APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/90-42 Unit 1 Operating License: NPF 87
50-446/90-42 Unit 2 Construction Permit: CPPR-127

Dockets: 50-445
50-446

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 (CPSES), Units 1 and 2

Inspection At: Glen Rose, Texas

Inspection Conducted: October 31 through December 4, 1990

Inspectors: W. D. Johnson, Senior Resident Inspector
R. M. Latta, Senior Resident Inspector
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Reviewed by: R M. Latta for
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Division of Reactor Projects

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Date

Inspection Summary

Inspection Conducted October 31 through December 4, 1990 (Report 50-445/90-42; 50-446/90-42)

Areas Inspected: Unannounced resident safety inspection of plant status, operational safety verification, onsite followup of events, maintenance observation, surveillance observation, licensee event report followup, cold weather preparations, followup on a construction deficiency report, followup on previously identified items, and followup on Unit 2 activities.

Results: The planned maintenance outage conducted primarily to enhance secondary plant reliability was well planned. The material condition of turbine building equipment was improved following the outage. The two reactor startups were well coordinated with excellent communications used by the

operators and reactor engineering personnel supporting the startups. The licensee's initial evaluation of plant incidents was appropriate. Maintenance and surveillance activities observed were properly conducted, but two incidents indicated a need for additional licensee attention to proper coordination of safety clearances. Licensee corrective actions for the licensee reports and violations reviewed were appropriate. Two inspector followup items were identified for further review. The first of these involved review of the revised Process Control Program and the procedure related to spent resin transfer (paragraph 10). The other item involved review of the licensee's resolution of connecting rod bearing hole out-of-round conditions identified on a Unit 2 emergency diesel generator (paragraph 12.a).

With respect to Unit 2 activities, a strength was identified relative to the Unit 2 project management approach and the enhancements afforded by the alternate radiologically controlled area (RCA) access facility and by the elaborate and well controlled heating, ventilation and air-conditioning (HVAC) fabrication shop (paragraphs 12.c and d).

DETAILS

1. Persons Contacted

*O. Bhatty, Issue Interface Coordinator
*M. R. Blevins, Manager of Nuclear Operations Support
*H. D. Bruner, Senior Vice President
*W. J. Cahill, Executive Vice President, Nuclear
*B. S. Dacko, Licensing Engineer
*S. P. Frantz, Newman and Holtzinger
*W. G. Guldemond, Manager, Site Licensing
*J. C. Hicks, Unit 2 Licensing Manager
*C. B. Hogg, Chief Engineer
*T. A. Hope, Technical Support Compliance Supervisor
*D. M. McAfee, Manager, Quality Assurance (QA)
*J. W. Muffett, Manager of Project Engineering
*E. F. Ottney, Monitoring Project Manager, CASE
*D. E. Pendleton, Stipulation Manager
*A. B. Scott, Vice President, Nuclear Operations
*P. B. Stevens, Manager of Operations Support Engineering
*C. L. Terry, Director, Nuclear Overview

*Present at the exit interview.

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. Plant Status - Unit 1 (71707)

At the beginning of this inspection period, the unit was at 100 percent power. A power reduction was started on November 2, 1990, in preparation for a planned maintenance outage. The unit was shut down on November 3 and reached Mode 5 on November 4. During the outage, the licensee performed a design modification on the main feedwater system flow control valves and performed other preventive maintenance, corrective maintenance, and design modification activities to enhance secondary plant reliability. In addition, the reactor incore flux detector thimble tubes were cleaned. At the end of the outage, Mode 4 was entered on November 12. An emergency exercise was conducted on November 13. Mode 1 was entered on November 14. On November 19, a plant shutdown was required by Technical Specifications (TS) due to failure of an instrument inverter. Following repairs, the unit was restarted and entered Mode 1 on November 20. The unit conducted power operations for the remainder of the inspection period.

