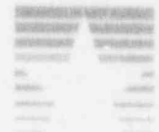

TU ELECTRIC

Log # TXX-92202
File # 10130
IR 91-202,91-201
Ref. # 10CFR2.201

April 30, 1992

William J. Cahill, Jr.
Group Vice President

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) - UNITS 1 AND 2
DOCKET NOS. 50-445 AND 50-446
NRC INSPECTION REPORT NOS. 50-445/91-202; 50-446/91-201
RESPONSE TO NOTICE OF VIOLATION

REF: TU Electric letter logged TXX-92143 from William J. Cahill, Jr. to the NRC, dated March 27, 1992

Gentlemen:

TU Electric has reviewed the NRC's letter dated March 31, 1992, concerning the Configuration Management Inspection (CMI) conducted by the NRC staff from November 18 through December 13, 1991. This inspection covered activities authorized by the NRC operating license NPF-87 and construction permit CPPR-127. The March 31, 1992, letter requested that TU Electric respond within 30 days regarding actions taken related to the Notices of Violation identified within the report. The requested response is provided in the enclosed attachment.

In the referenced letter, TU Electric provided the actions taken related to Deficiency 50-445/202; 50-446/201 and the unresolved items in the inspection report. Note that the responses to this deficiency, in some cases, have been revised. In addition, the corrective action schedules for items (c), (d) and (e) have been changed.

Sincerely,

William J. Cahill, Jr.

RHS/ds
Attachment

c - Mr. R. D. Martin, Region IV
Mr. L. A. Yandell, Region IV
Mr. B. A. Boger, NRR
Resident Inspectors, CPSES (2)
T. A. Bergman (NRR)
B. E. Holian (NRR)

A001

Notice of Violation
(445/91202-01; 446/91201-01)

10 CFR Part 50, Appendix B, Criterion III, requires that design control measures be established for verifying or checking the adequacy of design and for assuring that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. TU Electric Quality Assurance Manual Chapter 3 implements the requirement for verification and checking of the adequacy of the design.

Contrary to the above, the following are examples of failure to implement adequate design control measures:

Summary of Causes and Corrective Actions for 445/91202-01; 446/91201-01

The approach to resolve the violation included addressing each finding for cause, extent of condition, significance, corrective actions, and actions to preclude recurrence. In addition, the individual parts of the violation were reviewed collectively to determine underlying causes to develop preventive actions.

Although the findings varied by discipline, type, and nature, an underlying trend existed throughout. In most cases, the finding would not have occurred had the preparers been more careful in developing the calculations and had the reviewers or design verifiers been more thorough in their review of calculations and applicable design inputs.

In addition to the actions taken in the past to enhance the quality of calculations (including monitoring programs, technical training, training on attention to detail, and responsibility of calculation preparers and reviewers), the Project has instituted a training program which discusses the design verification provisions in ANSI N45.2.11. This training focuses on the purpose, methods, and importance of complete and thorough verification of design using actual examples to reinforce design concepts. CPSES training began March 16, 1992, and includes site engineers involved in calculation review, verification and approval. In addition, the results of future TU Electric QA audits and surveillances will be closely monitored by Unit 2 Engineering Assurance to evaluate the effectiveness of these and other actions being taken to enhance calculation quality.

In addition to training, a number of reviews and procedure changes have been or will be completed for the individual parts of this violation. These actions are discussed below. Corrective actions will be completed and available for onsite review by the committed dates.

Description of 445/91202-01(a); 446/91201-01(a)

(a) Westinghouse Calculation ID2-0152 was inadequate in that incorrect design temperature and pressure values were used for vendor-provided Class 1 piping analyses for the emergency core cooling system (ECCS). Vendor calculation ID2-0152 used design temperature and pressure values of 300°F and 2735 psig, respectively, that differed from the correct values of 650°F and 2485 psig listed in the TU Electric "ACCESS" database and as provided by Westinghouse Letter WPT-12394.

