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

REGION IV

Report No. 50-445/80-20; 50-446/80-20

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, Glen Rose, Texas

Inspection conducted: September 1980

Inspector: R. G. Taylor, Resident Reactor Inspector, Projects Section — Date 10/20/80

Approved: W. A. Crossman, Chief, Projects Section — Date 10/20/80

Inspection Summary:

Inspection during September 1980 (Report No. 50-445/80-20; 50-446/80-20)
Areas Inspected: Routine, announced inspection by the Resident Reactor Inspector (RRI), with limited support by two Regional IE inspectors, including general site tours; piping, electrical and instrumentation, installation activities; protection of installed and uninstalled equipment and pipe supports and restraints. The inspection involved ninety-two inspector hours by the RRI and four hours by two Regional IE inspectors.
Results: No items of noncompliance were identified in five of the areas. One item of noncompliance and a deviation (infraction - unsuitable weld surface as required by magnetic particle test procedures - paragraph 6; deviation - incorrect design of pressurizer spray system control valve piping - paragraph 5) were identified in two other areas.

DETAILS

1. Persons Contacted

Principal Licensee Employees

*R. B. Clements, TUGCO, Vice-President, Nuclear Operations
*D. N. Chapman, TUGCO, Quality Assurance Manager
*R. G. Tolson, TUGCO, Site Quality Assurance Supervisor

Other Persons

J. V. Hawkins, Brown & Root, Project Quality Assurance Manager
D. C. Frankum, Brown & Root, Construction Project Mangager

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. Site Tours

The RRI toured the safety-related plant areas several times weekly during the inspection period to observe the general progress of construction and the practices involved. Four of the tours were accomplished during portions of the second shift where the main activity continues to be installation of electrical cables and the application of protective coatings.

No items of noncompliance or deviations were identified.

3. Protection of Major Installed Equipment

The RRI observed that the Reactor Vessel Internals (core support structure) were partially installed in the Unit 1 vessel as part of the final alignment machining operation. The internals and the vessel were well covered and protected from any construction debris. The Unit 2 Reactor Vessel continued to be protected during periods when personnel had to enter the vessel for coolant pipe welding and weld inspection.

The Unit 2 internals remain in their storage enclosures near a facility warehouse. The RRI observed that randomly selected electric prime movers for pumps have their space heaters energized as have the motors associated with motor operated valves. The safety-related switchgear and motor control centers either have their space heaters energized or have large light bulbs installed to keep them dry. The control room panels and boards were maintained in an air-conditioned environment during the period to preclude heat damage to the electronic components.

No items of noncompliance or deviations were identified.

4. Storage of Uninstalled Components

The RRI toured the warehouses and outdoor laydown areas during the inspection period. All components observed, including a substantial number of prefabricated pipe spools and cable reels, appeared to be well cared for in accordance with normal industry practice and the recommendations of the various suppliers of major components, with one exception. The RRI noted in touring an outdoor storage area what appeared to be spent fuel storage racks identified by an attached sign as "NON-Q" (not within the scope of the licensee's quality assurance program). Also the lay-down positions of some of the rack modules were such that water might collect in some areas in the event of rain.

The RRI reviewed the files of the on-site vendor coordination and found that the racks had been furnished by Westinghouse as Seismic I components as indicated by the FSAR Section 17.2 and that there was a Westinghouse quality release document on file. The RRI initiated a discussion with licensee QA personnel and was informed that they were aware of the problem and that a Nonconformance Report had been initiated but not yet finalized.

This situation will be considered to be an unresolved item pending completion of the Nonconformance Report and whatever actions are taken to rectify the matter.

5. Safety-Related Piping Installation and Welding

The RRI made several general observations of the handling practices for piping components during the inspection period both in the on-site fabrication shop and within the main plant buildings. The practices were found to be consistent with the construction practices outlined in Construction Procedure 35-1195-CPM 6.9 which in turn are consistent with the Project Specification MS-100 and good industry practice.

The RRI observed, during a portion of one of the tours, that the installation and welding of a portion of the pressurizer spray piping had evolved to a point where the final layout configuration of this subsystem of the reactor coolant system was evident. The RRI obtained the pertinent isometric drawings for the subsystem and verified that the piping was installed essentially as shown. The design layout, however, was found not to match the commitments of Section 5.1 of the FSAR in that Note 2 of Figure 5.1-1 had not been achieved. This note requires that pressurizer spray control valves be located a minimum of ten feet below the top of the pressurizer while the isometric drawings indicate that the two valves are actually located two feet eleven inches and one foot four inches, respectively above the top of the pressurizer.

This is considered to be a deviation to the FSAR commitments.

The RRI observed the following welds being made during the inspection period:

Weld No.	Isometric	Filler Ht.	Welder(s)	Procedure	Process
FW-4	AF-2-SB-003	87401	BPK	11021	GTAW
W-7-12	SW-1-SB-003	762550	BWP	88025	GTAW
FW-5	RC-2-520-001	434788	ARN-BRS-AFP	99028	GTAW (Machine)
FW-1	RH-1-RB-001	746100	AEN	88021	GTAW

The RRI verified that the weld filler metals being utilized in the above welds were certified by the suppliers via Certified Material Test Reports as meeting the applicable requirements of ASME Section II. The welders and weld procedures noted were verified to have been properly qualified in accordance with ASME Section IX.

The RRI also examined the radiographs of the following welds for compliance to the requirements of ASME Section III for weld quality and Section V for the quality of the radiographs themselves.

