

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No. 50-445/92-04; 50-446/92-04

Operating License No. NPF-87

Construction Permit No. CPPR-127

Licensee: TU Electric
406 North Olive Street, L.B. 81
Dallas, Texas 75201

Facility Name: Comanche Peak Steam Electric Station (CPSES)

Inspection At: CPSES, Glen Rose, Texas

Inspection Conducted: January 21-24 and February 10-11, 1992

Inspectors: L. D. Gilbert, Reactor Inspector, Materials and Quality Programs
Section, Division of Reactor Safety

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Approved:

I. Barnes

I. Barnes, Chief, Materials and Quality
Programs Section, Division of Reactor Safety

2-21-92

Date

Inspection Summary

Inspection Conducted January 21-24 and February 10-11, 1992 (Report 50-445/92-04)

Areas Inspected: Routine, unannounced inspection of licensee action on a previously identified inspection finding and Unit 1 inservice inspection data review and evaluation.

Results: The review of inservice inspection records indicated, with one exception, that the required inservice inspections were performed and evaluated by qualified personnel. The exception, for which a violation was identified (paragraph 3), pertained to the failure to perform the required circumferential scans during ultrasonic examination of a safety injection system piping weld. Repair and replacement records were well documented and indicated that the required preservice or inservice inspections were performed in addition to any inspections required by the construction code.

Inspection Conducted January 21-24 and February 10-11, 1992 (Report 50-446/92-04)

Areas Inspected: Review of a preservice examination report.

Results: An inspection followup item was identified (paragraph 3) in regard to the correctness and inspectability of the depicted weld configuration found in a preservice examination report. The preservice inspection data report was reviewed in order to evaluate a Unit 1 inservice inspection problem.

DETAILS

1. PERSONS CONTACTED

TU ELECTRIC

J. Ayres, Operations Quality Assurance (QA) Manager
*R. Baker, Licensing Compliance Manager
**M. Blevins, Director of Nuclear Overview
C. Box, Quality Control Level III
*L. Bradshaw, Stipulations Assistant
R. Byrd, Operations Quality Control Manager
W. Cahill, Group Vice President
**D. Foken, Senior Analyst
W. Hartshom, Surveillance Engineer
*J. LaMarca, Technical Programs Manager
*R. Mays, Supervisor Mechanical Codes and Standards
D. McAfee, QA Manager
E. Schmitt, Surveillance Manager
J. Smith, Senior QA Technician
C. Terry, Chief Engineer
**J. Thompson, Licensing Senior Engineer
**B. Wadley, Inservice Inspection Coordinator
R. Walker, Manager of Nuclear Licensing

CASE

**O. Thero, Consultant

NRC

**W. Johnson, Senior Resident Inspector
G. Werner, Resident Inspector
I. Barnes, Section Chief

{Denotes those attending the exit meeting on February 11, 1992.

*Denotes those attending the exit meeting on January 24, 1992.

The inspectors also interviewed other licensee employees during the inspection.

2. LICENSEE ACTION ON PREVIOUSLY IDENTIFIED INSPECTION FINDINGS (92702)

(Closed) Violation (445/9156-01): Preservice magnetic particle examination of the Unit 1 reactor vessel closure head nuts was conducted in one direction only.

The inspectors reviewed the disposition of Operations Notification and Evaluation (ONE) Form No. 91-1371 and the corrective actions associated with the nonconformance. Included in this review was examination of the magnetic particle examination reports that were generated as a result of re-examination of the 54

reactor vessel closure head nuts for Unit 1 and the two spare nuts identified as S-1 and S-2 in November 1991. The reports all stated that the reactor vessel nuts were satisfactorily examined in accordance with the magnetic particle examination procedure, TX-ISI-70, Revision 2 and Field Changes 1 and 2, which requires that the examination be conducted in the circumferential and axial directions. In a like manner, the inspectors reviewed the magnetic particle re-examination report for the Unit 2 reactor vessel closure head nuts. A review was also performed by the licensee of additional preservice data reports to establish whether this problem was isolated to the reactor vessel closure head nuts, with no additional problems identified. This item is considered closed.

