APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/82-19

Docket: 50-445 Category A2

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

Facility Name: Comanche Peak, Unit 1

Inspection at: Comanche Peak Steam Electric Station

Inspection conducted: September 7-13, 1982

Inspector: _____ 9-28-82
G. P. Tomlinson, Reactor Inspector, Engineering Section Date

Reviewed: for R T Rodone 9-29-82
T. F. Westerman, Chief, Reactor Project Section A Date

Approved: D M Hunnicutt 9/28/82
D. M. Hunnicutt, Chief, Engineering Section Date

Inspection Summary

Inspection Conducted September 7-13, 1982 (Report 50-445/82-19)

Areas Inspected: Routine unannounced inspection of construction activities including a site tour, review of procedures, review of quality records, observation of work in progress and review of isometric drawings of components and piping examined during the Unit 1 preservice inspection. Also examined were the licensee actions taken in response to IE Information Notice No. 82-34, "Welds in Main Control Panels." This inspection involved 36 inspector-hours by one NRC inspector.

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

DETAILS

1. Persons Contacted

Principal Licensee Employees

R. G. Tolson, Site QA Supervisor
*C. T. Brandt, QA/QC Supervisor - Mechanical/Civil
R. A. Perry, Quality Engineer, Preservice Inspection
*R. M. Kissinger, Project Civil Engineer, TUSI

Other Personnel

D. Gulling, Preservice Inspection Coordinator, Westinghouse
N. Bollingmo, Level II Inspector, Westinghouse
J. Delbusso, Level I Inspector, Westinghouse

*Denotes those attending the exit interview on September 10, 1982.

The NRC inspector also contacted other licensee and contractor personnel during the course of the inspection.

2. Site Tour

The NRC inspector toured the Units 1 and 2 reactor building, auxiliary buildings and one warehouse to observe work in progress, inspect completed work, inspect received materials, and observe general housekeeping conditions.

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

3. Followup on Information Notice 82-34

Information Notice 82-34, dated August 20, 1982, was sent to all holders of a power reactor operating license or construction permit as early notification of a potentially significant problem. Inspections at three vendors facilities disclosed numerous welding practices not in accordance with the American Welding Society (AWS) standards and several quality assurance practices not in compliance with the vendors procedures or NRC requirements.

The NRC inspector, accompanied by a TUGCO QA/QC supervisor, toured the Unit 1 control room and performed a visual inspection of the welding inside eight of eleven installed control panels. Not all welds could be inspected as cables had been installed and the panels were energized. It was apparent that TUGCO had previously performed an examination as the QA/QC supervisor knew the location of several weld discrepant conditions and readily pointed them out to the NRC inspector.

Lack of fusion, undercutting, excessive weld spatter, apparent incomplete welding, and weld wire remmants attached to the panel welds were among the anomolies noted. Not all of these conditions were noted on each weld or each panel.

No specific action or response was required of the licensee at the time the Information Notice was issued. The licensee is, however, presently evaluating the reportability of this matter under the provisions of 10 CFR Part 50. 55(e). Until future actions are taken by the licensee, this will be considered an unresolved item.

4. Preservice Inspection - Unit 1

The NRC inspector reviewed the Westinghouse "Examination Program Plan for Comanche Peak Nuclear Power Plant Unit 1 - Preservice examination Program." Each Class 1 and Class 2 component requiring examination and the type and extent of examination to be performed was clearly specified. Exceptions to the required examinations were identified and the reason for each was referenced in the program plan. Approval signatures by the licensee and the American Nuclear Insurers, Inc., (ANII) indicated that both parties had reviewed and approved the program.

The NRC inspector reviewed the personnel qualification records for sixteen of the inspectors involved with the preservice inspection. Eight Level I and eight Level II personnel folders incicated that each inspector had sufficient experience and specialized education to satisfactorily perform the examinations required. Each inspector's file also contained records of satisfactory visual acuity and color discrimination tests within the last year. Informal interviews with four of these inspectors indicated that each has a thorough knowledge of the inspection methods used and the procedures governing the examinations.

