied as conforming to ASME Section III, were reported by the vendor to have not received a post-weld heat treatment as required by the Code in regard to the aluminum-bronze material used in the valve discs. The vendor stated in his letter to the licensee that he believed that the heat treatment required by the Code was for the purpose of preventing a degradation of the corrosion resistance properties through a process referred to as de-aluminumification. The vendor stated that he had prepared coupons of the material, had welded them without any post-weld heat treatment and upon examination, had found no de-aluminumification had taken place. Based upon this information, the

vendor concluded the valves would still be entirely suitable for use in the intended application at this plant but none-the-less offered to correct the condition if the licensee desired. The licensee determined, based upon the letter from the vendor and a Service Water System analysis, that the matter would have no safety significance and therefore was not reportable under 10 CFR 50.55(e) and so informed the RRI. The RRI reviewed the data and had no further questions at that time.

However, the RRI was not satisfied that the vendor's conclusion was entirely correct as to the purpose of the post-weld heat treatment, and continued to research the matter. This research developed that the purpose of the heat treatment, as specified in the Code, is to solution anneal the weld heat affected zone such as to relieve residual stresses created by the precipitation hardening of the material during welding. The data reviewed indicated that failure to perform the heat treatment could result in stress corrosion cracking under unspecified corrosive environments. Since the water in the Service Water System has a potential for being mildly brackish and therefore corrosive, the RRI considered that a potential for catastrophic failure of the disc does exist and that in the event of such failure, the Service Water System might not be able to perform its safety function. The RRI reviewed his findings with the licensee essentially concurrent with preparation period for the report. Therefore, this matter will be considered an unresolved item until such time as the licensee has had an opportunity to formulate his course of action. In conjunction with this same matter, the RRI noted that the FSAR, in paragraph 9.2.1.7, states that the materials of fabrication are stainless steel, carbon steel or nickel plated carbon steel with no mention of aluminum bronze being used. The licensee has stated to the RRI that this is an oversight and that the FSAR discussion pertains only to the valve bodies which are of carbon steel and not to the discs which are of the aluminum-bronze material. The licensee has indicated that this matter will be clarified in an early amendment to the FSAR. This too will be considered to be an unresolved item pending revision of the FSAR and an opportunity for the NRC technical review thereof.

5. Safety-Related Piping Installations and Welding

The RRI made several observations of the general handling and installation practices of safety-related piping components including spool pieces and valves with a primary concern for those fabricated from stainless steel materials. The RRI noted that the practices observed were consistent with the project procedures and specifications which in turn are consistent with present industry practices. The RRI also observed the following welds being made in piping systems:

<u>Weld</u>	<u>Isometric</u>	<u>Line Identification</u>	<u>Welder</u>	<u>Procedure</u>
FW-7	BRP-MS-1-RB-003	32-MS-1-03-1303-2	AFK/BMK	11010
FW-8	BRP-MS-1-RB-003	32-MS-1-03-03-1303-2	Fit-up Only	
FW-8	BRP-FW-1-SB-019	18-FW-1-36-2003-2	BBI/AFT	99030

The RRI subsequently verified that each of the above welders had been qualified in accordance with the requirements of ASME Section IX for the process and procedure involved. The RRI further verified that the weld filler metals observed being used were physically identified and that this identity was consistent with that recorded on the Weld Data Card Filler Metal Log.

The RRI examined the radiographs for the following welds during the period and found each to be consistent with the requirements of the applicable ASME Code for the class of service denoted by the last number in the line identification. All radiographs displayed the sensitivity and density required by ASME Section V.

<u>Weld</u>	<u>Isometric</u>	<u>Line Identification</u>
W-27	BRP-SI-1-RB-025	1.5-SI-1-039-2501R1
W-17	BPR-CS-1-RB-003	1.5-SI-1-244-2501R1
W-2	BRP-CS-2-SB-063	3-CS-2-158-151R1
W-10	BRP-SL-2-RB-33	1.5-SI-2-026-2501R1
W-5	BRP-SI-2-RB-33	3-SI-2-303-2501R1
W-10	BRP-SI-1-RB-27	1.5-SI-1-057-2501R1
W-36	BRP-RC-1-RB-15	3-RC-1-146-2501R1
W-26	BRP-SI-1-RB-025	1.5-SI-1-039-2501R1
W-4	BRP-RC-2-RB-022	1.5-RC-2-079-2501R1
W-2A	BRP-SI-1RB-13	2-SI-2-086-2501R1
W-4	BRP-RC-2-RB-018	1.5-RC-2-020-2501R1
W-35	BRP-RC-1-RB-15	3-RC-1-146-2501R1
W-34	BRP-RC-1-RB-15	3-RC-1-146-2501R1
W-33	BRP-RC-1-RB-15	3-RC-1-146-2501R1
W-32	BRP-RC-1-RB-15	3-RC-1-146-2501R1
W-6	BRP-CS-2-RB-067	3-CS-2-235-2501R1
FW-6	BRP-CS-1-RB-026	3-CS-1-078-2501R1
W-22	BRP-SI-2-RB-060	6-SI-2-092-2501R1
FW-9	BRP-SI-1-RB-38B	10-SI-1-182-2501R1
FW-10	BRP-SI-1-RB-38B	10-SI-1-182-2501R1
FW-6	BRP-SI-1-RB-38A	10-SI-1-106-2501R1