Response to 445/91202-01(a); 446/91201-01(a)

TU Electric accepts the violation.

1. Reason for Violation

The following paragraphs summarize the reasons for the violation concerning Units 1 and 2.

- Training of Unit 1 engineering piping and support personnel to the Westinghouse program and implementing procedures was evident. However, training to the specific project procedures for design change control was considered inadequate.

- Specific Westinghouse CPSES Unit 1 procedures describing methods for piping analysis and the procedure describing final reconciliation referenced the Piping Designation List (CPES-M-1017), but did not reference possible applicable Design Change Authorizations (DCAs).

- On September 11, 1991, the Unit 1 CPSES Piping and Support Group was placed on controlled distribution for the Piping Designation List (PDL). Prior to that, the PDL, (Revision 0) was referenced on specific CPSES procedures, and DCAs were transmitted to the Westinghouse Piping and Support Group from Westinghouse projects. Revisions to the PDL and DCAs were received and filed with the revised list. The users of the list were required to review each DCA to ensure that the information (input) was current. However, this process involved numerous DCAs and their content was sometimes detailed. Consequently, this process was cumbersome and prone to errors.

- Concerning Unit 2, Westinghouse did not use the correct design pressure and temperatures in some of the Unit 2 piping analysis because Access was being validated as the analysis was being worked.

2. Corrective Steps Taken and Results Achieved

Unit 1 Line List Reconciliation

ONE Form, FX-91-1660 was issued to identify and resolve this violation. A summary of the actions associated with the Unit 1 Class 1 piping calculations is discussed below.

Westinghouse reviewed the PDL, Revision 4, for the Westinghouse Unit 1 scope Class 1 lines to identify differences between the list and analysis design pressures and temperatures. The review was performed on a stress problem basis. Fourteen (14) piping analysis problems were impacted by temperature and pressure changes. The design calculations have been revised to correct design pressures and temperatures. The revised calculations do not reflect any significant increase in pipe stress. Design loading requirements are still met.

- A review of other correspondence including WPT-12394, -8946 and MED-EEE-6911 was also completed. Inconsistencies were identified but were determined to be insignificant by Westinghouse Fluid Systems.

- A review will be conducted to compare specified temperatures and pressures in the PDL, Westinghouse line list, ACCESS, and the equipment functional design requirements, to ensure that these documents are in agreement. This review will be completed by May 31, 1992.

- Unit 1 Westinghouse internal procedures governing the appropriate source and use of design temperatures and pressures have been revised to reflect that the PDL, Revision 4 with DCAs is the source of the Unit 1 design temperatures and pressures. The procedure tables were corrected to be consistent with the PDL.

Resolution of Unit 2 Line List Discrepancies

The intent was always for Westinghouse to use ACCESS; however, it was not employed because the needed information had not been incorporated into the database at the time the design analyses were performed. The database has subsequently been validated. Westinghouse will use ACCESS to define the appropriate design temperatures and pressures. In addition, the As-Built Reconciliation program will provide for a single verified source of design inputs and the means to identify and reconcile discrepancies related to the subject inputs.

3. Corrective Steps Taken to Avoid Further Violations

To ensure other errors related to DCAs were not made, the following Specifications and Design Basis Documents (DBDs) related to the analysis were reviewed.

- Floor Response Spectra, Rev. 0
- Pipeline Designation List, Rev. 0 to Rev. 4
- Reflection Insulation, Rev. 2
- Valve Weight List, Rev. 0
- Design Basis Document, Building and Secondary Wall Displacements, Rev. 2
- Piping and Equipment Insulation - Non-Nuclear Safety Related, Rev. 1
- Penetration Seal Schedule

No additional findings that may have affected the integrity of CPSES Class 1 piping analysis were found.

Programs and procedures for Unit 2 are in place between CPSES and Westinghouse for processing, distributing and incorporating design changes. Design changes, initiated by Westinghouse and other design groups are documented and controlled in accordance with the CPSES program ACCESS. These design change documents are being transmitted to effected groups on a controlled distribution list.

