APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/92-08
50-446/92-08

Unit 1 Operating License: NPF-87
Unit 2 Construction Permit: CPPR-127
Expiration Date: August 1, 1992

Licensee: TU Electric
Skyway Tower
400 North Olive Street
Lock Box 81
Dallas, Texas 75201

Facility Name: Comanche Peak Steam Electric Station, Units 1 and 2

Inspection At: Glen Rose, Texas

Inspection Conducted: February 2 through March 21, 1992

Inspector: D. N. Graves, Senior Resident Inspector
R. M. Latta, Resident Inspector
V. G. Gaddy, Reactor Engineer Intern
C. J. Paulk, Reactor Inspector

Reviewed by: L A Yandell
L. A. Yandell, Chief, Project Section B
Division of Reactor Projects

Apr 14 92
Date

Inspection Summary

Inspection Conducted February 2 through March 21, 1992 (Report 50-446/92-08)

Areas Inspected: Unannounced resident safety inspection of Unit 2 activities were performed including plant status, followup on corrective actions for violations, followup on licensee actions on construction deficiencies, routine plant tours, preoperational test program implementation verification, fuel receipt and storage, and corrective actions.

Results: Housekeeping was determined to be good. Access control processes were effectively implemented and combustible materials were properly segregated. The coordination and communication among the various departments associated with the performance of testing activities were excellent.

Additionally, the implementation of the completions overview function in the quality assurance organization was viewed as a strength. Weaknesses were identified in the performance of maintenance activities in that several procedural violations occurred. The limited time period between preoperational test procedure issuance and the commencement of testing activities was also

identified as a weakness. Two violations were identified (paragraphs 6.1, 6.2 and 6.3). Two violations and five significant deficiency analysis reports (SDARs) were reviewed and closed.

Inspection Conducted February 2 through March 21, 1992 (Report 50-445/92-08)

Areas Inspected: Unit 1 activities were inspected only to the extent that the two identified violations involved Unit 1 and common personnel. Additionally, one of the violations reviewed and closed included Unit 1 components.

Results: Not applicable.

DETAILS

1. PERSONS CONTACTED

TU ELECTRIC

P. H. Anderson, Unit 2 Overview
O. Bhatty, Licensing Engineer
L. M. Bradshaw, Stipulation Manager Representative
H. D. Bruner, Senior Vice President
W. J. Cahill, Jr., Group Vice President
H. M. Carmichael, Unit 2 Engineering Assurance Manager
D. Cruz, Unit 2 Code Control Program
R. J. Daly, Manager, Startup
J. H. Greene, Licensing Engineer
W. G. Guldemond, Manager, Independent Safety Engineering Group
E. P. Gully, Unit 2 Engineering Management
S. W. Harrison, Manager, Unit 2 Project Overview
T. L. Heatherly, Licensing Engineer
L. W. Hurst, Project Manager
D. C. Kross, Unit 2 Operations Manager
R. Martell, Project Overview
D. M. McAfee, Manager, Quality Assurance
T. R. Mewhinney, Mechanical Maintenance Supervisor
G. Ondriska, Startup
D. Pendleton, Unit 2 Regulatory Services Manager
S. B. Poteate, Assistant Operations Manager, Unit 2
G. R. Purdy, Site Quality Assurance Manager
C. W. Rau, Unit 2 Project Manager
A. B. Scott, Vice President, Nuclear Operations
R. L. Spence, Unit 2 Quality Control Manager
G. J. Stein, Mechanical Maintenance Manager
C. L. Terry, Chief Engineer
J. E. Thompson, Senior Engineer
R. D. Walker, Manager of Nuclear Licensing
D. L. Webster, Manager of Construction
B. W. Wieland, Manager, Maintenance
C. L. Wilson, Project Manager, Technical Support
J. E. Wren, Construction Quality Assurance Manager

CITIZENS ASSOCIATION FOR SOUND ENERGY (CASE)

O. L. Thero, Consultant

NRC

H. F. Bundy, Reactor Inspector, Division of Reactor Safety (DRS)
L. E. Ellershaw, Reactor Inspector, DRS
D. D. Chamberlain, Deputy Director, DRS
V. G. Gaddy, Reactor Engineer Intern, Division of Reactor Projects (DRP)
T. P. Gwynn, Deputy Director, DRP
T. Reis, Project Engineer, DRP

In addition to the above personnel, the inspectors held discussions with various operations, engineering, technical support, maintenance, and administrative members of the licensee's staff.

2. UNIT 2 PLANT STATUS (71302)

During this inspection period, hydrostatic tests were performed on all four steam generators and the reactor coolant system. The results of the reactor coolant system hydrostatic test inspection are documented in NRC Inspection Report 50-445/92-09; 50-446/92-09 dated April 3, 1992. The initial run of the No. 2-01 emergency diesel generator was performed. New fuel for Unit 2 began arriving on site, with 72 fuel assemblies received as of the end of this inspection period. Unit 2 completion activities remain essentially on schedule with startup activities (system flushing, prerequisite testing, and preoperational test procedure generation) falling slightly behind schedule.