3. Operational Safety Verification (71707)

The objectives of this inspection were to ensure that this facility was being operated safely and in conformance with regulatory requirements, to ensure that the licensee's management controls were effectively discharging the licensee's responsibilities for continued safe operation, to assure that selected activities of the licensee's radiological protection programs are implemented in conformance with plant policies and procedures and in compliance with regulatory requirements, and to inspect the licensee's compliance with the approved physical security plan.

The inspectors conducted control room observations and plant inspection tours and reviewed logs and licensee documentation of equipment problems. Through in-plant observations and attendance of the licensee's plan-of-the-day meetings, the inspectors maintained cognizance over plant status and TS action statements in effect.

During plant tours the inspectors found general plant condition and housekeeping to be very good inside the radiologically controlled area. Turbine building conditions were improved following the maintenance outage. The number of steam and water leaks was fewer and they were properly identified with leakage routed to drains. A significant amount of heat tracing, insulation, and other freeze protection work was underway in the outside areas of the turbine building. Scaffolding has improved access to the main feedwater system flow control valve area, but housekeeping in this area was below average. A general inspection of the containment was performed. Overall housekeeping was good. All work activities observed were adequately staffed and monitored. A final entry was made with radiation protection personnel following personnel airlock closure to restrict general containment access. Containment air samples were appropriately taken.

In the back area of the control room, the area formerly used by the shift test director during startup testing, the inspector noted an outdated set of piping and instrumentation drawings. The drawings were marked "For Information Only." Licensee personnel removed the drawings upon notification.

The inspector examined the official bulletin boards at the primary access point, alternate access point, and entrance to the radiologically controlled area. The postings met the requirements of 10 CFR 19.11 and 21.6. The poster copies of NRC Form 3 were of a reduced size, causing legibility difficulty. Full size copies of the form were provided to the licensee for posting.

The inspector observed reactor startups on November 14 and 20, 1990. Crew briefings were conducted by the unit supervisors prior to the approach to criticality. During the startups, coordination of the operating crews was excellent. Communications were clear and concise. Nuclear engineering

personnel were present to perform inverse count rate ratio calculations. The inspectors concluded that the facility was being operated in accordance with plant procedures and regulatory requirements.

4. Onsite Event Followup (93702)

a. Engineered Safety Features (ESF) Actuation During Surveillance

On November 5, 1990, the plant was in Mode 5 for a maintenance outage. At 4:43 a.m. (CST), an ESF actuation occurred during the performance of a surveillance test on the undervoltage relays on the Train B Safeguards 6.9 kV bus (Procedure OPT-221A, "Cold Shutdown Class 1E Electrical UV Relay Test"). The normal supply breaker to 6.9 kV Bus 1EA2 tripped open and the alternate power supply breaker closed. The Train B blackout sequencer was actuated and started the Train B component cooling water pump, centrifugal charging pump, safety chiller, and service water pump. Containment ventilation isolated and the control room ventilation shifted into the emergency recirculation mode of operation. All systems responded as expected for the plant conditions present. The sequencer was reset and the equipment was secured as necessary following the determination that no blackout condition existed.

Breaker 1EA2-1 opened when an electrician inadvertantly shorted a lead between the undervoltage Relay 27-3X/1EA2, which was energized with 125 Vdc, and the lead to the trip coil of Breaker 1EA2-1, the bus 1EA2 normal supply breaker. The short occurred while the electrician was removing tape from around the exposed lug of a lead that had been previously removed as part of the surveillance procedure. Subsequent to this event the surveillance test was terminated until the ODA-108, "Post-ESF Actuation Evaluation," was completed and the cause verified. A 4-hour report was initiated by the licensee in accordance with 10 CFR 50.72(b)(2)(ii) for nonemergency ESF actuation. The procedure was resumed and completed later that evening.

