

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF SPECIAL PROJECTS

NRC Inspection Report: 50-445/87-36
50-446/87-27

Permits: CPPR-126
CPPR-127

Dockets: 50-445
50-446

Category: A2

Construction Permit
Expiration Dates:
Unit 1: August 1, 1988
Unit 2: Extension request
submitted

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

Facility Name: Comanche Peak Steam Electric Station (CPSSES)
Units 1 and 2

Inspection At: Comanche Peak Site, Glen Rose, Texas

Inspection Conducted: November 4, 1987, through January 5, 1988

Inspector: *H. S. Phillips* 2-9-88
H. S. Phillips, Senior Resident Date
Inspector, Construction

Reviewed by: *H. H. Livermore* 2-9-88
H. H. Livermore, Lead Senior Date
Inspector

Inspection Summary

Inspection Conducted: November 4, 1987, through January 5, 1988 (Report 50-445/87-36; 50-446/87-27)

Areas Inspected: Routine, unannounced safety inspection including
(1) applicant actions on previous inspection findings;
(2) applicant action on 50.55(e) deficiencies; (3) applicant action
on IE Bulletins; and (4) general plant inspections.

Results: Within the areas inspected, no violations or deviations were identified. Previous inspections identified weaknesses in TU Electric systems for handling 50.55(e) construction deficiencies and IE Bulletins as discussed in paragraphs 3 and 4. During this inspection, the NRC evaluated the documentation and actions concerning construction deficiencies and IE Bulletins. TU Electric has improved the systems and they appear to be adequately controlling and addressing all past and present deficiencies and IE Bulletins issued to date.

DETAILS1. Persons Contacted

- *W. H. Benkert, Staff Assistant Manager, Operations Quality Assurance (QA), TU Electric
- *R. D. Best, Nuclear Operations Inspection Report Item Coordinator, TU Electric
- *D. N. Bize, EA Regulatory Compliance Supervisor, TU Electric
- *M. R. Blevins, Manager, Technical Support, TU Electric
- *M. D. Gaden, CPRT, IT Corporation
- *P. E. Halstead, Manager, Quality Control (QC), TU Electric
- *T. L. Heatherly, EA Regulatory Compliance Engineer, TU Electric
- *O. W. Lowe, Director of Engineering, TU Electric
- *L. D. Nace, Vice President, Engineering & Construction, TU Electric
- *D. E. Noss, QA Issue Interface Coordinator, TU Electric
- *D. M. Reynerson, Director of Construction, TU Electric
- *M. J. Riggs, Plant Evaluation Manager, Operations, TU Electric
- *A. B. Scott, Vice President, Nuclear Operations, TU Electric
- *C. E. Scott, Manager, Startup, TU Electric
- *C. R. Smaney, Unit 1 Assistant Project Manager, TU Electric
- *M. R. Steelman, CPRT, TU Electric
- *P. B. Stevens, Manager, Electrical Engineering, TU Electric
- *B. B. Taylor, Nuclear Operations, Maintenance Manager, TU Electric

The NRC inspectors also interviewed other applicant employees during this inspection period.

*Denotes personnel present at the January 5, 1988, exit interview.

2. Applicant Action on Previous Inspection Findings (92702)

- a. (Closed) Unresolved Item (445/8514-U-02; 446/8511-U-01): None of the existing procedures for 50.55(e) system reporting addressed file content or a method for showing completed corrective actions. (This item was also identified as ID Recommendations 35 and 36 in Enclosure 1 to the Stello memorandum, "Implementation of Recommendations of Comanche Peak Report Review Group", dated April 14, 1987.) The NRC inspector reviewed procedures that were implemented after this matter was documented. NEO CS-1, Revision 0, dated November 1, 1985, addressed the content of the report and record retention. Revision 1, dated November 13, 1986, provided more detailed instructions and in addition, discussed the tracking for corrective action. In 1987, the procedures for reporting 50.55(e) deficiencies were further improved in NEO 9.01 (CS-1), ECE 9.01, and ECE 9.01-1. In NRC Inspection Report 50-445/87-09; 50-446/87-07

(paragraph 5.c), the NRC inspectors reviewed TU Electric's third-party review of procedures and implementation which included the 1985 and 1986 procedures referenced above. Neither the third party nor the NRC identified violations or deviations. The present procedure for reporting is satisfactory. This item is considered closed.