3. FOLLOWUP ON CORRECTIVE ACTIONS FOR VIOLATIONS (92702)

3.1 (Closed) Violation 446/8602-21: Conduit support weld symbols

This violation concerned procedural inadequacies associated with Unit 2 electrical conduit supports. Specifically, the required reduction in support capacity associated with the use of a smaller diameter Hilti bolt in a conduit support was not properly applied. Additionally, several examples were identified involving the failure to depict intermittent fillet weld symbols on conduit support drawings.

The inspectors reviewed the licensee's response to this violation, which was contained in TU Electric's letter, TXX-6089, dated January 12, 1987. Based on this review, the inspectors determined that the licensee had effectively resolved the portion of this violation which involved the failure to properly apply a required reduction in a conduit support capacity by revising the affected drawing. This revision modified Note 4 on Drawing 2323-S2-0910, Sheet CSM-2a-II, to state, in part, ". . . 3/8" Hilti-Kwik bolt may be used for 2" diameter thru 5" diameter conduit only where specified on the isometric or individual support drawings."

In response to the second portion of this violation which involved the absence of intermittent fillet weld symbols, the licensee revised Procedure NQA 3.09-8.62, "Requirements For Non-ASME Visual Weld Inspection," to properly implement the requirements of Procedure AWS 2.4-79, "Symbols For Welding and Non-Destructive Testing." Additionally, the licensee revised Drawing 2323-S2-0910, Sheet CSM-6C-I, to more clearly depict weld locations. Concurrent with the referenced drawing revisions, the licensee performed an engineering evaluation which concluded that the subject conduit supports were in compliance with the established welding requirements.

Based on the inspectors review of the referenced procedural changes, it was determined that the licensee had implemented appropriate corrective action to address the identified violation. Therefore, this violation is closed for Unit 2.

3.2 (Closed) Violation 445/9151-01; 446/9151-01: Inadequate equipment qualification (EQ) documentation

During a previous inspection, Supplement 2 of Data Package EEQSP ES-100-03 was found to contain insufficient information to demonstrate the qualification of V-type tape insulated connections (splices).

In response to the violation, the licensee stated that the procedure that governed supplements to EQ packages did not provide any guidance with regard to voiding changed, superseded, or deleted information when new supplements were issued. Additionally, the personnel who performed the review of the design change for the splices failed to identify that the information in Supplement 3 superseded prior information.

The licensee revised the design change authorization for the splices to require the taping to comply with the appropriate requirements. Equipment Qualification Technical Procedures EEE 2.25-03, "Environmental Qualification of Electrical Equipment and Preparation of Environmental Equipment Summary Packages (EEQSPs) - Electrical [Harsh]," Revision 2; and EEE 2.25-04, "Environmental Qualification of Mechanical Equipment and Preparation of Mechanical Equipment Qualification Summary Packages (MEQSPs)," Revision 2, were issued to provide guidance to address changes to supplements when information is changed, superseded, or deleted. Additionally, training was provided for appropriate personnel for both units. This training was in the form of an EQ workshop to inform all personnel involved with EQ of the proper method of implementing changes to EQ requirements. The licensee also performed a review of all EQ packages and did not identify any other similar conditions. Based on the inspectors' reviews of the licensee's corrective actions, it was determined that appropriate measures had been implemented to address the identified deficiency. Therefore, this violation is closed for Units 1 and 2.

4. LICENSEE ACTION ON 10 CFR PART 50.55(e) DEFICIENCIES (92700)

4.1 (Closed) Construction Deficiency SDAR CP-87-51: "480V Containment Electrical Penetration Backup Protection"

This deficiency involved the lack of backup protection for the 480V containment electrical penetrations. Specifically, when the main feeder breaker to any 480V AC safeguards bus is taken out of service and the tie breaker is closed (accomplished through manual action), there was no backup protection provided to the containment penetrations located in the alternate bus being fed through the tie breaker. Regulatory Guide 1.63 requires all containment electrical penetrations be provided with redundant means of electrical protection. As previously documented in NRC Inspection Report 50-445/89-04; 50-446/89-04, this item was reviewed and closed for Unit 1.

During this inspection period, the inspectors evaluated the licensee's corrective actions which were contained in Document Change Authorization (DCA) 93443. These actions included the wiring of spare contacts on each of the backup time overcurrent auxiliary time delay relays

to their respective tie breaker trip circuits. This feature was designed to trip the tie breaker should a fault occur on any penetration circuit which is not cleared by the primary protection.

Based on the review of DCA 93443, safeguard bus drawings, and the associated work packages, the inspectors concluded that the licensee had implemented appropriate corrective action to address this deficiency. Therefore, this item is closed for Unit 2.