The inspector reviewed the ODA-108 evaluation and no deficiencies were noted. The inspectors will complete their review of this event following receipt of Licensee Event Report (LER) 90-037-00.

b. ESF Actuation Following Containment Ventilation Realignment

At 9:59 p.m. (CST), on November 5, 1990, a containment ventilation isolation occurred as a result of a high airborne radiation alarm received on the containment particulate, iodine, and gas (PIG) monitor. The containment was evacuated and the personnel airlock doors shut. At the time of this event, the plant was in a maintenance outage, in Mode 5, with a containment purge in progress. Both personnel airlock doors were open with personnel inside containment performing maintenance activities. At approximately 7:13 p.m. on November 5, 1990, the containment ventilation fans were shifted as part of the routine equipment rotation. This included

starting a previously nonrunning containment recirculation fan, shifting pipe penetration fans, and shifting neutron detector cooling fans.

The change in air flow pattern inside containment apparently caused mixing of previously stagnant pockets of air that had accumulated concentrations of noble gases higher than the general containment atmosphere. The ventilation isolation occurred when the containment atmosphere gas monitor, CAG-197, reached its high alarm setpoint. Radiation protection personnel had been notified when the monitor had previously reached the alert level and were in the process of obtaining and analyzing containment atmosphere samples when the isolation occurred.

All systems responded as designed. The containment air samples indicated that the activity was due to noble gases, primarily xenon.

A 4-hour report was initiated by the licensee in accordance with 10 CFR 50.72(b)(2)(ii) for nonemergency ESF actuation.

The containment ventilation isolation was reset at 4:07 a.m. on November 6, 1990. The containment atmosphere gas monitor setpoint was recalculated and adjusted based on the atmosphere sample analyses, and the purge was reestablished.

The inspector reviewed the ODA-108 evaluation and no deficiencies were noted. The inspectors will complete their review of this event following receipt of LER 90-038-00.

c. Entry into Technical Specification (TS) 3.0.3

At approximately 10:15 a.m. on November 20, 1990, with the reactor in Mode 2 during a plant startup, TS 3.0.3 was inadvertently entered for approximately 5 minutes. Main feedwater Pump B was isolated and danger tagged for suction strainer repair. The system operating procedure for feedwater system startup required that the operable feedwater pump be brought to speed and tripped. Performing this step would have resulted in a motor-driven auxiliary feedwater (AFW) pump actuation as a result of both main feedwater pumps being tripped. To prevent this occurrence, operating shift personnel pulled the fuses that carry the main feedwater pump trip signals to the AFW actuation logic, rendering it inoperable. This exceeded Limiting Condition for Operation (LCO) 3.3.2, Table 3.3-2, item 6.e., which required that two channels of ESF actuation circuitry per AFW pump be operable to start the motor-driven AFW pumps if all main feedwater pumps trip, and the LCO action requirement, which required that the inoperable channel be tripped within 6 hours and that a minimum of one channel per AFW pump be maintained operable. Actual conditions were that no channels were operable for a short period. The shift technical advisor recognized this condition and the fuses were replaced immediately.

The licensee was reviewing the event for generic implications. The inspector will review this event and the licensee's corrective actions following receipt of LER 90-042-00.

d. Plant Shutdown Required by Technical Specifications(TS)

On November 18, 1990, Inverter IV1PC3 failed. This inverter supplies 118-volt ac power to one of four safeguards instrument busses. The bus was reenergized from its alternate source. TS 3.8.3.1 requires that the ac instrument bus be energized from its associated inverter connected to its associated dc bus within 24 hours or the unit must be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Troubleshooting and repairs were not successful within the allowed time and a plant shutdown was initiated at 2 a.m. on November 19. At this time a notification of unusual event was declared due to a plant shutdown being required by TS. Mode 3 was entered at 7:54 a.m. and a cooldown was commenced. During the day, the SCR/Diode assembly was replaced and the inverter was tested. It was declared operable at 11:02 p.m. The unit was heated up and returned to power operations on November 20.

The inspectors observed portions of the repairs on the inverter and the reactor startup. The licensee was continuing to investigate the inverter failure. All TS action statements associated with the inverter failure were met by the licensee. This event will be reviewed further following issuance of LER 90-041-00.

Equipment response and initial licensee corrective actions were appropriate for these events. The longer-term corrective actions for these events will be reviewed during followup of the associated LERs.