- b. (Closed) Unresolved Item (445/8514-U-03; 446/8511-U-02): TU Electric's Significant Deficiency Analysis Report (SDAR) files did not contain sufficient information to determine whether or not the SDAR was reportable or nonreportable. (This item was also identified in ID Recommendation 37 of the previously referenced Stello memo in paragraph 2.a) During this reporting period, TU Electric presented 21 SDAR files to the inspector for inspection. The SDAR files, described in paragraph 3, contained sufficient documentation showing how deficiencies are identified as reportable or nonreportable. In addition, a recent inspection 50-445/87-27, 50-446/87-20 included an NRC evaluation of the manner in which hardware deficiencies are identified as reportable or nonreportable. The NRC inspector has no further questions.
- c. (Closed) Unresolved Item (445/8516-U-01; 446/8513-U-01): TJ Electric task force to review 50.55(e) files. (This item was also identified in ID Recommendations 38 and 39 of the previously referenced memo. See paragraph 2.a) In 1985, two NRC inspectors documented several unresolved and open items regarding the applicant's construction deficiency reporting system as required by 10 CFR Part 50.55(e) including procedures, records and corrective actions (see paragraph 3). In a January 1986 management meeting conducted between NRC RIV and TU Electric, TU Electric made a commitment to form a task force that would review all of the previous files concerning 50.55(e) deficiencies that were classified as significant and, therefore, reportable. In addition, this effort would assure that corrective action commitments in 50.55(e) reports to the NRC were met or new dates would be established. Where necessary, field verification of corrective action concerning hardware would be accomplished.

The NRC inspector reviewed the TU Electric 50.55(e) Task Force effort and documented the results in NRC Inspection Report 50-445/87-10; 50-446/87-08; however, at that time, a sufficient sample was unavailable for review. During this inspection, 20 SDAR packages concerning individual construction deficiency reports were ready for NRC review. Seventeen of 20 SDAR files were found to be

complete. Three remain open pending receipt of additional information.

This item is considered to be closed based on the above and information contained in paragraph 3.

- d. (Open) Unresolved Item (445/8516-U-02; 446/8513-U-02): TU Electric Task Force (TTF) to review IE Bulletin (IEB) files for completeness and appropriate action. (This item was also identified as ID Recommendations 41 and 43 in the previously referenced Stello memo in paragraph 2.a) NRC inspectors have previously inspected TU Electric's system for receiving, distributing, and reporting on IE Bulletins. These inspections were documented in NRC Inspection Reports 445/84-07, 446/84-06; 445/84-22, 446/84-07; 445/84-29, 446/84-10; and 445/85-16, 446/85-13. The November 1985 NRC Inspection Report 50-445/85-16, 50-446/85-13 raised a number of concerns as to whether all IEB issues were adequately addressed relative to hardware modification or replacement. During the 1985 inspection, the NRC inspector found it difficult to confirm that hardware had been replaced or reworked because the project records did not index to IEB files and IEB files typically made no reference to project engineering or deficiency and corrective action documents in the QA records system. IEB files were also incomplete and were not stored with QA records. The NRC inspectors could not readily retrieve these records (without undue delay) and then confirm hardware modification or replacement. In January 1986, NRC Region IV (RIV) management met with TU Electric management to discuss these concerns. TU Electric informed NRC RIV management that they intended to develop better files and place them in a central location. This matter was considered unresolved pending the review of the files and resultant actions to be completed by a TU Electric task force.

NRC Inspection Report 50-445/86-06; 50-446/86-04 (February - March 1986) determined that the previous NRC inspections referenced above identified incomplete files but mainly consisted of reviews of the administrative handling of IEB files for the period 1975 - 1984 for Units 1 and 2. As a result, the NRC inspector reviewed and identified IEBs 75-05, 75-06, 76-06, 77-04, 77-05, 77-06, 77-08, 79-01, 79-28, 80-18, 81-02, 81-03, 83-05, and 84-03 that appeared to require either repair, rework, replacement, or an engineering evaluation. Therefore, these IEBs and documented corrective actions were selected for more detailed inspection and considered open pending an NRC field inspection of selected hardware and engineering evaluations.