DCA training had been given, but not documented, during the Westinghouse Unit 1 piping analysis effort. Since the error occurred, the importance of adequately reviewing DCAs has been re-emphasized in the Unit 2 Westinghouse Piping and Support Group bi-weekly meetings. In these meetings the engineers are made aware of changes that are occurring in the specifications and design documents that are important to the analysis and designers.

Onsite Westinghouse personnel have received training to ensure that the Equipment Qualification and Testing group (EQ&T) is provided with DCAs and TU Evaluation Forms (TUEs) that affect Westinghouse supplied equipment. Training also has been provided to personnel in the Fluid System group working on the Comanche Peak Project. This training included a discussion of the controls used for system parameter changes transmitted to CPSES, that system parameters be compatible with the Westinghouse Functional Requirements Document, and that notification of any system parameter change to the applicable unit(s) be made.

4. Date when Full Compliance Will Be Achieved

Full compliance will be achieved by May 31, 1992.

Description of 445/91202-01(b); 446/91201-01(b)

(b) The Class 1E 125 VDC short circuit calculation (Calculation 2-EE-0016, Revision 1) failed to consider the full contribution of the battery charger by incorrectly assuming a limiting amperage during the initial fault current surge.

Response to 445/91202-01(b); 446/91201-01(b)

TU Electric accepts the violation.

1. Reason for Violation

The preparer and reviewer followed the guidelines in IEEE-946-1985 Section 7.92 for calculating the short circuit contribution from the battery chargers. According to IEEE-946-1985, the maximum short circuit current that a charger will deliver will typically not exceed 150% of the charger ampere rating. However, the preparer and reviewer did not recognize that the battery charger current limiting feature does not start until after the short circuit current wave crosses the first zero into the waveform.

The DC battery short circuit current calculation used Thevenin's model of the battery source using 140V DC equalizing voltage because it was assumed to be a more conservative voltage. However, it was not recognized that this model would result in higher internal battery resistance.

2. Corrective Steps Taken and Results Achieved

The battery charger vendor, Power Conversion Products (PCP), conducted a test on a battery charger model which is the same as the type used at CPSES. The vendor has provided the test results to CPSES and confirmed that the fuses to protect the Silicon Controlled Rectifiers (SCRs) blew almost instantaneously upon a dead short to the DC side of the battery charger. The test report indicated that there was no damage to the SCRs after the test.

Dead short circuits on buses of electrical equipment are less likely to occur when manufactured and tested in accordance with proven industry standards, qualified to IEEE and seismic requirements and operated in a controlled mild environment. However, if postulated, the fault would be cleared by the protective fuses as demonstrated by the vendor's test.

The resulting temporary loss and isolation of the charger meets the intent of IEEE-279 and 308 because of the following features provided in the CPSES design.

a. The loss of AC input to the battery charger is alarmed in the control room.

b. A readily connectable backup battery charger is provided for each safety train.

Therefore, the Class 1E DC Power Supply System supported by dual battery chargers provides a reliable power supply source and is adequately protected and monitored against postulated faults in the system.

3. Corrective Steps Taken to Avoid Further Violations

DBD-EE-044, "DC System" will be revised to incorporate the criteria for calculating the DC short circuit current from batteries based on 125VDC potential, the manufacturer's supplied potential, the manufacturer's supplied internal resistance, and ANSI Std. C37.14-1979 for battery charger fault current contribution.

4. Date When Full Compliance Will Be Achieved

Full compliance will be achieved by August 30, 1992.

Description of 445/91202-01(c); 446/91201-01(c)

(c) The Class 1E 125 VDC protective device coordination study (Document EE-CA-0008-128, Revision 2) showed a lack of coordination because of a failure to properly account for the battery charger and battery short circuit contributions.

Response to 445/91202-01(c); 446/91201-01(c)

TU Electric accepts this violation.