3. INSERVICE INSPECTION DATA REVIEW AND EVALUATION (73755)

The objectives of this area of the inspection were to: (1) ascertain whether the reported data covers the scope of examination required during the current inspection period of the inspection interval as described in the applicable ASME Code, the Technical Specifications, and Inservice Inspection (ISI) Program; (2) ascertain whether the ISI data files are complete and the data are within the previously established acceptance criteria; (3) ascertain whether the licensee's disposition of adverse findings and subsequent re-examination is consistent with regulatory requirements; and (4) ascertain whether the licensee is utilizing the services of a third party inspection agency, as required.

The inspectors reviewed the list of completed ISI examinations performed during the first refueling outage (91RF) for the first period of the first 10-year interval for Unit 1. Licensee personnel informed the inspectors that 437 components were examined during the first outage and 891 components have been scheduled for the remainder of the period. The percent complete at the end of the first 3-year period was projected to be 33 percent of the 4016 required components for the first 10-year interval. The inspectors requested the records for eight examinations selected from the list of completed examinations. The selection included different examination methods and a variety of components and piping systems.

The first record package reviewed was for the ultrasonic examination of one-third of the reactor vessel closure head ring to disc weld, TBX-1-1300-2. The examination was satisfactorily performed, as specified in the ASME Section XI Inservice Inspection Program Plan for the first interval, and included the weld from stud hole No. 1 to stud hole No. 18. The ultrasonic examination of Weld TBX-1-1300-2 was performed using the 0-degree straight beam scan; the 45-degree shear wave scan, in both the axial and circumferential directions; and the 60-degree shear wave scan, in both the axial and circumferential directions. The examinations performed were in accordance with the requirements of the procedure for ultrasonic examination of ferritic steel vessels, TX-ISI-210, Revision 0. The examination record listed the examination limitations as lug and shroud with 13 percent of the volume not examined. The inspector was informed that additional examination limitations that were not in place during the preservice inspection, such as the shroud, were being identified and incorporated into relief requests for submittal to the office of Nuclear Reactor Regulation.

The second record package reviewed was for the visual examination of the reactor vessel head instrumentation port column conoseal bolting, TBX-1300-75. The examination was satisfactorily performed, as specified in the ASME Section XI Inservice Inspection Program Plan for the first interval, using the procedure for visual examination, TX-ISI-8, Revision 1.

The third record package reviewed was for the liquid penetrant examination of the control rod drive housing weld, TBX-1-1300-A-67. This examination was substituted for the examination designated as control rod drive weld, TBX-1-1300A-75 in the ASME Section XI Inservice Inspection Program Plan for the first interval. The examination was performed using the procedure for liquid penetrant examination, TX-ISI-11, Revision 2.

The fourth record package reviewed was for the ultrasonic and liquid penetrant examinations of a 10-inch diameter, Class 1, pipe to elbow weld, TBX-1-4102-3, in Line 10-RC-1-021-2501R-1 of the reactor coolant system. The ultrasonic and liquid penetrant examinations were satisfactorily performed as specified in the ASME Section XI Inservice Inspection Program Plan for the first interval. The ultrasonic examination of Weld TBX-1-4102-3 was performed using the 45-degree shear wave scan, in both the axial and circumferential directions, in accordance with the procedure for ultrasonic examination of similar and dissimilar metal welds in austenitic stainless steel piping systems, TX-ISI-207, Revision 0 with Field Change Notices (FCNs) 1 through 3. The liquid penetrant examination of Weld No. TBX-1-4102-3 was performed using the procedure for liquid penetrant examination, TX-ISI-11, Revision 2.