5. Monthly Maintenance Observation (62703)

Station maintenance activities for the safety-related and nonsafety systems and components listed below were observed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, and industry codes or standards, and in conformance with the TS.

Maintenance activities observed included:

- Checking the bench set values for 1-HV-2452-2, the turbine-driven AFW pump steam admission valve from main steam line No. 4 (Work Order C90-6645).
- Inspection of the replacement compressor for the Train B uninterruptible power supply (UPS) HVAC unit (Work Order C90-1420).
- Changing the oil in the Train B component cooling water (CCW) pump (Work Order P90-4193).

- The repair of stripped holes in the Train B CCW pump motor connection box (C90-4930).

- The replacement of Train B diesel generator air start Valve 1DO-276 (Work Order C90-5070).

- Changing the oil in the Train B CCW pump motor (Work Order P90-4621).

- Cleaning of No. 1 steam generator atmospheric relief valve's discharge line drain orifice (Work Order P90-6985).

- Cleaning of Train B centrifugal charging pump oil cooler service water strainer (Work Order P90-5409).

- Installation of Design Modification 305, which consisted of replacing the positioners and valve internals for feedwater flow control Valves 1-FCV-0510, -0520, -0530, and -0540 (Work Orders C90-6438, -6439, -6441, and -6442) and replacement of the valves' existing packing with live-load packing.

- Repair and testing of IV1PC3, 118-Vac inverter for reactor protection Channel III (Work Order C90-7480).

- Air intake filter replacement on the Train A emergency diesel generator (Work Orders C90-7582 and -7585)

- Incore flux thimble cleaning (Work Order C90-6802). A Westinghouse Nuclear Service Division procedure was reviewed and approved by TU Electric as Procedure NUC-V1-0301, "Incore Flux Thimble Cleaning." Westinghouse personnel performed the cleaning activities. Quality control, radiation protection, and technical support personnel provided TU Electric support. The individuals involved in the task appeared knowledgeable and cognizant of the ongoing activities at all times. The task consisted of dry brushing the thimble tubes, followed by wet flushing with alcohol, gas drying, and dry cotton swab cleaning. The area was inspected following task completion and observed to be clean and clear of all support equipment used to perform the job.

  Postwork testing of the work order was observed and consisted of performing a simulated full core flux map (with no actual recording of data regarding flux levels). This was performed in accordance with the appropriate work order instructions and indicated that all thimble tubes were clear of obstructions except for one tube blocked as a result of a previously identified bent thimble.

- Installation of limit switches and solenoid operated valves on 1-FCV-0520 (Work Order C90-6493).

- Repair of leak at elbow on casing drain line for containment spray pump (Work Order C90-1363).

Maintenance activities observed during this inspection period were performed in an acceptable manner by qualified personnel using adequate procedures and administrative controls. However, two instances of inadequate coordination of safety clearances were identified by the licensee during this inspection period. One case involved the clearing of a TS LCO tracking item for a safety chiller while the chiller was still tagged out under a clearance. The other case involved the removal of a freeze seal on a service water pipe before restoring the clearance which was initiated on the system. These instances indicate a need for additional licensee attention to the proper coordination of clearances.

6. Monthly Surveillance Observation (61726)

The inspectors observed the surveillance testing of safety-related systems and components listed below to verify that the activities were being performed in accordance with the TS. The applicable procedures were reviewed for adequacy, test instrumentation was verified to be in calibration, and test data was reviewed for accuracy and completeness. The inspectors ascertained that any deficiencies identified were properly reviewed and resolved.

The inspector witnessed portions of the following surveillance test activities:

- Visual snubber inspections performed in accordance with Procedure STA 742 and Technical Requirements Manual Section 3.1.
- Cold shutdown Class 1E electrical undervoltage relay test, (Procedure OPT-221A, Work Order S90-2779).
- Partial stroke test of main steam isolation valves (MSIVs) (Procedure OPT-509A, Work Jrder S90-3030).