1. Reason for Violation

Same as for Violation 445/91202-01(b); 446/91201-01(b).

2. Corrective Steps Taken and Results Achieved

The following DC short circuit and coordination calculations were revised to reflect the correct short circuit currents based on the manufacturer's data and industry standard ANSI C37.14-1979.

- Short Circuit Study for Class 1E 125VDC System - Unit 1

- Short Circuit Study for Class 1E 125 VDC Systems - Unit 2
  125 VDC Coordination

The 200A distribution panel board supply circuit fuses were replaced for Unit 1 and will be replaced via DCA for Unit 2 with slow-blow type fuses to accomplish coordination by November 1, 1992.

Since this finding could be applicable to any equipment that has a current limiting feature, such as battery charger and inverters, the equipment has been evaluated for both Units and determined to have no impact on the existing design.

3. Corrective Steps Taken to Avoid Further Violations

Same as for Violation 445/91202-01(b); 446/91201-01(b).

4. Date When Full Compliance Will Be Achieved

Full compliance will be achieved by August 30, 1992.

Description of 445/91202-01(d); 446/91201-01(d)

(d) Analyses had not been performed to determine the voltage drop to critical components required to mitigate a main steam line break outside the containment in accordance with the requirements of DBD-EE-31, "Environmental Qualification of Safety-Related Electrical Equipment," and DBD-EE-52, "Cable Philosophy and Sizing Criteria.

Response to 445/91202-01(d); 446/91201-01(d)

TU Electric accepts the violation.

1. Reason for Violation

The preparer and reviewer believed the voltage differences would be negligible and therefore, did not address the impact of the higher ambient temperature on the resistance of the cable lengths routed in areas of a postulated Main Steam Line Break (MSLB). Since the temperature duration is long enough to increase the cable resistance by

approximately 24% (for power cables - based on 90°C) to 30% (for instrument and control cables - based on 75°C) from its non-accident value, a potential for not having adequate voltage at the safety devices may have existed.

7. Corrective Steps Taken and Results Achieved

Safety-related equipment outside containment in rooms subject to a MSLB temperature of 334°F was evaluated. The power equipment in these rooms that are located in/but not required for an MSLB consists of eight motor operated valves. Calculations show that even at a higher temperature of 334°F, a margin of more than 100% is available between the calculated and actual cable lengths.

Safety-related equipment inside containment subject to a MSLB temperature of 345°F was evaluated. Eighteen containment isolation valves are required not to operate for MSLB. The margin between the actual length and the acceptable cable length for the valves was found to range from 380% to 1700% based on the minimum bus voltage of 428 volts (i.e., during the largest motor starting and a minimum MOV operating voltage of 368 volts).

Additionally, four other in-containment MOVs provide isolation between the high and low pressure piping of the Reactor Coolant System and the Residual Heat Removal (RHR) system. These MOVs are locked closed by removing the power source and remain closed under MSLB conditions. If desired by the operator, these valves may be opened under post-accident conditions. Coincident with the start of the largest motors and minimum system voltage conditions, the voltage at the MOV terminals could be less than 80% or 368V (calculation 2-EE-0008 Rev. 3). This condition was determined to last for no more than 0.5 seconds, which is the maximum recovery time of the voltage when starting the largest load off a diesel generator (Diesel Generator Test Report CP1-MEDGEE-01). During the 0.5 seconds, either the contactor of the MOV will not pickup or the motor will stall until adequate voltage is available at its terminal. The design maximum stroke time for these MOVs is 120 seconds. A delay of 0.5 seconds, for completely closing or opening these valves, would have a negligible effect on the function of these valves. There are no response time requirements for these valves.

The electrical loads in High Energy Line Break (HELB) areas were also evaluated. Calculation 2-EE-0008 Rev. 3 indicated that a minimum of 500% margin exists between the permissible and the design cable lengths. Therefore, the impact of higher design resistance due to the HELB temperatures on the available voltage at the loads is negligible and does not need to be specifically addressed in the calculation.