TU Electric recently completed their review of 117 IEBs issued to date. The NRC inspection of IEBs and details of the results of this inspection are documented in paragraph 4. In summary, all IEB files (except for 19 IEB's which were incomplete for various reasons) were reviewed as all contained additional information not available during previous inspections. See paragraph 4 below for details. This unresolved item remains open pending the completion of this review.

- e. (Open) Open Item (445/8516-O-05; 446/8513-O-05):
50.55(e) files not stored in either the permanent vault or temporarily stored in fire rated file cabinets. (This item was also identified as ID Recommendation 39 in the previously referenced memo in paragraph 2.a) The NRC inspector verified that Procedures NEO CS-1, Revision 0, through the currently applicable corporate Procedures NEO 9.01 (CS-1) dated September 25, 1987, specify record retention requirements. Records are currently stored in accordance with these procedures which state that records shall be transmitted to the Permanent Plant Records Vault after the final 50.55(e) report is transmitted to the NRC. The NRC inspector observed that both 50.55(e) and IE Bulletin records are now kept in fire rated cabinets to protect such records prior to transmittal to the vault. However, the corporate procedure (NEO 2.13, Revision 2) does not address the temporary storage requirements of ANSI N45.2.9, Draft 11, Revision 0. The NRC inspector considers this item open.
- f. (Closed) Open Item (446/8623-O-02): Traveler discrepancies. During an NRC inspection, an open item was identified regarding instances where travelers were not completed in accordance with Project Procedure CP-CPM-6.3, and it was noted that similar deficiencies were previously identified in NRC Inspection Report 50-445/86-20; 50-446/86-17. In response, TU Electric provided a folder that addressed this issue and pointed out that earlier revisions of the subject procedure did not require the QC inspector to record design document revision level. Rather, it was the responsibility of the controlling organization to verify this each day the package was used. Accordingly, QA concurrence would not be needed except when the traveler was first prepared. The NRC inspector has no further questions on this matter.

3. Follow-up On 10 CFR Part 50.55(e) Applicant Identified Construction Deficiencies (92700)

During this inspection, 20 SDAR packages concerning individual construction deficiency reports (CDRs) were ready for NRC action. Seventeen of the twenty SDAR files were found to

be complete and the corrective action was considered appropriate. The corrective action documentation for SDAR files CP-80-09, CP-82-06, and CP-85-11 was not complete. The following are the results of the NRC review:

- a. (Closed) SDAR CP-77-D, Construction Deficiency (D1-0024): Operation of safeguard actuation reset circuitry. In 1977, TU Electric Letter TXX-2481 stated that they had reviewed IEB 77-02 and concluded that no action was required at the Comanche Peak Site. The same letter referenced a 10 CFR Part 50.55(e) report to the NRC because Westinghouse (W) had considered this deficiency reportable but the Comanche Peak site said no action was required of this site as only correct versions (redesigned) would be used. On the basis of this documentation, this deficiency was closed in NRC Inspection Report 50-445/84-22; 50-446/84-07. TU Electric Letter TXX-6435 dated May 13, 1987, reopened this issue and several other issues as a result of NRC Inspection Report 50-445/85-16; 50-446/85-13 which had questioned corrective action after a review of the SDAR files.

During this inspection, the NRC inspector reviewed TU Electric's final report (TXX-6381 dated June 5, 1987). IE Bulletin No. 77-02 was concerned with Westinghouse AR Relays with latch attachments and IE Bulletin No. 77-03 was concerned with on-line testing of Westinghouse Solid State Protection System.

Both bulletins were concerned with Westinghouse AR Relays. Bulletin 77-02 reported a design deficiency for certain types of Westinghouse AR Latching Relays and was a hardware problem. Bulletin 77-03 was a software problem, identifying modifications to on-line test procedures for the Westinghouse Solid State Protection System (WSSPS), which had to be made in order to detect contact closure failure of the Westinghouse AR Relay which would not normally be detectable by any other means.