No discrepancies were identified during the witnessing of these surveillance activities. Procedures were adequate and personnel were qualified.

7. Onsite Followup of Written Reports of Nonroutine Events (92700)

The inspector reviewed an LER to determine whether corrective actions were adequate and whether response to the event was adequate and met regulatory requirements, license conditions, and licensee commitments.

(Closed) LER 90-019-00, "Source Range Flux Doubling Actuation"

The licensee's root cause analysis for this event was inconclusive. The event could not be reproduced. Troubleshooting and subsequent source range channel monitoring indicated no channel operability problems. Operator response to the event was timely and appropriate. This LER is closed.

8. Cold Weather Preparation (71714)

The inspector reviewed the licensee's procedures regarding cold weather preparations. Station Administration Procedure STA-634, "Freeze Protection Program," and Technical Support Procedure (TSP) 522, "Freeze Protection Preparation Guidelines," were not issued until November 15, 1990. Activities were in progress to implement the recommendations of TSP-522 and the licensee stated that contingency plans had been made for rapid implementation in case of a sudden hard freeze. According to TSP-522, freeze protection preparations should have commenced in September. The inspector will continue to monitor the licensee's implementation of the freeze protection program.

9. Licensee Action on 10 CFR Part 50.55(e) Deficiencies (92700)

(Closed) Construction Deficiency SDAR CP-89-13: "ASCO Solenoids for Main Steam Isolation Valves"

This deficiency originated from a nonconformance report that documented a potentially reportable deficiency involving the possibility of the MSIVs reopening after initially closing following a main steamline break outside of containment. Each MSIV has associated with it an ASCO solenoid-operated valve (SOV) that, when opened (deenergized), allows air to provide the motive force to a hydraulic pump that hydraulically opens the MSIV. This ASCO SOV is powered from a non-1E (Train C) bus. In addition to having an ASCO SOV, each MSIV has four Rockwell SOVs associated with it. These valves (2 in series in each of 2 trains), when open (energized), dump hydraulic fluid allowing the MSIV to close. In order for a particular MSIV to shut, its ASCO SOV is energized (shut), and its Rockwell SOVs are energized (open).

The inspector reviewed the manner in which the licensee addressed this issue. The licensee has concluded that the MSIV control system design is adequate. Although the ASCO SOV does not need to be Class 1E qualified for the high energy line break scenario, environmental qualification is required.

Because the licensee predicated its position upon the fact that the ASCO SOV was environmentally qualified, the licensee checked to confirm that adequate controls were actually in place for qualified components, including the ASCO SOV and its associated equipment. During this check, the licensee discovered that the cables and junction boxes associated with the ASCO SOV were not documented as being environmentally qualified in accordance with the programmatic controls that are used to maintain the status of qualified components. The licensee concluded that it was possible that activities occurring after the installation of the cables and junction boxes could have challenged the qualified status of the cables and junction boxes

Therefore, because of inadequate controls for the environmental qualification of the ASCO valve's associated equipment, the licensee

determined that this issue was reportable in accordance with the requirements of 10 CFR 50.55(e). For corrective action, the licensee has ensured that the ASCO SOV and its associated equipment are included in the Equipment Qualification Program. Furthermore, the licensee has taken additional steps to ensure that these components maintain qualified status over the life of the plant. These steps include annotating the equipment list and system drawings with notes that specify that this equipment must maintain environmental qualification. Finally, caution tags have been placed on the ASCO SOVs, electrical conductor seal assemblies, and junction boxes, and the system's design basis document now contains a statement explaining that the ASCO SOVs and their associated equipment must be maintained environmentally qualified.

Based on the above reviews and inspection-related activities, this item is closed for Unit 1 only. This item will remain open for Unit 2 pending the implementation of similar corrective actions for Unit 2.

10. Action on Previous Inspection Findings (92701)

- (Closed) Open Item 445/9013-02: "Resin Transfer Procedure."