For Class 1E control and instrumentation circuits, the following Unit 2 calculations were revised to address the affect of the higher ambient temperature of 334°F.

Calculation 2-EE-0006
Calculation 2-EE-0007
Calculation 2-EE-00012

Although the bounding ambient temperature due to an MSLB is 345°F inside containment, the conductor temperature will not exceed 334°F. The same temperatures can be applied to the following in containment devices:

125 VDC Control Circuits
MCC (120 VAC) Control Circuits - Calculation
Miscellaneous 120 VAC Control Circuit

In calculating the minimum voltages available at the device, 75°C rated cable resistances were multiplied by a factor of 1.3 to account for the higher MSLB temperature. The new minimum required voltages were compared against the available voltages for acceptability. The minimum required voltages were below the available voltages and were, therefore, acceptable.

3. Corrective Steps Taken to Avoid Further Violations

Evaluations of the above Unit 2 calculations are underway to determine the impact of Unit 1/Unit 2 interface cables. Similar changes will be reflected on Unit 1 calculations. DBD-EE-052 will be revised to require the temperature affect on cable resistance under design basis accident conditions be considered when calculating the minimum voltage at the equipment.

The CPSES Design Engineering Group has been advised of the requirement to use the appropriate temperature when calculating the voltage drop due to the length of cable which is routed in an MSLB or LOCA environment.

4. Date When Full Compliance Will Be Achieved

Full compliance will be achieved by September 30, 1992.

Description of 445/91202-01(e); 446/91201-01(e)

(e) The residual heat removal cooldown analysis, Calculation FRSS-TBX-1076, incorrectly assumed a constant temperature for the ultimate heat sink for the duration of the cooldown period. This assumption was incorrect in that the heat sink temperature would increase during the accident.

Response to 445/91202-01(e); 446/91201-01(e)

TU Electric accepts the violation.

1. Reason for Violation

The violation occurred because of inadequate communication between organizations concerning details regarding the time dependence of the Safe Shutdown Impoundment (SSI) temperature. In addition, a lower assumption of constant SSI temperature value was assumed.

2. Corrective Steps Taken and Results Achieved

During the course of the CMI Inspection, Engineering completed an analysis that showed the two-train cooldown of the non-accident unit could be achieved after experiencing a design basis loss of coolant accident on the other Unit. CPSES Engineering will determine the SSI temperature as a function of time, assuming a dual unit normal cooldown, which maximizes the heat rejected to the SSI. Westinghouse will determine via a formal calculation the cooldown capability of the RHR system using the above results.

3. Corrective Steps Taken to Avoid Further Violations

The calculation will be added to DBD-ME-260. The RHR Design Bases Document (DBD-ME-260) and FSAR will be reviewed for potential impact. Changes to these documents will be made if necessary.

Engineering is in the process of evaluating other calculations that may have been affected by the 102° constant temperature assumption. Revisions to the applicable calculations, corresponding DBD's and FSAR sections will be made if required. This will be accomplished by November 1, 1992.

Project personnel will be instructed to review requests for information from other contractors for completeness and to communicate with the contractor any perceived incompleteness as well as to request complete boundary condition information, when necessary. It will be emphasized that assumptions regarding critical analysis parameters cannot be made. This action will be accomplished through the Quality Accountability Process.

4. Date When Full Compliance Will Be Achieved

Full compliance will be achieved by November 1, 1992.

Description of 445/91202-01(f); 446/91201-01(f)

(f) The backup protective relay (Device 51V) calculation (TNE-EE-CA-0008-267, Revision 1) incorrectly used a 2000 kVA transformer per unit impedance instead of the emergency diesel generator impedance.

Response to 445/91202-01(f); 446/91201-01(f)

TU Electric accepts the violation.

1. Reason for Violation

   The violation was caused by inadequate attention to detail on the part of the calculation preparer, reviewer and approvers.