The fifth record package reviewed was for the ultrasonic and liquid penetrant examinations of a 10-inch diameter, Class 1, pipe to elbow weld, TBX-1-4102-4, in Line 10-RC-1-021-2501R-1 of the reactor coolant system. The ultrasonic and liquid penetrant examinations were satisfactorily performed as specified in the ASME Section XI Inservice Inspection Program Plan for the first interval. The ultrasonic examination of Weld TBX-1-4102-4 was performed using the 45-degree shear wave scan, in both the axial and circumferential directions, in accordance with the procedure for ultrasonic examination of similar and dissimilar metal welds in austenitic stainless steel piping systems, TX-ISI-207, Revision 0 with FCNs 1 through 3. The liquid penetrant examination of Weld TBX-1-4102-4 was performed using the procedure for liquid penetrant examination, TX-ISI-11, Revision 2.

The sixth record package reviewed was for the preservice ultrasonic examination and inservice liquid penetrant examination of a 12-inch diameter, Class 2, nozzle to pipe weld, TBX-2-2520-24, in Line 12-RH-1-033-601R-2 of the residual heat removal system. The ultrasonic and liquid penetrant examinations were satisfactorily performed as specified in the ASME Section XI Inservice Inspection Program Plan for the first interval. The ultrasonic examination of Weld TBX-2-2520-24 was performed using the 0-degree straight beam scan and the 60-degree shear wave scan, in both the axial and circumferential directions, in accordance with the procedure for ultrasonic examination of similar and dissimilar metal welds in austenitic stainless steel piping systems, TX-ISI-207, Revision 0 with FCNs 1 through 3. The examination record listed the examination limitation as being a stiffening ring with 5 percent of the volume not examined. The liquid

penetrant examination of Weld TBX-2-2520-24 was performed using the procedure for liquid penetrant examination, TX-ISI-11, Revision 2.

The seventh record package reviewed was for the ultrasonic and liquid penetrant examinations of a 6-inch diameter, Class 1, valve to pipe weld, TBX-1-4103-1, in Line 6-SI-1-089-2501R-1 of the safety injection system. The ultrasonic and liquid penetrant examinations were performed as specified in the ASME Section XI Inservice Inspection Program Plan for the first interval. The ultrasonic examination of Weld TBX-1-4103-1 was performed using the 60-degree shear wave and 70-degree longitudinal wave scans, in the axial direction, in accordance with the procedure for ultrasonic examination of similar and dissimilar metal welds in austenitic stainless steel piping systems, TX-ISI-207, Revision 0 with FCNs 1 through 3. The examination record listed the valve, under the heading of examination limitations, as the reason for not performing the examination from both sides. The liquid penetrant examination of Weld TBX-1-4103-1 was performed using the procedure for liquid penetrant examination, TX-ISI-11, Revision 2.

However, during review in the Region IV office, it was noted by the inspectors that circumferential scans of Weld 1 on Sketch TBX-1-4103, which is a requirement of both the procedure and ASME Code, were not performed on October 22, 1991, by the inservice inspection contractor. This failure to comply with ASME Code Section XI, Appendix III-4430 and Procedure TX-ISI-207, "Ultrasonic Examination of Similar and Dissimilar Metal Welds in Austenitic Stainless Steel Piping Systems for Comanche Peak Units No. 1 & 2," Revision 0 with FCNs 1 through 3, paragraph 6.2.1 was identified as an apparent violation of Criterion V of Appendix B to 10 CFR Part 50 and the quality assurance description found in Chapter 17.2 of the Final Safety Analysis Report (445/9204-01). The failure of licensee personnel to identify this test deficiency during a dual review of the inservice inspection data indicates an inadequacy in the overview process. The inspectors reviewed recent audit and surveillance reports of the inservice inspection contractor. The last audit was performed in 1990 and had no findings. Five quality control surveillances had been performed during the last outage. These surveillances were performed on five different welds to a checklist and had no findings.

The licensee subsequently initiated ONE Form No. FX-92-155 to document the failure to perform circumferential scans. The ONE Form documented the problem as a failure to identify an examination limitation. The inspectors took issue with the identification and disposition of the problem as an examination limitation question. A review by the inspectors of the preservice examination report found that circumferential scans had been performed on August 19 and 20, 1982, which established that circumferential scans were possible. An examination limitation is considered to be a condition (i.e., valves, weld crown, flanges, etc.) associated with the weld under examination which limits or restricts complete scanning of the required volume. The licensee revised the disposition of the ONE Form to indicate that the circumferential scans had been omitted and would be performed during the next outage.