4.2 (Closed) Construction Deficiency SDAR CP-88-05: "Auxiliary Feedwater (AFW) Instrumentation Electrical Separation"

This deficiency resulted from the lack of isolation between the nonsafety-related AFW pump turbine speed indicators and their Class 1E 120V AC power source. As previously documented in NRC Inspection Report 50-445/89-36; 50-446/89-36, this item was reviewed and closed for Unit 1.

During this reporting period, the inspectors reviewed the licensee's corresponding corrective actions associated with Unit 2 which were delineated in TU Electric's letter, TXX-88141, dated January 25, 1988. As described in this letter, the licensee's corrective action for the referenced deficiency involved the installation of twin Class 1E fuses and fuse blocks between the speed indicator and the Class 1E power source.

The inspectors reviewed the associated work documentation, including DCAs 94038 and 94440 which installed qualified fuses between the indicators and the Class 1E power source. Based on these reviews, the inspectors determined that the licensee had implemented appropriate corrective actions to address the identified deficiency. Therefore, this construction deficiency is closed for Unit 2.

4.3 (Closed) Construction Deficiency SDAR CP-91-05: "Pipe Seam Weld Porosity"

This construction deficiency involved porosity which was discovered in the seam weld on 10-inch, Schedule 40, SA-312 stainless steel piping. Specifically, three pores were noted in the manufacturer's seam weld during interpretation of radiographs taken in a circumferential weld in the containment spray system. During this reporting period, the inspectors reviewed the licensee's corrective actions associated with this issue, which were summarized in TU Electric's letter, TXX-91449, dated December 6, 1991. These actions included the performance of an engineering evaluation to determine the impact of the porosity. This evaluation concluded that the reported condition would not have adversely impacted the containment spray system function with regard to calculated pipe stresses. Additionally, the licensee removed the rejectable porosity in the seam weld and weld repaired the pipe. The remaining piping from Heat No. 911737, which had not been installed, was scrapped.

In order to confirm the adequacy of the licensee's corrective actions associated with SDAR CP-91-05, the inspectors reviewed the following documentation:

HUB, Inc., Material Certification RR07205
Applied Technical Services, Inc., Certified Test Report RR07205
Applied Technical Services, Inc., Metallurgical Test Report RR07205
Laboratory Testing, Inc., Lab Report B-39198
TU Evaluation (TUE) Form 91-1219
Weld repair records

Based on review of the above documentation, the inspector determined that the licensee had implemented appropriate corrective actions to address the identified deficiency. Therefore, this construction deficiency is closed for Unit 2.

4 4 (Closed) Construction Deficiency SDAR CP-91-08: "Main Steam Isolation Valve Pitting"

This deficiency involved internal pitting corrosion which was identified on all four main steam isolation valves (MSIVs). Specifically, pitting corrosion was discovered on internal bore surfaces of two MSIVs during preparation for reassembly on September 16-18, 1991. Inspection of the other two MSIVs on September 30, 1991, revealed similar corrosion.

During this reporting period, the inspectors reviewed the licensee's corrective actions which were summarized in TU Electric's letter, TXX-92018, dated January 14, 1992. These actions included the machining of the bore of all four MSIVs and the installation of oversized pistons to insure a proper seal between the piston and valve body bore. Additionally, the piston disk assemblies, stems, and bonnets were returned to the vendor for reconditioning.

Based on the reviews of Traveler MW87-4284-2-3400, and TUE Forms 91-2160 and 91-2141, the inspectors concluded that the licensee had implemented appropriate corrective action to address the identified deficiency. Therefore, this deficiency is closed for Unit 2.

4.5 (Closed) Construction Deficiency SDAR CP-91-10: "Uncontrolled Material Transfer"

This issue, which was initially evaluated in NRC Inspection Report 50-445/91-66; 50-446/91-66, involved the uncontrolled transfer of material between the onsite warehouse and the investment recovery yard. Specifically, several instances involving the transfer of both safety and nonsafety-related material were identified. Of the transferred material, only 16 nuts were issued and installed in safety-related systems. The remaining material designated for transfer from the investment recovery yard was either moved to the onsite warehouse and never issued, or never moved from the investment recovery yard.

Additionally, the licensee issued TUE 91-2699, Revision 0, which instituted corrective actions that outlined procedural controls on what and how material can be transferred from the investment recovery yard to the warehouses. Specifics included the following:

- Development of guidance in Procedure MMO 8.01, "Investment Recovery," for determination of surplus material.
- Training or required reading on MMO 8.01.
- Revision of Procedure MMO 4.09, "Receipt, Storage, Issues and Shipping of Construction Materials, Parts and Components," to establish controls for investment recovery returns.
- Revision of Procedure MMO 5.03, "TSN Assignment/Transfer of Warehouse Material," to address interface requirement with MMO 4.09.
- Revision of MMO 8.01 to address interface requirement with MMO 4.09.
- Replacement of the 16 heavy hex nuts installed in safety-related systems.