The NRC inspector verfied that six of the ultrasonic instruments in use displayed valid and current calibration stickers. The material certifications for one batch of ultrasonic couplant (Sonotrace 40 Batch #8124); four batches of penetrant material (81L054, 81J116, 81L071, 80A032); four batches of cleaner (82A080, 81M038, 82D053, 81H066); and six batches of developer (81J098, 82A007, 81M001, 82D056, 80B014, 80E111) were reviewed and found to meet the requirements for residual sulfur and halogens.

In addition, the NRC inspector reviewed Westinghouse Procedures OPS-NSD-101, ISI-11, ISI-47, ISI-70, and ISI-206 for adequacy and for compliance to the requirements of ASME B&PV Code, Section XI. These procedures cover inservice inspection utilizing magnetic particle, liquid penetrant, and ultrasonic examinations performed on ASME Class 1 and Class 2 components. Each procedure contained the personnel and equipment requirements, calibration requirements, component surface condition, component temperature, evaluation and reporting requirements.

The NRC inspector witnessed the 0°, 45°, and 60° ultrasonic examination of one circumferential weld joint on Steam Generator No. 3. This was identified as weld No. 8 on isometric drawing TBX-2-110. The examination was performed in accordance with Procedure ISI-47 by two inspectors certified to the Level I and Level II requirements of SNT-TC-1A. The original calibration of the ultrasonic system was not obeserved, but the NRC inspector verified that postinspection amplitude calibration check was within 2 decibels of the recorded calibration and that there had been no sweep shift. The NRC inspector observed two other certified inspection personnel perform the ultrasonic examination of welded joint No. 13 as shown on isometric drawing TBX-1-4200. This is the elbow-to-piping weld on the loop 2 cold leg of the reactor coolant system (RCS) piping. Although the postexamination calibration check was within the established limits and the screen presentation was good, the two examination scans on the RCS piping could not be verified as having adequate material penetration. With the ultrasonic instrument sensitivity increased from calibration gain setting to the scan gain setting, only a sporadic back reflection could be identified. Adequate longitudinal wave penetration is normally gauged by the presence or absence of the far-surface back reflection. Additionally, the low transducer frequency and elevated amplitude, due to the increased gain for the examination, saturated the cathode ray tube (CRT) screen for approximately half of the sweep range. With this CRT saturation, no indications in the first half of the piping thickness could be identified or evaluated. Fourteen joints on each of the four RCS loops were examined utilizing a 0° longitudinal beam and a 41° refracted longitudinal beam. Conversations with several of the inspection personnel indicated that these conditions were common to all of the RCS piping welds. The four loops were fabricated from centrifugally cast stainless steel which is notoriously difficult to ultrasonically inspect due to its extremely large and irregular grain structure. Although differences of opinion as to the validity of ultrasonic inspection results have been expressed by many cognizant organizations and individuals, this remains the only inservice volumetric examination possible. Prior to this preservice ultrasonic examination, each of the piping joints was radiographically inspected and found to be acceptable. Subsequent radiography will not be possible due to the lack of access to the inside of the pipe and the wall thickness of the components. No magnetic particle (MP) or liquid penetrant (LP) examinations were observed by the NRC inspector. MP and LP had been completed on all Class 1 and Class 2 components prior to the beginning of this inspection .

The NRC inspector randomly selected a sample from the preliminary inspection results sheets for review. This sample included records for magnetic particle, liquid penetrant, and ultrasonic inspections. Each data sheet identified the component being examined, the inspection method used, identification and level of the inspection personnel, and identification of the materials or instrumentation used. For all inspections, the temperature of the item examined was recorded and for ultrasonic inspection, the temperature of the calibration standard was also recorded. Calibration data sheets were included for each examination performed and each identified

the standard used and the indication amplitudes achieved. The NRC inspector reviewed the records for approximately 200 ultrasonic inspections and approximately 400 surface examinations. The records for each were complete, thorough, and easily traceable to the individual welds inspected.

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

5. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. One unresolved item identified during this inspection is discussed in paragraph 3.

6. Exit Interview

An exit interview was conducted September 10, 1982, with those persons listed in paragraph 1. At this interview, the NRC inspector discussed the scope of this inspection and the findings.