In TXX-2481 to the NRC, TU Electric inadvertently concluded that the second bulletin (IE 77-03) covered changes which had to be made to operating procedures only if the relays covered by the first bulletin (IE 77-02) were utilized at the plant. Therefore, they advised that "since we will be receiving only corrected equipment, this augmented testing is not applicable".

After further review, TU Electric concluded that the modification to the procedure was necessary to periodically and completely test the safeguard actuation

reset circuitry. Should any part of the circuit (including any relay) being tested by the modification fail, safety injection could not normally be reset and/or blocked to allow initiation of recirculation.

The NRC inspector reviewed the entire TU Electric SDAR CP-77-D file which contained 22 documents. The corrective steps in a W Technical Bulletin and the IEB were included in the subject operating procedures for "A" and "B" train for Units 1 and 2.

This closes the construction deficiency and the IEBs referenced above.

- b. (Open) SDAR CP-80-09, Construction Deficiency (D1-0057): DeLaval diesel generator pipe supports. The NRC inspector reviewed TU Electric's file, SDAR CP-80-09, which contained 24 correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, and reported to the NRC. The correction of the hardware was completed; however, two questions remain: (1) It is not clear as to why signatures were changed on the nonconformance report, and (2) it is not clear whether the deficiencies in nonconformance reports M81-01000R1 and M82-00581R3 were ever evaluated for 10 CFR 50.55(e) reportability as required. Pending receipt of additional information on these two subjects, the item remains open.
- c. (Closed) SDAR CP-82-09, Construction Deficiency (D1-0079): Undetectable failure in the solid state protection system. The NRC inspector reviewed TU Electric's file, SDAR CP-82-09, which contained 26 correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, corrected, and reported to the NRC.
- TU Electric's final report, TXX-6922, documented modifications to Unit 1 and 2. The modifications were the result of W Field Change Notice TBXM-10605A and TCXM-10578. These changes were implemented by Design Change Authorizations (DCA) 18348 and 19853 for Units 1 and 2.
- d. (Open) SDAR CP-82-06, Construction Deficiency (D1-0273): DeLaval diesel generator auxiliary skid. The NRC inspector reviewed six documents in TU Electric's file, SDAR CP-82-06, which contained correspondence and

corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. As a result of this review, the inspector questioned whether the deficiency was properly identified, evaluated, and reported to the NRC. TU Electric Memo TUQ-1478 stated that linear indications were found in the skids. The memo further stated that these deficiencies should not be included in the 50.55(e) report to NRC. It appeared to the NRC inspector that these deficiencies should have been described in the report. The justification for not reporting these deficiencies is unclear. Only the skids were discussed in the report to the NRC when deficiencies were also found in the auxiliary fuel oil strainer support and suction flange support. Deficiency Reports NCR CM-87-7400-X (which incorporated CDR 87-4801-MC-X; DR C87-1567X), dated September 8, 1987, dispositioned these deficiencies "use-as-is" when rework was originally specified. No justification was documented to show why rework was unnecessary.

This item remains open pending receipt of information concerning these items.

- e. (Closed) SDAR CP-84-28, Construction Deficiency (D1-0135): Rosemount Pressure Transmitter Model 1153B had a potential leakage path between the sensor module and housing. The NRC inspector reviewed TU Electric's file, SDAR CP-84-28, which contained 23 correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, corrected, and reported to the NRC.

The Unit 1 transmitters were swapped with Unit 2 transmitters and the transfer was recorded on permanent equipment transfer forms. The transmitters were reworked by the supplier except for two that TU Electric reworked.

The NRC inspector selected all eight transmitters located in Unit 1 and 2 which were reworked or repaired to verify replacement and that the transfer of serial numbers was accomplished. The transmitters had been correctly replaced.