Based on the review of the licensee's corrective actions, the inspectors concluded that appropriate measures had been implemented to address the identified deficiency. Therefore, this item is closed for Unit 2.

5. UNIT 2 TOURS (71302)

Routine tours of the Unit 2 facility and common areas were conducted in order to assess equipment conditions, security, and adherence to regulatory requirements.

Housekeeping, in general, was determined to be good. No deficiencies were noted with regard to the control of combustibles, including the implementation of hot work permit requirements. Equipment protection was satisfactory, with no deficiencies identified. The temporary storage, separation, and labeling of quality and nonquality-related materials was satisfactory. Temporary access controls implemented during the various secondary and primary hydrostatic tests were excellent. Access to certain areas was restricted during testing to those individuals with a need for entry. Work activities were effectively controlled in other areas where general access controls had been established in accordance with Procedure 2PP2.03, "Access Control." No violations or deviations were identified during the performance of plant tours.

Plant operations management was informed of one observation noted by the inspector regarding the EXIT and Evacuation Exit signs inside the radiologically controlled area. The signs directed personnel to the Unit 1 access control station which is not normally in use. The Unit 2 access control station is the normal entry and exit point for the radiologically controlled area. The licensee intended to review the issue and modify the signs as appropriate.

6. PREOPERATIONAL TEST PROGRAM IMPLEMENTATION VERIFICATION (70300, 70312, 70340, and 71302)

Relative to the preoperational test program, the inspectors evaluated the implementation of the licensee's management control system to determine if jurisdictional controls were observed for system turnovers, that systems/components undergoing testing were properly controlled, that maintenance activities and preoperational tests were adequately performed, that test discrepancies were properly identified, and that test procedures and operational verifications were satisfactory in content and execution.

6.1 Borg-Warner Check Valves

During this reporting period, the inspectors evaluated several nonconforming conditions associated with Borg-Warner swing check valves. Specifically, the inspectors reviewed the dispositions of TUE Form 91-3054, Revision 1, which identified two broken clevises on 6-inch feedwater check valves (2FW-201 and 2FW-202); and TUE Form 92-3813, Revision 0, which generically addressed undersized fillet welds on the valve bonnet-to-clevis junctures for Units 1 and 2 Borg-Warner swing check valves. In response to the latter issue, the licensee performed an engineering evaluation which was documented on Operations Notification Evaluation (ONE) Form 92-161. This assessment documented the acceptability of the vendor supplied 1/8-inch fillet welds versus the 1/4-inch fillet welds, which were assumed in the seismic qualification reports for these valves. As determined by this evaluation, the existing 1/8-inch fillet welds, which attach the disc arm clevis to the valve bonnet, were acceptable, in that calculated weld stresses were within the design Code allowables.

With respect to the broken clevises on feedwater check Valves 2FW-201 and 2FW-202, the inspectors examined the governing work controls which resulted in the identified component damage. In particular, the inspectors reviewed Maintenance Procedure MSM-CO-8801, Revision 3, "Borg-Warner Check Valve Maintenance," and Startup Work Package SWP Z-7458, "Borg-Warner Check Valve Swing Arm Replacement." As a result of these reviews and information which was developed through discussions with the cognizant startup organization, it was determined that the subject swing arm clevises had been broken as a result of a misinterpretation of the controlling work documents. Specifically, the valve disassembly steps which were specified in Procedure MSM-CO-8801 (Step 8.2.1.10 for bolted bonnet valves, and Step 8.3.1.22 for pressure seal valves) directed that the pivot pin, which attaches the swing arm to the clevis, be removed by removing the weld retaining the arm pin in the swing arm (i.e., grind off the weld and remove the arm pin). Contrary to this requirement, the craft personnel involved with this activity attempted to shear off the retaining arm pin from the inside of the swing arm by driving out the pivot pin with a hammer, which resulted in breaking the clevis arms on Valves 2FW-201 and 2FW-202. As determined by the inspectors during review of ONE Form 92-227, this unauthorized work practice, which was not in agreement with the manufacturers recommendations, was also utilized for the disassembly/repair of Valves 1AF-0075 and 1AF-0078 as well as other Unit 1 Borg-Warner check valves. Therefore, this example of failure to follow procedures is identified as a violation for both Units 1 and 2 (445/9208-01; 446/9208-01).

Subsequent to the identification of this issue, the licensee responded rapidly; TUE Form 92-4009 was initiated to address this concern for Unit 2 valves, and ONE Form 92-227 was generated to evaluate the impact of this unauthorized work practice for Unit 1 valves. At the conclusion of this reporting period, the licensee's evaluations and the affected corrective actions had not been completed. Accordingly, the inspectors will continue to monitor the licensee's actions and the results will be documented in a subsequent inspection report.