2. Corrective Steps Taken and Results Achieved

   The 6.9KV bus voltage computation will be corrected, and the correct characteristic curve for relay 51V will be utilized in calculations TNE-EE-CA-0008-267 and TNE-EE-CA-0008-157. These corrections will be accomplished by August 30, 1992.

3. Corrective Taken to Avoid Further Violations

   In addition to the design verification training, engineers who prepare, review, and approve Electrical Engineering calculations have been advised of the importance of paying more attention to details.

4. Date When Full Compliance Will Be Achieved

   Full compliance will be achieved by August 30, 1992.

Description of 445/91202-01(g); 446/91201-01(g)

(g) The seismic support calculation (Ebasco Calculation Volume IV, Book 52) for the battery room heater used an erroneous input weight of 900 pounds, rather than the weight of 1160 pounds indicated on Vendor Drawing 66L.

Response to 445/91202-01(g); 446/91201-01(g)

TU Electric accepts the violation.

1. Reason for Violation

Review of the violation revealed that during the copying process of the calculation, a second book in the calculation package was inadvertently omitted. This was not readily apparent to the HVAC engineer during review of the calculation. When the calculation was requested for revision and the calculation package provided (including the second book), it was found that the original calculation had considered the appropriate weight of the heater. Therefore, a deficient condition in the calculation did not exist, however a clarification of the calculation was required.

2. Corrective Steps Taken and Results Achieved

Calculation Change Notice (CCN) Number 1 was issued to clarify the calculation table of contents.

3. Corrective Steps Taken to Avoid Further Violations

No further actions are necessary.

4. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Notice of Violation
445/91202-02; 446/91201-02

Criterion X of Appendix B to 10 CFR Part 50, requires that inspections of quality activities be performed to verify conformance with design drawings.

Atwood and Morrill Co. Drawing 18-120-02, "Actuator Bailey Positioner," Revision 1, depicted the instrument air line routing from the middle of the associated air accumulator with a drain off the bottom.

Contrary to the above, the inspection team determined that the instrument air lines from air accumulators to Component Cooling Water (CCW) Control Valves X-PCV-H116A and -B for Trains A and B Uninterruptible Power Supply (UPS) air conditioning system were installed incorrectly. The air lines from the accumulators to the pilot valves of the control valve operators were connected to the bottom and the drains were routed from the middle of the accumulator. This installation had been QC accepted.

Response to Notice of Violation
445/91202-02; 446/91201-02

TU Electric accepts the violation.

1. Reason for Violation

The supplier, Atwood and Morrill Company, provided the skid mounted equipment to CPSES in early 1980's in the as-found condition. At the time, CPSES did not conduct a detailed receiving inspection which would have identified inconsistencies between skid mounted equipment and drawings.

2. Corrective Steps Taken and Results Achieved

ONE Form FX-91-1659 was initiated to address the as-found condition. The ONE Form was dispositioned to correct the condition via work orders. The work orders for Train A and Train B were completed on January 18, 1992.

3. Corrective Steps Taken to Avoid Further Violations

The program for acceptance of vendor supplied equipment is much more vigorous and detailed today than the program in effect when subject equipment was accepted. Since early 1989 (this program change was a result of the CPRT ISAP 7.a.9 effort) CPSES closely monitors vendor supplied equipment via Procurement Procedure MMD-6.02 and Procurement Quality Procedure NQA-6.02.

4. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Notice of Violation
446/91201-03

10 CFR Part 50, Appendix B, Criterion V, requires that procedures appropriate to the circumstances for activities affecting quality shall be established and followed.

The following are examples of failure to follow established procedures:

(a) Construction Specification CPES-M-2003 and Procedure CP-SAP-24, "System Cleanliness Requirements and Control," specify material cleanliness criteria for in-plant and equipment storage areas.