- f. (Open) SDAR CP-85-11, Construction Deficiency (D1-0153): Instrument fitting improperly installed due to misinterpretation of the drawing. The drawings were supposed to be interpreted that fittings were not allowed between supports if the tubing between bend radii exceeds 11". The drawing note was incorrectly interpreted to not allow fittings between the bend radii if the length

of tubing (between radii) is greater than 11". The NRC inspector reviewed SDAR CP-85-11 file for this 50.55(e) construction deficiency. The file contained 17 pieces of correspondence and 7 corrective action documents (in some cases with attachments). These documents included internal memos, CDRs, nonconformance/inspection reports (NCRs/IRs), and component modification cards (CMCs). Based on this review, the inspector determined that the deficiency was properly identified and evaluated; however, neither the initial CDR (TXX-4451) nor the final CDR (TXX-6673) discussed the safety significance. Only 1 of 49 deficiencies required rework while 48 others were dispositioned "use-as-is", without written justification. This item remains open pending the review of documentation which should include the justification for "use-as-is" and a determination of the safety significance.

- g. (Closed) SDAR CP-85-13, Construction Deficiency (D1-0155): Undetectable failure in engineered safety features actuation system. W Letter NS-TMA-2204 (1980) reported to the NRC that W procedures may be inadequate to test reactor trip breakers when the bypass breakers are in use.

The NRC inspector reviewed TU Electric's file, SDAR CP-85-13, which contained 32 pieces of correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, corrected, and reported to the NRC.

W proposed a procedure to correct these conditions, but because the utility and NRC requested a simpler method, a modification was developed by W to eliminate the possibility of an undetected failure. This modification was made at Comanche Peak and included the mounting of a new switch and meter per W Field Changes TM-10639 and TCM-10601 implemented by Design Modification DM-86-013 and DCA 23881 for Units 1 and 2. The modification eliminated the need to revise the procedure.

The NRC inspector selected a mounting switch on electrical cabinet TBX-ESPPTS-01 located in Unit 1 safeguards building and verified that the modification was made.

- h. (Closed) SDAR CP-85-14, Construction Deficiency (D1-0156): Unauthorized repairs to cable tray hangers. The NRC inspector reviewed all documentation in TU Electric's file, SDAR CP-85-14, which describes the identification, evaluation, and correction of the subject

deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, corrected, and reported to the NRC.

- i. (Closed) SDAR CP-85-19, Construction Deficiency (D1-0161): Use of typical yield stress in conduit span calculations. The NRC inspector reviewed TU Electric's file, SDAR CP-85-19, which contained 30 correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, corrected, and reported to the NRC.
- j. (Closed) SDAR CP-86-14, Construction Deficiency (D1-0208): 6.9kv switchgear breaker jack shaft weld failure. This deficiency was reportedly caused by inadequate vendor welds. All jackshafts were to be replaced by November 1, 1987.

The jackshafts are currently being replaced. TU Electric Report TXX-6341 dated March 16, 1987, which stated that any subsequent reports on this subject, if required, would be reported under a more generic deficiency report (SDAR CP-87-03, "6.9kv Switchgear Installation").

The NRC inspector visually inspected jackshafts that had been receipt inspected by TU Electric personnel.

The NRC inspector reviewed TU Electric's file, SDAR CP-86-14, which contained 36 correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, corrected, and reported to the NRC.

- k. (Closed) SDAR CP-86-16, Construction Deficiency (D1-0210): Embrittlement of Stainless Tubing Caused by Contact With Zinc at Elevated Temperature: This relates to effects that would result if galvanized material came into contact with stainless steel instrument tubing during a fire. There is the possibility of zinc embrittlement on 316L stainless as a result of a fire.

The NRC inspector reviewed TU Electric's file, SDAR CP-86-16, which contained 22 correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified and reported to the NRC. As a result of this deficiency,

Specification 2323-MS-625, Revision 3, was changed to require galvanized material control. TU Electric Final Report TXX-6230 dated January 21, 1987, closed this item out on the basis that it is a part of a generic design review issue initially reported in another CDR report (TXX-4770 dated April 21, 1986, and the most recent report, TXX-6606 dated July 30, 1987).

Therefore, the deficiency that TU Electric identified as SDAR CP-86-16 is closed as it was incorporated under SDAR CP-86-19. The NRC will complete this review when the evaluation of the fire effects is completed.