6.2 Improper Removal of Valve 2HV-4515

On February 23, 1992, the inspectors were informed of the removal of Valve 2HV-4515, a Unit 2 to Unit 1 component cooling water (CCW) cross connect valve, by construction personnel, that was not performed in accordance with site procedures. Two ONE forms were generated by the licensee to address the immediate issues of Unit 1 CCW operability and improper authorization to remove the valve. The licensee assembled a task team to investigate this incident and several deficiencies were identified regarding procedural compliance during their investigation. The task team was also exploring a number of anticipated corrective actions, but the final determination and implementation of corrective actions had not occurred at the end of this inspection period.

A review of the activities associated with this valve removal indicated that temporary pipe supports, initially installed to support the CCW piping following valve removal, had been inadvertently removed, which called into question the operability of the associated Unit 1 CCW system. This condition was observed by an auxiliary operator approximately 2 hours following the removal of the valve, and the shift supervisor was immediately informed. An engineering evaluation was performed which concluded that no adverse impact on Unit 1 CCW operability existed and that the requirement to use temporary supports was conservative in this instance. The initial installation of the temporary pipe supports and the subsequent reinstallation of the temporary supports utilized wooden braces were not allowed by site Specification CPSES-P-2018, "Field Fabrication and Erection of Pipe Supports"; nor did engineering approve the removal of the temporary supports. The licensee could not determine why the temporary supports were removed nor who had removed them prior to the auxiliary operator noting that they were missing.

The startup personnel had been unable to remove the valve due to interferences in front of and behind the valve and a decision was made to remove the valve by cutting the associated piping. When the construction personnel arrived at the job site to begin the cutting activity (Work Order C92-1994), they determined that the valve could be removed without cutting the piping. Knowing that the intent of the startup work order (C92-1264) was to remove the valve, the construction personnel removed the valve by attaching additional rigging equipment and lifting the valve out. This additional rigging configuration did not comply with the requirements of Technical Evaluation (TE) 92-468, which identified the allowable lifting configuration. The construction work document included provisions for cutting the piping for removal of the valve but did not provide for additional attempts or rigging configurations to lift the valve. Once the valve was removed, the pipe openings were not covered as required by Procedure STA-607, "Housekeeping Control," nor were personnel accountability

records maintained regarding access to the housekeeping zone during the performance of the tasks. Additionally, the valve fasteners were not removed under the ASME Section III quality control (QC) program as required by Procedure STA-731, "ASME Section XI Repair and Replacement Activities." These identified failures to follow established quality-related procedures are an apparent violation. (445/9208-02; 446/9208-02)

6.3 Maintenance Performed on Wrong Unit Valve

On March 17, 1992, Unit 2 construction personnel disassembled and reassembled Valve 1CS-7048A, a Unit 1 boron thermal regeneration system (BTRS) valve when the associated work document, Startup Work Authorization 82270, was written to have the work performed on Valve 2CS-7048A, a similar valve located in the Unit 2 BTRS. Investigation by the licensee determined that a radiation protection (RP) technician had inadvertently established a radiological barrier, in anticipation of the valve maintenance, around the incorrect valve. The Unit 2 valve had been appropriately isolated and tagged, and the Unit 1 valve remained isolated and tagged as a result of maintenance that had been performed several days earlier. The construction personnel and the QC inspector monitoring the work did not verify the identification of the component, which was clearly labeled, prior to beginning disassembly of the valve. The valve was disassembled, the diaphragm was replaced, the valve was reassembled and inspected by the QC inspector, and the work area was exited. Subsequent to the completion of the valve maintenance, another RP technician reviewing the logs associated with this activity observed that the contamination levels appeared to be excessively high for what should have been a Unit 2 valve. Both valves are located on the 832-foot elevation in the auxiliary building inside the radiologically controlled area. The RP lead technician, responsible work group, and the control room were informed that the wrong unit's valve may have been worked on. A ONE form was generated by the licensee to evaluate the incident.

As a result of this event, on March 18, 1992, Unit 2 management suspended all activities involving disassembly or reassembly of components within the operations controlled area on Unit 2 permanent plant equipment pending review of the incident. A task team was formed to investigate the issues involving work control practices and to recommend corrective actions. The preliminary finding of the task team was that the primary root cause of this event was the failure to verify the correct component prior to commencement of the work activity. Immediate, short-term actions were implemented requiring double verification of component identification prior to beginning work, and selected work activities were released to be performed. Several letters were issued from Unit 2 management to all personnel discussing the incident and the responsibilities that the various work groups are charged with implementing. The various individuals involved with the incident were being considered for disciplinary action by the licensee in accordance with corporate policies. The task team effort was in progress at the end of this inspection period. The identified failure to follow the authorized work instruction by performing maintenance on the incorrect valve was an additional example of an apparent violation (445/9208-02; 446/9208-02).