Weld No.	Isometric	Line No.
W-16	RC-2-RB-073	4-RC-2-091-2501R1
FW-16A	CS-1-RB-028	2-CS-1-112-1501R1
W-4	CS-2-RB-042	3-CS-2-235-2501R1
FW-14	SI-1-RB-017	6-SI-1-046-2501R1
FW-7A	CS-1-RB-028	2-CS-1-112-2501R1
FW-7	SI-1-RB-037	10-SI-1-179-2501R1
W-13	SI-2-RB-042	2-SI-2-036-2501R1
FW-11A	RC-1-RB-006	6-RC-1-070-2501R1
W-19	FW-2-SB-029	6-FW-2-097-1303

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

6. Piping System Supports and Restraints

The RRI initiated an inspection of a group of some one hundred piping system moment restraints that had been fabricated by Chicago Bridge & Iron Co. under Brown & Root (acting as a purchasing agent for the licensee) subcontract 35-1195-0585 and shipped to the site complete, except for sandblasting and painting.

The inspection was initiated as a result of an investigation of allegations received by Region IV as documented in Inspection Report 50-445/80-22; 50-446/80-20. The allegation essentially stated that some of the weld surfaces of the fabrications were such that a meaningful magnetic particle inspection within the requirements of ASME Section III, subsection NF could not have been done as certified to by the subcontractor.

A secondary consideration contained within the allegation, although not specifically stated, was that the Authorized Nuclear Inspector assigned to the facility was derelict in that the fabrication had been stamped and certified as having met the Code requirements. The RRI, with the assistance of two NRC inspectors specialized in weld inspections and nondestructive examination techniques, performed a magnetic particle and visual examination of selected portions of the welds of four of the fabrications using the Chicago Bridge & Iron procedures. Several of the selected areas examined revealed indications that could only be resolved by surface removal of the welds, thus substantiating the specific allegation. The secondary allegation referred to above was effectively refuted when the RRI found that the magnetic particle inspection was required by the Architect/Engineer as a supplemental addition beyond the requirements of the ASME Code. Subsection NA of the Code specifically excludes the Authorized Nuclear Inspector from taking responsibility for requirements imposed by a designer that are in excess of the Code requirements. The Code requirement was for a visual examination only of these components and each of the welds examined by the NRC personnel appeared to satisfy the Code stated acceptance criteria. The licensee was informed of the NRC findings informally on September 19, 1980, and formally by a Region IV letter dated September 24, 1980.

The licensee placed a QC hold on all of the components and has initiated a reinspection program involving an identified one hundred five units received under the order.

The RRI also became aware of another substantial group of large fabrications used as pipe whip restraints that were fabricated by Chicago Bridge & Iron under another subcontract and has initiated an inspection of these that is not complete.

7. Electrical Installation Activites

The RRI made a number of observations of electrical cable pulling operations during the period. The RRI observed the activities of each of the six cable pulling crews one or more times during the period in order to ascertain whether they were working within the parameters of the site installation procedures and good practices. The RRI alo observed the activities of the QA/QC personnel assigned to monitor the pulling crews. The RRI found both groups (craft and QA/QC) to work consistently within their respective procedures, EEI-7 and QE-QP-11.3-26. The RRI also inspected randomly selected cable tray segments in Unit 1 Safeguards area for freedom from cable damaging burrs and excessive debris. The selected segments were found to be in a satisfactory condition for cable pulling.

The RRI examined the wiring within the 118 VAC Distribution Panels shown on FSAR Figure 8.3-15 and identified as IPC1 thru IPC4. It was found that from two to four nonsafety cables entered each panel

along with several safety-related cables. Within the panel, the safety and nonsafety cables were tightly tied together which appears to be contrary to commitments of the FSAR to maintain a six inch space between safety and nonsafety cables within panels. Reference to the above FSAR Figure revealed that safety and nonsafety cables were shown and that the nonsafety cable was to be landed on circuit breakers assembled among the safety-related breakers which would make the six inch spacing nearly impossible regardless of cable routing techniques. The same Figure also shows the nonsafety cabling being powered off a safety bus with no other means than a circuit breaker of an over-current type to serve as isolation. This situation appears to violate the recommendations of Regulatory Guide 1.75. It appears that the nonsafety cables should be designated as associated safety-related cables and given segregated routing through the cable raceway system.

Since the issue is clearly shown on the referenced FSAR Figure and since the electrical/instrument wiring scheme is still under active review by NRR, this matter will be considered to be an unresolved item rather than a deviation subject to either a FSAR revision or specific approval by NRR of the as-built design.

8. Instrument Installation Activities

The RRI observed during the inspection period that various instruments are being placed on their supports throughout the Unit 1 and Common Plant areas. The instruments observed were noted to be covered with wooden boxes wired in place for the purposes of physical protection. Where the instrument impulse tubing has not been connected to the instrument, the ports have been capped to protect from the entrance of debris, all considered to be good industry practices.

The RRI continued to examine the engineer's drawing in the electrical and instrument areas to establish whether all safety-related devices and circuits have been identified and to also develop the IE inspection plan. The RRI noted the Engineer's Instrument Tabulation List does not appear to address those safety-related devices associated with the heating and ventilation controls as being within the QA/QC scope even though they are connected with safety-related cabling to safety-related control circuits. The RRI discussed this matter with cognizant engineering personnel and was informed that the instrument list was under active review and would be corrected in a timely manner.

No items of noncompliance or deviations were identified.

9. 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. Unresolved items disclosed during the inspection are discussed in paragraphs 4 and 7 and will, in future inspection reports, be referred to as:

a. 50-445/80-20; 50-446/80-20 Spent Fuel Storage Racks

b. 50-445/80-20; 50-446/80-20 Design of the AC Instrument Distribution Panels

10. Management Interviews

The RRI met with one or more of the persons identified in paragraph 1 on September 2, 3, 5, 12, 15, 19, and 24, 1980, to discuss inspection findings and the licensee's actions and positions.