  This item addressed weaknesses in Procedure RWS-302, "Spent Resin Handling System," related to hose testing, inspection, and installation. The inspector observed a transfer of steam generator blowdown demineralizer resin to a Chem-Nuclear liner on November 9, 1990. The Chem-Nuclear Systems, Inc. procedure in use, FO-OP-023, "Bead Resin/Activated Carbon Dewatering Procedure for CNSI 14-215 or Smaller Liners," had been approved by the station operations review committee. Other procedures in use were RPI-205, "Wet Waste Processing," and RWS-302. The procedures adequately covered hose testing, inspection, and installation. Hydrostatic test records for the hoses were available from the vendor representative who was present. This open item is closed.

  The inspector noted that the resin being transferred was not radioactive. This reduced the inspector's concerns about inconsistencies between the observed practice, the controlling procedures, and the CPSES Process Control Program (PCP). The RPI procedure was very general, paralleling the PCP in content. The step requiring sampling and analyzing of the resin prior to transfer could not be performed due to a lack of sampling connections on the spent resin holdup tank. In addition, interlocks on vendor equipment and dikes to control inadvertent spillage were not present as described in the procedure. For radioactive resin transfers, compliance with procedures and the PCP will be necessary in the future. Licensee personnel informed the inspector that the PCP and RPI-205 were being revised. This is an inspector followup item (IFI) (445/9042-01).

- (Closed) IFI 445/9031-02: Inadvertently shut emergency core cooling system (ECCS) valve

The licensee's evaluation of the resulting plant incident report (ONE Form FX 90-2114) concluded that a combination of factors led to the incident. These factors involve maintenance, postwork testing, design change authorization (DCA) implementation, procedure revision practices, and confusion with respect to controller demand indication versus valve position indication. The licensee's evaluation determined that maintenance had been recently performed on the hand controller for the valve. After the controller was replaced, no one realized that the newly-installed controller should have been modified, prior to installation, to be reverse-acting.

This modification was called for by a DCA that had not been referenced on the master equipment list. Thus, it was not implemented on the new controller. Furthermore, because the equipment data sheet that was used to record calibration data for the new controller neither identified the controller as being reverse-acting, nor included acceptance criteria, there was no way to ensure that the new controller was reverse-acting. Instead of requiring that a calibration be performed after the new controller was installed, the work order specified only that a functional check be performed. This functional check merely verified that potentiometer movement corresponded to controller meter movement. The satisfactory completion of this functional check masked the fact that the new controller, as installed, was not reverse-acting. This situation was compounded by the fact that the control room operators thought that the valve was open because the controller demand indication was 0 percent, which corresponds to an open valve (with a reverse-acting controller).

The inspector has reviewed the corrective actions taken by the licensee. Those include:

- Revising the review and approval processes for DCAs to ensure that design changes are referenced in the master equipment list.
- Revising the instrumentation and controls (I&C) department's program that is used to update equipment data sheets to reflect changes in design requirements.
- Reemphasizing the need for I&C personnel to properly specify postwork test requirements.
- Reinforcing control room operator training to ensure that the operators understand the difference between valve position indication and controller demand indication.

This IFI is closed.

11. Followup on Corrective Actions for Violations (92702)

The inspector reviewed the licensee's response to the below listed violations to determine whether corrective actions were taken as stated and whether response to the events was adequate and met regulatory requirements, license conditions, and commitments.

- (Closed) Violation 446/8411-02: Regular review of the status of the QA program

  As previously documented in NRC Inspection Report 50-445/89-13; 50-446/89-13, the corresponding Unit 1 violation (445/8432-02) was closed based on a review and evaluation of the licensee's corrective actions. These corrective actions, which were programmatic in nature, were determined to be applicable to both Units 1 and 2. Accordingly, this violation is closed for Unit 2.

- (Closed) Violation 446/8411-03: Failure to establish and implement a comprehensive system of planned and periodic audits

  As previously documented in NRC Inspection Report 50-445/89-13; 50-446/89-13, the corresponding Unit 1 violation (445/8432-03) was closed based on a review and evaluation of the licensee's corrective actions. These corrective actions which were programmatic in nature were determined to be applicable to both Units 1 and 2. Accordingly, this violation is closed for Unit 2.