6.4 Maintenance on BTRS Valve

The inspectors observed the performance of maintenance on Valve 2-7014E, a Unit 2 BTRS demineralizer resin sluice valve. The valve was enclosed in a glove bag with a drain hose connected between the glove bag and a floor drain. The valve bonnet was loosened and the glove bag began to fill with water. While attempting to clear the glove bag drain, the drain hose was inadvertently pulled from the glove bag releasing approximately 2 gallons of water onto the floor. The craftsman and the attending RP technician immediately cleaned the area and proceeded to frisk the material at the nearest monitoring station. No contamination was detected. A large funnel was placed under the original glove bag to capture any additional leakage from the valve and directed it to the floor drain.

The maintenance on the valve was performed in accordance with the construction work document which also contained the appropriate signatures for verification that the correct component was being disassembled. All observed activities, including the response to the broken glove bag drain fitting, were appropriate.

6.5 Reactor Vessel and Internals

During this reporting period, the inspectors witnessed selected aspects of the cleanliness verifications of the reactor coolant loops, vessel, and internals which were controlled by Flush Plan 2FP-5501-03. All observed work activities, including the provisions for temporary protection and equipment cleanliness controls for the reactor vessel and head, were properly performed and appropriate provisions for area access control had been implemented.

The inspectors also witnessed the conduct of work activities associated with the installation of the reactor vessel head in preparation for the conduct of the reactor coolant system cold hydrostatic test. These work evolutions, which included the installation and torquing of the reactor vessel head studs/nuts, were performed in accordance with Construction Traveler TCX-RCPCRV-01, Revision CP-2. No deficiencies were identified during the conduct of this installation process and the work controls, which were established and implemented, were regarded as excellent.

6.6 Secondary Hydrostatic Tests

The inspectors evaluated all aspects of the Unit 2 secondary hydrostatic tests which were conducted in accordance with ASME Construction Procedure ACP-12.1, Revision 6, "Pressure Testing"; Special Operating Instruction SOI-2-92-AF-01, "Unit 2 Auxiliary Feedwater Steam Generator Fill"; and the following tests and procedures:

Test No.	Revision	Title
2 SEC-011 (Steam Generator No. 1)	0	Construction Hydrostatic Test Data Package
2 SEC-012 (Steam Generator No. 2)	0	Construction Hydrostatic Test Data Package

2 SEC-013 (Steam Generator No. 3)	0	Construction Hydrostatic Test Data Package
2 SEC-014 (Steam Generator No. 4)	0	Construction Hydrostatic Test Data Package

Procedure No.	Revision	Title
2CP-ST-34-07	0	Unit 2 Steam Generator 2-01 Secondary (Steam Generator No. 1)Hydrostatic Test
2CP-ST-34-08 (Steam Generator No. 2)		Unit 2 Steam Generator 2-02 Secondary Hydrostatic Test
2CP-ST-34-09 (Steam Generator No. 3)	0	Unit 2 Steam Generator 2-03 Secondary Hydrostatic Test
2CP-ST-34-010 (Steam Generator No. 4)	0	Unit 2 Steam Generator 2-04 Secondary Hydrostatic Test

The inspectors reviewed the referenced procedures and test plans to determine if they provided for complete test controls, including the provisions for establishing communications and coordination, the delineation of test acceptance criteria and test equipment, the development of appropriate test prerequisites and precautions, and the incorporation of procedural signoffs for test evolution control and accountability. No discrepancies were identified as a result of these reviews and the established procedural controls, which included the lessons learned from Unit 1, were determined to be excellent.

Additionally, the inspectors attended the pretest briefings associated with the secondary hydrostatic tests of Steam Generators 1, 3, and 4. These briefings were thorough and they appropriately addressed the purposes and objectives of these testing activities, including the establishment of proper secondary water chemistry, the operation of systems and components to fill, vent and heatup of the associated steam generators and piping, the maintenance of minimum system pressures and temperatures, and the identification of test plateaus and system inspection objectives. These briefings were conducted in a professional manner and appropriate levels of management involvement were evident.

The inspectors also witnessed the conduct of the hydrostatic tests on three of the four secondary loops. Based on these observations, it was determined that the specified test pressures were properly established and maintained for the required time period (10 minutes) as indicated on the primary test gauge, and that the test gauge was properly calibrated both before and after the conduct of each secondary hydrostatic test.

Additionally, the inspectors accompanied the licensee's personnel on walkdowns of selected portions of the secondary system during these hydrostatic tests in order to confirm the integrity of these systems. No discrepancies were identified by the inspectors as a result of these walkdowns, and it was determined that these test activities were well controlled and executed with

excellent coordination demonstrated between the cognizant operations, startup, and construction organizations. Identified test anomalies, including one tube-to-tube sheet leak in Steam Generator No. 2-04, were properly documented (TUE Form 22-3930) and corrected, and the test results were accurately reflected in the completed test records. It was also determined by the inspectors that the detailed inspections, which were completed by the ASME QC organization, reflected a comprehensive understanding of the specified inspection requirements and a thorough implementation of the inspection plan. Accordingly, the excellent coordination and communication demonstrated between operations, startup, and construction organizations during the conduct of the secondary hydrostatic test evolutions, along with the superior implementation of the inspection process by the ASME QC organization is identified as a strength.