The October 22, 1991, report from the last outage on Weld 1 on sketch TBX-1-4103 had sketch information which conflicted. One sketch, "Profile of the Examination Volume," showed a knee or hip in the weld crown and the other sketch, "General-Indication Data," did not show such a condition. The presence of such a

transition in the weld crown could make for an examination limitation because of probe lift off when traversing the weld crown. The accuracy of the sketches will be verified during performance of the circumferential scans in the next outage.

The inspectors and licensee personnel reviewed additional ultrasonic examination reports from the last outage in order to establish whether the omission of the circumferential scans was an isolated case. The inspectors also reviewed the preservice data for the counterpart weld in Unit 2. No additional examples of omitted examinations were noted during this review. The Unit 2 configuration was documented as being significantly different, in that three closely adjacent welds were identified to be present. Verification of the correctness and inspectability of the depicted weld configuration is considered an inspection followup item (446/9204-01).

The eighth record package was for the leakage testing of the Class 1 pressure boundary piping. The leakage test was satisfactorily performed for the first refueling outage as specified in the ASME Section XI Inservice Inspection Program Plan, using the procedure for ASME Section XI pressure testing, Testing Manual Procedure No. EGT-167, Revision 0. The inspectors verified that selected portions of the Class 1 piping were included in the test boundary and the visual examination of the piping was performed while the system was at the operating pressure and temperature. The piping selected for this review was the Loop 1 hot leg and the A train of the residual heat removal system.

In addition to the above examinations, the inspectors selected two work packages from the list of repair and replacement activities performed during the first refueling outage for Unit 1. The first work package documented the modification to a Class 2 pipe support, FW-1-094-001-S62R. The work package included the work order, C910010187; the weld data record, COSG91-473, which documented the required ASME Section III visual examination of the completed weld; the ASME Section XI Repair & Replacement form, STA-731; the visual examination report for the VT-3 preservice inspection; and the drawing changes for the pipe support, Design Change Notice 1896, Revision 0. The second work package documented the repair welding of a grinding gouge in the bonnet of a 2-inch, Class 2 globe valve identified as 1FW-0228. The work package included the work order, C900007837; the repair process sheet, 91-CP-0028, which documented the ASME Section III required visual examination of the completed weld; and the ASME Section XI Repair & Replacement form, STA-731, which required no additional examinations of the weld repair to the bonnet.

During review of the above record and work packages, the inspectors verified that the examination reports were retrievable, complete, legible, and signed by personnel certified as Level II examiners. The inspectors also verified that qualifications for these contract Level II examiners, as well as, the results for the above examination had been reviewed and approved by the Operations Quality Control Level III examiner as required by the ASME Section XI Program, NQA 2.26, Revision 2, and Document Change Notice No. 1. The inspectors noted that the examination reports were also signed as having been reviewed by the ISI Coordinator and the Authorized Nuclear Inservice Inspectors. The materials used in performing the ultrasonic and liquid penetrant examinations were found to be certified for sulfur and halogen content which met the procedure requirements of the applicable nondestructive examination procedure. With the exception noted

above, the inservice inspection records clearly documented that the nondestructive examinations required by the Technical Specifications, the ASME Code, and the ISI Program were performed and evaluated by qualified personnel. The work packages were found to be well documented and consistent with the requirements of the procedure for ASME Section XI repair and replacement activities, STA-731, Revision 3, and Procedure Change Notices STA-731-R3-1 through STA-731-R3-3.

4. EXIT INTERVIEW

Exit interviews were conducted on January 24 and February 11, 1992, with the personnel denoted in paragraph 1. At the exit interview, the inspection findings were summarized. No information was presented to the inspectors that was identified by the licensee as proprietary.