Contrary to the above requirements: (1) a wall mounting plate for CCW Seismic Snubber CC-2-028-411-S33K was required to be stored under controlled conditions; however, the support was lying uncontrolled in the corner of Room 63 of the Safeguards Building, (2) the containment spray pump was not maintained to Housekeeping Zone 2, cleanliness Level

B requirements, as required by Procedure CP-SAP-24, and (3) uncovered and unprotected piping, instrument lines, unlabeled equipment, trash and food were found outside the Unit 2 equipment hatch in a safety-related storage area.

(b) Welding Procedure Specification (WPS) 18013, Revision 8/ICN0, specified a maximum amperage of 80 amperes.

Contrary to the above, the actual amperage was observed by the inspector to be 92 amperes during welding being done under this specification.

(c) Weld Technique Sheet (WTS) 11032, Revision 9/ICN 1, required a minimum preheat temperature of 200°F.

Contrary to the above, a minimum temperature of 174°F was observed during welding on Support AC-2-135-408-C41K.

Response to Notice of Violation
446/91201-03

TU Electric accepts the violation.

1. Reason for Violation

(a) During the 9 months preceeding the identification of this violation, more than half of the construction workers were newly hired. Although these workers were trained in material and housekeeping requirements, they were not as fully sensitive to compliance with these requirements as construction management desired.

Construction Management has continually stressed the importance of good housekeeping practices and proper material storage. Through evaluations by Construction and through Quality Assurance surveillances, management recognized some weaknesses in these areas. Deficiency documents were generated as deemed appropriate and corrective and preventative actions were implemented. Resulting conditions were monitored to assess effectiveness. At the time of this inspection, the benefit of all these previous actions had not been fully realized.

The missing caps for open components was caused by inattention of personnel to the requirements, the intensity of construction and testing activities and lack of clarity in a procedure.

(b) Although the amperage for this electrode size was established at 80 amps on the WPS, the welder increased amerage to approximately 92 amps to compensate for other variables position, travel speed, material thickness) in the weld process. However, the actual amperage (92) used did not exceed the maximum qualified amperage of 110 listed for larger 1/8" rod.

(c) The violation of minimum preheat occurred because the welder was preoccupied with amperage and failed to reverify preheat prior to starting the weld.

2. Corrective Steps Taken and Results Achieved

A thorough sweep of Unit 2 was performed to assess the condition of field storage areas including those in buildings and laydown areas. Inadequate storage areas were immediately corrected as necessary.

Additionally, a thorough sweep of Unit 2 was performed to inspect for uncapped/open components and systems. Discrepant items were corrected as necessary.

TUE Forms were initiated to document the non-compliance concerning the weld processes. The weld produced using above maximum amperage was reviewed by Engineering and determined to be acceptable "as-is".

The weld produced without minimum preheat was removed and replaced.

3. Corrective Steps Taken to Avoid Further Violations

Project Management attention continues to focus on the Housekeeping/Material Storage Areas. The existing program requires personnel be assigned for responsibility for maintenance and daily verifications of Material Storage Areas. The importance of this program has been reemphasized throughout construction.

Project Management maintains a proactive position regarding material storage and housekeeping activities including the performance of frequent plant walkdowns. Since the restart of Unit 2 construction activities, the material storage and housekeeping program has been continually assessed by the Project Team and TU Electric Overview.

The existing program provides assignment of personnel responsible for ensuring caps are maintained on open systems and components. Project Management has issued a letter to all Unit 2 personnel reemphasizing the importance of capping open systems and protection of equipment. This topic is being included in construction safety and supervisor meetings and the Construction Managers daily staff meeting.

Welders have been reinstructed in the use and requirements of Weld Technique Sheets. Inspection and surveillance personnel have been reinstructed in the "averaging method" to be used for digital meter measurement of amperage and voltage. Subsequent welder surveillances have not identified any additional violations of this nature. The welder surveillance programs are, and will continue to be, ongoing and random.

4. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Notice of Violation
446/91201-04

Criterion XI of Appendix B to 10 CFR 50, requires, in part, that test prerequisites are satisfactorily met.