6.7 Reactor Coolant Pump Breakaway Torque

The inspectors reviewed the work documents associated with the reactor coolant pump breakaway torque measurements included in preoperational test Procedure 2CP-PT-55-07, "Reactor Coolant Pump Test." Startup Work Packages Z-16682, -16683, -16684, and -16685 were utilized to perform the activities and referenced mechanical maintenance Procedure MSM-PO-4311, "Reactor Coolant Pump Maintenance." The measured torques ranged from 90 to 125 foot-pounds with 750 foot-pounds being the maximum allowable. The measurements were performed utilizing a torque wrench whose range was 35 - 175 foot-pounds. All data was recorded properly and the document reviews were performed with no deficiencies being identified by the inspectors.

6.8 Emergency Diesel Generator (EDG) A Special Test

The inspectors witnessed portions of special Test 2CP-ST-30-04A, "Initial Diesel Generator Run Train A." These testing activities included the demonstration of local control capabilities, the establishment of governor settings, initial field flashing, and vendor inspections. These activities were performed in accordance with the applicable procedure and the involved test personnel and operators displayed excellent coordination and communications between the control room and the EDG room. The test log was maintained accurately. Test anomalies were properly identified and corrected. The inspector observed that the labeling on the local start/stop switch in the EDG room contributed to the auxiliary operator mispositioning the switch when initially starting the engine. The label immediately above the switch indicates "START/STOP," but to actually start the engine, the switch must be taken in the clockwise direction, which appears to be the reverse direction indicated by the switch labeling. The label was removed to avoid confusion and operations personnel indicated that the wording on the labels would be reviewed to determine if less confusing wording might be required. Additionally, the licensee indicated that the labeling on the handswitches for the Unit 1 EDGs, the Unit 2 Train B EDG, and the control room handswitch would be reviewed for similar wording. During the observed testing, no other deficiencies were identified.

6.3 Direct Current (dc) System Preoperational Test

The Train B dc system preoperational test Procedure 2CP-PT-1-03B, "125 Volt DC System Safety Related Class 1E," Revision 1, was approved on March 6, 1991, with the performance of the test beginning on March 9, 1991. This short time period between procedure issuance and test performance dictated that some NRC procedure review will be conducted following the beginning of testing. The inspectors discussed with licensee representatives the importance of the preferred procedure issuance date as it should allow sufficient time for NRC procedure review before commencement of testing activities.

The inspectors performed a partial review of the above mentioned preoperational test procedure. The procedure was reviewed against startup administration Procedure CP-SAP-07B, "Preoperational Testing," Revision 0, and Desk-Top Instruction DTI-SU-002, "Startup Preoperational, Acceptance Test and Special Performance Test Procedure Writing Guide," Revision 0, for adherence to procedure construction guidance. Although the inspectors determined that, in general, the procedure was well written and complied with the requirements of the above mentioned documents, several items were noted. Section 6, "Prerequisites" contained several prerequisite steps that were prerequisites for multiple sections of the test. For example, Prerequisite 6.7 was the prerequisite for Sections 7.1 and 7.3 of the test. Step 6.7 had a signature blank for each of the applicable sections. However, at the start of Sections 7.1 and 7.3, there was no cue to remind the test personnel that Prerequisite 6.7 applied. There were multiple examples of this, and could potentially result in prerequisites for a particular section being missed. Additionally, several steps were annotated with a "TS" or "AC" with no explanation as to what this indicated. The procedure writers indicated that this notation had been utilized to indicate those steps which contained acceptance criteria (AC) information or was an anticipated Technical Specification (TS) item. As indicated to the inspectors, these comments were being evaluated by the licensee for applicability.

The inspectors also witnessed portions of the performance of the above preoperational test to ensure that it was being performed in accordance with the applicable guidance. The prerequisites were reviewed and found to be complete and properly documented. The test equipment was found to be in accordance with the test requirements. One item noted by the inspector was that the calibration due date for a density meter in use during performance of the test was recorded as having been exceeded. The instrument calibration was determined to be current based on the instrument's calibration sticker and the test equipment's checkout card and the date was subsequently corrected in the test procedure. All data had been recorded as required and the test was in progress at the end of this inspection period. The inspectors will continue to review this procedure and activities associated with performance of this preoperational test.

6.10 Refueling Machine Preoperational Test Witnessing

Selected portions of Startup Test Procedure 2CP-PT-40-03, Revision 1, "Refueling Machine (Manipulator Crane)," were evaluated during this reporting period. Specifically, the inspectors witnessed portions of the functional testing of the manipulator crane control logic interlocks and safety features under no-load conditions. During the conduct of these activities, it was determined that the test prerequisites were properly established, that the observed test steps were appropriately completed, and that the specified quality assurance (QA) surveillance points were verified. Additionally, the inspectors determined that test procedure changes were properly incorporated and that identified test discrepancies were correctly documented. No deficiencies were identified and the observed preoperational test activities were effectively controlled.