- (Closed) Violation 445/9010-02, Item B: Radiography of Unit 1 Reactor Coolant System Weld 12-A

  As previously documented in the subject inspection report it was determined that TU Electric had failed to take prompt and appropriate corrective actions regarding the failure to implement the required radiographic test requirements for Unit 1 reactor coolant system Loop No. 4, piping field Weld 12-A. During this reporting period the inspector examined the managerial, programmatic, and procedural corrective actions outlined in TU Electric's response letter dated May 3, 1990, and discussed their implementation with the licensee representatives. The TU Electric documentation involved in this examination included: "Interpretations of Codes and Standards" (CPSES-900944D); DEO-POD action items (ONE Form) updates; Policy Statement on Identification and Corrections of Conditions Adverse to Quality (CPSES-9002839); Procedure STA-422, Revision 2, (Processing of Operations Notification and Evaluation - ONE Form); Office Memorandum - Open Items Tracking (CPSES-9009325); and "SWCC Committee Review of ONE Form Reportability."

  As a result of the NRC inspector's review of these documents and based on discussions with licensee representatives, this item is considered appropriately resolved. Therefore, this violation is closed.

- (Closed) Violation 445/9022-03: Failure to properly consider the actual displacement of a misaligned AFW flanged joint

  This violation involved the inadequate technical disposition of ONE Form FX 90-110 which failed to properly quantify the reported AFW flange misalignment.

  Subsequent to the identification of this condition, the inspector reviewed the licensee's corrective actions contained in TU Electric's letter (TXX-90315) dated September 4, 1990. These corrective actions included: a computer analysis of this condition which indicated that the resultant stress caused by the misalignment was below the allowable limits; documentation which reaffirmed the need for personal inspections of discrepant conditions by design engineering personnel prior to the dispositioning of ONE Forms; and the clarification of the governing Engineering Specification ES 2323-MS-100 and Mechanical Maintenance Procedure MSM-GO-0230.

  Based on the review and evaluation of these corrective and preventive measures, it was determined that the licensee had established adequate corrective actions. Therefore, this violation is closed.

12. Unit 2 Activities (50071, 50073, 50075, 50100, 71302)

During this inspection period, routine tours of the Unit 2 facility were conducted in order to assess equipment conditions, security, and adherence to regulatory requirements. In particular, plant areas were examined for evidence of fire hazards and installed instrumentation damage and to determine the acceptability of system cleanliness controls and general housekeeping. Additionally, the inspector conducted evaluations of existing plant programs for the preservation and maintenance of installed systems and components as well as the utility's preparations for the resumption of construction activities for Unit 2.

a. Unit 2 Diesel Generator Rework

The inspectors continued to monitor the licensee's rework activities on the Train A emergency diesel generator (EDG). Because this EDG is now essentially disassembled, most of the licensee's efforts during this inspection period have been directed toward equipment cleanup activities and component testing in preparation for reassembly.

In the conduct of their routine tours and observations, the inspectors witnessed portions of the following activities:

- Blue checking of the connecting rods (blueing of rack teeth).
- Liquid penetrant testing of the connecting rod wrist pin bushings and the new cylinder heads.
- Eddy current testing on the crankshaft journal fillets.

- Hardness testing of the engine head studs, governor drive gears, and wrist pins.

- Dimensional checking of the crankshaft journals and the connecting rod inserts.

These activities were conducted in accordance with two procedures:

- MSM-CO-3830, Revision 0, "Emergency Diesel Engine Disassembly and Assembly"

- MSM-CO-3349, Revision 1, "Emergency Diesel Engine Pistons, Rods, and Rings Maintenance"

In general, the inspectors observed that personnel were adhering to procedures, using appropriate safety practices, recording data properly, and interpreting data correctly. No significant discrepancies were identified in these areas.