<u>Weld</u>	<u>Isometric</u>	<u>Line Identification</u>
FW-11	BRP-SI-1-RB-38B	10-SI-1-78-2501R1
FW-6	BRP-SI-1-RB-38A	10-SI-1-106-2501R1
FW-11	BRP-SI-1-RB-38B	10-SI-1-78-2501R1
FW-6	BRP-SI-1-RB-37	10-SI-1-103-2501R1
W-2	BRP-RC-1-RB-15	6-RC-1-108-2501R1
W-12	BRP-RC-1-RB-15	6-RC-1-108-2501R1
W-37	BRP-RC-1-RB-15	3-RC-1-146-2501R1
W-3	BRP-RC-1-RB-06	6-RC-1-070-2501R1
W-5	BRP-RC-1-RB-06	6-RC-1-070-2501R1
W-12	BRP-CS-1-RB-001	2-CS-1-107-2501R1
FW-13	BRP-SI-1-RB-037	10-SI-1-179-2501R1
FW-4	BRP-SI-1-RB-038B	6-SI-1-092-2501R1
W-23	BRP-SI-2-RB-060	6-SI-2-092-2501R1
W-24	BRP-SI-2-RB-060	6-SI-2-092-2501R1
W-25	BRP-SI-2-RB-060	6-SI-2-092-2501R1
W-26	BRP-SI-2-RB-060	6-SI-2-092-2501R1
W-28-1	BRP-SI-2-RB-060	6-SI-2-092-2501R1
W-28	BRP-SI-2-RB-060	6-SI-2-092-2501R1
W-21A	BRP-CS-1-RB-001	1.5-CS-1-234-2501R1
W-14	BRP-SI-1-RB-022	1.5-SI-1-079-2501R1
FW-3	BRP-RH-1-RB-02	12-RH-1-002-2501R1
FW-14	BRP-FW-1-SB-017	18-FW-1-17-1303-2
FW-10	BRP-RH-2-SB-06	14-RH-2-008-601R2
FW-2AR2	BRP-SI-1-SB-002	10-SI-1-093-601R2

No items of noncompliance or deviations were identified.

6. Equipment Storage and Maintenance

The RRI observed that the reactor vessels for both Units one and two continue to be adequately protected in their installed locations by locked covers over top opening and by having the nozzles closed. The Unit one vessel head with the installed control rod drives is covered with heavy plastic protected from any probable damage by an additional wood covering. The Unit one reactor internals remain in the refueling pool "lay-down" areas and are apparently well protected from probable damage. The RRI was informed that the Westinghouse site personnel were dissatisfied with the storage condition of the internals due to collection of excessive debris within the enclosures. The RRI was subsequently informed by the Westinghouse personnel that prompt remedial action had been taken by the construction forces to cleanup the enclosures and that they, Westinghouse, were currently satisfied. Other major items of equipment in both Units one and two are adequately protected from damage by coverings and by energized space heaters where appropriate.

No items of noncompliance or deviations were identified.

7. Electrical Cable Installation

During an inspection on February 4, 1980, of the cable installation efforts on the craft second shift, the RRI observed what appeared to be the threaded end of a large bolt disappear up a conduit (C13G04189) that contained five or six green safety "Train B" cables. The RRI asked the electrician present what had just happened and was informed that, indeed, a bolt had just gone up the conduit. When asked the purpose of the bolt, the electrician indicated that the bolt was being used to weight the cable pulling the next cable. The electrician indicated that the pulling rope was about five feet short and rather than obtain and add the missing five feet of rope, they had simply tied a weight on to get the rope back down. Several minutes later, the bolt did reappear and was found to be a one inch "Hilti" bolt lashed to the pulling rope with plastic Ty-Wraps. Such bolts are designed to be embedded in holes drilled in concrete and therefore have no head, but rather have a flat end with a taper back into the anchoring wedge area which leaves a relatively sharp edge on the circumference of the flat end. This edge and/or the threads could possibly have damaged the already installed cables in the conduit. The RRI also observed that the electrician had not been lubricating the cable that was being pulled into the conduit nor was there a container of lubricant readily available to him. The RRI went to the other end of the conduit, about fifty feet and two floors up, and found that there was another electrician high up in cable tray obviously straining on the cable to pull it. The RRI examined the cable and found it to be a two conductor number twelve (AWG) control cable which has a recommended maximum pulling force of 104 pounds based on the manufacturer's data. The RRI could not make a firm estimate of the force being used, but felt that it might well be excessive. The purpose of the lubrication, that should have been done and is provided for in the installation procedures, is to reduce the friction between cables in the conduit when pulling additional cables and thus reduce the pulling force required.

The RRI attempted to locate the electrician crew foreman or a site Quality Control inspector only to be informed by the electrician that all of the foremen were in a meeting with their general foreman in another area of the building and that the Quality Control people had not yet been around even though the shift had been working for about one hour at the time of the observation. Several minutes later, a Quality Control inspector did appear and was shown the situation by the RRI. Work was immediately stopped. The inspector identified each of the cables in the conduit with a "hold" tag and initiated a "Nonconformance Report" (NCR) to report the situation to site engineering and management.

The RRI initiated a preliminary Notice of Violation to the licensee on February 5 which was followed up February 7 with a formal Notice. The RRI also reviewed the licensee's NCR (Number C-1971) and found that site engineering had directed the electricians to remove all of the cables in the conduit for visual examination by Quality Control which was accomplished on February 12 with no evidence that any damage had actually occurred. Subsequent observations of cable installation activities on both the day shift and second shift indicate the craft personnel and Quality Control personnel are now following the procedural requirements much more carefully, particularly in conduit type cable pulls.

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance or deviations. One such item is discussed in paragraph 4. b and is titled "Aluminum-Bronze Discs For Service Water Valves" for future discussions of the item.

9. Management Interviews

The RRI met with one or more of the persons identified in paragraph 1 of February 5, 7, 12, 13, 19, 22, 27, and 28, 1980, to discuss various inspection findings and to discuss licensee actions and positions.