6.11 Summary of Findings

Two apparent violations were identified involving several failures to follow procedures during the performance of quality related work activities. One weakness was identified regarding the limited time period between preoperational test procedure issuance and the commencement of testing activities. The coordination and communication between various groups during the conduct of testing activities were excellent. The testing activities were well controlled with the requirements of the preoperational test program being properly implemented.

7. FUEL RECEIPT AND STORAGE (60501)

The inspectors observed portions of new fuel receipt, storage, and inspection. The observed activities included the transfer of the fuel shipping containers from the truck to the fuel shipping container laydown area in the auxiliary building and the transfer of fuel assemblies from the shipping containers to the new fuel inspection stands.

The transfer of the shipping containers from the truck to the laydown area was performed in a safe and controlled manner. The licensee inspected and stored the fuel assemblies in accordance with refueling Procedures RFO-104, "Receipt and Shipment of New Fuel"; and RFO-201, "Receipt, Inspection and Storage of New Fuel and Insert Core Components." All radiological precautions were strictly followed, and the personnel involved conducted the activity in a safe and professional manner.

The inspectors noted that an electric lift used to remove the fuel from the shipping container did not have the wheels locked nor the stabilizing legs lowered. This observation was pointed out to the fuel handling supervisor who directed that the wheels be locked and the stabilizing legs lowered. Additionally, the inspectors observed that the fuel handling supervisor tended to become involved in the actual manipulations associated with handling of the shipping container while waiting for the fuel handling operator to arrive.

This involvement could distract the supervisor from providing supervisory overview of the overall fuel handling activity. This observation was brought to the attention of Units 1 and 2 operations management who indicated that it was not the intent to have the fuel handling supervisor become physically involved in the fuel handling operation. Operations management personnel discussed this issue with the fuel handling supervisor.

While comparing the shipping containers seal data to the product certification document, the inspectors noted that the number on one of the shipping container seals did not match the number on the certification document. The fuel handling engineer immediately verified the data by calling Westinghouse and confirming that a typographical error had occurred on the shipping document and the correct information was subsequently [illegible] to the licensee. All shipping container seals were intact as required.

In summary, the observed fuel receipt, [illegible] inspections, and storage were performed in a satisfactory manner and no violations or deviations were identified.

8. CORRECTIVE ACTION (92700, 92720)

During this reporting period, the inspectors reviewed the implementation of the licensee's corrective action program to determine if adequate management controls and administrative procedures had been developed to identify deficiencies, to provide comprehensive followup action, and to correct safety-related deficiencies.

8.1 Identification and Resolution Review

During this reporting period, the inspectors reviewed selected dispositioned TUE Forms. No deficiencies were identified as a result of this review and it was determined that the licensee's process for the identification and resolution of safety-related deficiencies was being effectively implemented.

8.2 Completions Overview Program

The QA organization instituted a completions overview program which offered additional QA monitoring of quality related activities related to construction and maintenance on Unit 2. The scope of activities performed and the disposition of findings for this program were similar to those identified for the balance-of-plant overview group that was previously discussed in NRC Inspection Report 50-445/91-46; 50-446/91-46. This self-initiated program represented a strength in the Unit 2 project management organization in that activities to further improve the quality level of work were being initiated.

8.3 Noncited Violation Corrective Action

During routine inspection activities, the inspectors became aware of an unattended and previously undocumented electrical jumper in a Unit 2 solid state protection system cabinet that was identified by the licensee during a QA surveillance. Based on discussions with the licensee, the inspectors

determined that the corrective actions for TUE Form 91-2867 regarding an NRC-identified jumper discussed in NRC Inspection Report 50-445/91-55; 50-446/91-55 had not been completed. Discussions with TU Electric's licensing department indicated that the TUE Form containing the expected corrective actions was dispositioned on December 13, 1991, with the corrective actions expected to be completed by January 15, 1992. The untimely completion of corrective actions was identified as a weakness.

9. SUMMARY OF TRACKING ITEMS

The following items were opened in this inspection report:

Violation 445/9208-01; 446/9208-01
Violation 445/9208-02; 446/9208-02

The following items were closed in this inspection report:

Violation 446/8602-21
Violation 445/9151-01; 446/9151-01
SDAR CP-87-51
SDAR CP-88-05
SDAR CP-91-05
SDAR CP-91-08
SDAR CP-91-10

10. EXIT MEETING (30703)

An exit meeting was conducted on March 19, 1992, with the persons identified in paragraph 1 of this report. The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspectors during this inspection. During this meeting, the inspectors summarized the scope and findings of the inspection.