However, because work has progressed to the stage involving the performance of nondestructive tests and the determination of critical dimensions, a new issue involving the lack of concentricity of the connecting rod large bore holes was identified. Essentially, the vendor's technical instructions that are being used as guidance for the ongoing diesel overhaul require that the licensee measure the connecting rod large bore holes to determine if out-of-round conditions exist. The licensee has measured all eight of the connecting rod bore holes and has determined that several of these assemblies failed to meet the vendor's specified tolerance. The licensee initiated TU Evaluation Form 90-151 to evaluate this condition. At the conclusion of this inspection period, the licensee had not yet finalized the technical resolution of this issue. Therefore, this issue will be tracked as IFI 446/9042-01 pending the licensee's closure of the TU evaluation and the NRC's review of the technical resolution.

As previously identified in NRC Inspection Report 50-445/90-40; 50-446/90-40, an IFI 446/9040-01 was initiated to track the licensee's resolution of the TU Evaluation Form that documented discrepancies reguarding the minimum contact area, on the mating halves of the connecting rods. This item will remain open pending further technical evaluation of the licensee's resolution of this issue (and any potential impact on planned future inspections of Unit 1 diesels).

b. ASME Survey

On November 12, 13, and 14, an ASME survey team comprised of seven members was on site to evaluate the renewal of the NA and NPT Certificates of Authorization, including the Material Supplier (MS) certificate for Unit 2 only. This team performed a 3-year review of the Brown and Root program elements for ASME Code compliance and the

verification of program implementation through field inspection activities.

At the conclusion of the survey, the team presented their findings which indicated general program acceptability subsequent to minor changes which, in part, expanded the ASME quality control (QC) involvement relative to the receipt inspection of Code materials. The results of the ASME survey team will be presented to the ASME subcommittee on nuclear accreditation for review and certification renewal determination. The results of the subcommittee's findings are expected to be revealed in the February 1991 time frame.

c. Heating, Ventilation and Air Conditioning (HVAC) Systems

The fabrication of replacement HVAC sections for Unit 2 is currently in progress. This process which is being conducted in the newly completed HVAC fabrication facility (Building 304) is primarily controlled by Procedure CQP-HV-101, "Seismic Category I and Nuclear Safety-Related HVAC Fabrication, Installation, Rework and Repair."

Field installation of safety-related HVAC duct and accessories, including seismic Category I HVAC duct supports, is not scheduled to commence until after January 1, 1991. However, selected installation of nonsafety-related HVAC duct work is in progress to support the completion of the alternate RCA access as discussed in paragraph 12.d of this report.

The inspector reviewed the subject procedure and conducted inspections of the HVAC fabrication facility. Specifically, the inspector examined the licensee's processes for material control, identification of defective parts and components, storage of completed HVAC sections, fabrication practices, and weld filler material issue and control. These processes and the management controls which were in place appeared to be well established and the HVAC fabrication facility was effectively arranged.

d. New Access Point for the RCA (Radiologically Controlled Area)

Construction work began on an alternate access point to the RCA. This work, which is governed by DM 90-297, was undertaken with the intent of improving work control. Specifically, by providing an alternate access point to the RCA, Unit 2 personnel, designated to perform work activities in the RCA common area, will have an expedient entry point to the RCA which will significantly reduce the impact on the primary (Unit 1) access point.

Within the areas examined, no adverse findings were identified and the inspection results generally indicated that the Unit 2 project management approach represented an organizational strength as exemplified by the enhancements afforded by the alternate RCA access facility and by the elaborate and well controlled HVAC fabrication shop.

13. Inspector Followup Items (IFIs)

Inspector followup items (IFI) are matters which have been discussed with the licensee, will be reviewed further by the inspector, and involve some action on the part of the NRC or licensee or both. IFIs identified during the inspection are discussed in paragraphs 10 and 12.a.

14. Exit Meeting (30703)

An exit meeting was conducted on December 6, 1990, 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 NRC inspectors summarized the scope and findings of the inspection.