Procedure CDP-ME-102-3 requires that temporary supports be installed to maintain unsupported pipe spans within the maximum limitations as a prerequisite to the conduct of flushing operations.

Contrary to the above, during performance of the RHR system Flush Tests 2RH-5800-0A and -B, the team identified that a number of rigid pipe supports and spring hangers were missing. The supports were removed after the system had been verified adequately supported by the pipe stress analysis engineers and released to the startup group for testing. Some instances were also noted in which temporary supports had not been installed to maintain unsupported pipe spans within the maximum limitation.

Response to Violation
446/91201-04

TU Electric accepts the violation.

1. Response for Violation

The unauthorized removal of the pipe supports was caused by the failure of Project personnel to comply with established requirements, insufficient detail in some established requirements, and a lack of system status knowledge.

2. Corrective Steps Taken and Results Achieved

Temporary pipe supports were installed, where required, on the RHR system.

Engineering evaluated the hardware impact to the RHR system, (which was approximately 150 pipe supports) via TUE Forms for each deficient location and determined that additional loading/stress did not exceed allowable limits.

Service Water (SW) System piping, (containing approximately 450 supports) was inspected for pipe support adequacy and determined to be adequate. The SW System was in the same status (flushing in progress) as the RHR System. Therefore, based on the adequacy of the SW System pipe supports, TU Electric has determined that this deficiency was isolated to the RHR System.

3. Corrective Steps Taken to Avoid Further Violations

The specification and procedure that project personnel utilize for temporary support installation and removal have been revised to clarify temporary support placement, adaquacy, and acceptability. Appropriate project personnel have been trained to the clarified requirements. A memorandum was issued by Project Management to Unit 2 personnel regarding the prohibition of unauthorized work on pipe supports. A program has been implemented by the Mechanical Construction Engineering Group to inform applicable personnel of the current status of systems.

4. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Notice of Violation
445/91202-03

10 CFR Part 50, Appendix B, Criterion XVI, requires that corrective measures shall assure that the cause of a deficient condition is corrected sufficiently to preclude repetition.

Tu Electric Quality Assurance Manual, Section 16, states that corrective measures shall assure that the deficient condition is corrected sufficiently to preclude repetition. Concrete expansion anchor (Hilti bolt) crevice corrosion problems had been previously identified in Significant Deficiency SD-CP-91-003 and Analysis Report SDAR-91-003 for both Units 1 and 2. The Unit 1 Hilti bolts had been environmentally sealed to resolve the problem.

Contrary to the above, as of December 13, 1991, the licensee failed to take adequate corrective action for a condition adverse to quality in that the Unit 1 emergency diesel generator exhaust muffler support Hilti bolts on the safeguards Building roof were found improperly sealed. The impermeable material used as an environmental seal had shrunk and standing water was present to induce Hilti bolt crevice corrosion.

Response to Violation
445/91202-03

TU Electric accepts the violation.

1. Reason for Violation

   The violation occurred because the roofing contractor did not use the material required by CPSES specification, nor was the material applied in the thickness shown on CPSES drawings.

2. Corrective Steps Taken and Results Achieved

   Shortly after discovery of this condition, design engineering personnel initiated a ONE Form. One bolt to make an operability evaluation. This bolt was found to be dry. There was also no evidence of water migration water along the top of the baseplate.

   CPSES Engineering has been working with the contractor and the manufacturers to repair and provide assurance that this condition will not recur. The contractor will perform the repair. The existing urethane will be cut out and replaced in conformance with CPSES drawings and specifications. During this repair Engineering will inspect the suspect population of Hilti bolts for corrosion.

3. Corrective Steps Taken To Avoid Further Violations

   Since the Unit 1 and common pitch pans are to be repaired to conform with plant drawings and specifications. Unit 2 Engineering personnel will ensure that the contractor for the Unit 2 roofing work adheres to those requirements. Engineering will ensure no material is substituted without authorization.

4. Date When Full Compliance Will Be Achieved

   Full compliance will be achieved by September 1, 1992.