1. (Closed) SDAR CP-86-33, Construction Deficiency (D1-0227): Stiffness values for Class 1 pipe stress analysis. TU Electric's file, TXX-4831, dated May 28, 1986, informed the NRC that stiffness values used in stress analysis were incorrect.

The NRC inspector reviewed TU Electric's file, SDAR CP-86-33, which contained four correspondence and corrective action documents which describe the identification, evaluation, and proposed correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified and reported to the NRC.

TU Electric Report TXX-6025 dated October 17, 1986, for SDAR CP-86-33 stated that 30% of the existing pipe supports are either overstressed or require modification primarily due to load increases and stiffness. This deficiency was considered to be significant; however, SDAR CP-86-33 was closed because it was incorporated into more generic issues reported to the NRC in SDARs CP-86-36, CP-86-63, and CP-86-72, which are still open. These SDARs will be reviewed by the NRC in a subsequent report.

- m. (Closed) SDAR CP-86-44, Construction Deficiency (D1-0238): Welded attachments to embedded strip plates and minimum separation requirements not reflected in inspection procedures. The NRC inspector reviewed TU Electric's file, SDAR CP-86-44, which contained five correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, and reported to the NRC.

TU Electric Reports TXX-4892 and 4978 dated July and August 1986, identified that out of 800 embedded plate attachments, there were 113 violations of minimum spacing requirements. Report TXX-6035 dated October 20, 1986,

also stated that inspection instructions did not include inspection criteria for separation between loaded embedded plates and Hilti anchor bolts. To preclude repetition, Specification 2323-SS-30, "Structural Embedments," and engineering Instruction CEI-20 would be revised. In turn, Construction Procedure CCP-45, "Permanent and Temporary Attachments to Embedded Plates," was revised. Inspection Procedure QI-QP-11.14-13, "Separation Verification of Attachments to Loaded Embedded Plates," was also developed. As a result of this SDAR, a "Wall Embedments and Beams" (WEB) program was implemented for Units 1 and 2. In Final Report TXX-6261 dated February 13, 1987, TU Electric closed SDAR CP-86-44 by incorporating it into generic SDAR CP-86-04 which will address the implementation of this corrective action.

The NRC inspector considers SDAR CP-86-44 closed based on the above reviews and the review of corrective action implementation which will occur when SDAR CP-86-04 is completed.

- n. (Closed) SDAR CP-86-50, Construction Deficiency (D1-0243): Unistrut spring nuts on instrument supports. The NRC inspector reviewed TU Electric's file, SDAR CP-86-50, which contained 16 correspondence and corrective action documents which describe the identification, evaluation, and proposed correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, and reported to the NRC. TU Electric Report TXX-4986 initially reported a deficiency concerning nut alignment and torque requirements for Unistrut spring nuts on instrument mounts. A final report, TXX-6292, stated that loose connections in Unit 1 were safety significant and drawings and specifications were revised to include torque values. Report TXX-6292 closed this item except for the implementation of a 100% rework that is to be integrated with other instrument issues reported to the NRC in SDAR CP-86-19.

The NRC considers SDAR CP-86-50 closed and will review and evaluate the rework addressed by SDAR CP-86-19.

- o. (Closed) SDAR CP-86-70, Construction Deficiency (D1-0263): Elevated temperature effects on instrument supports and tubing. This deficiency concerned instrument tubing runs and supports designed for a maximum temperature of 122°F when several areas of the plant could exceed 300°F during certain accident scenarios. The NRC inspector reviewed TU Electric's file, SDAR CP-86-70, which contained 11 correspondence

and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, and reported to the NRC.

TU Electric Report TXX-6067 dated October 29, 1986, initially reported this deficiency. The final report, TXX-6220 dated January 16, 1987, stated that the integrity of the tubing could not be assured. The latter report also stated that the existing installations and modifications would be addressed in SDAR CP-86-19 that will consider other instrumentation tubing and support issues.

The NRC considers CP-86-70 closed and will review modifications when SDAR CP-86-19 is presented for closure.

- p. (Closed) SDAR CP-86-59, Construction Deficiency (D1-0251): Inadequate design control concerning engineering evaluations and separation violations for support (EESV) installations as well as inadequate QC procedures which allowed the practice. The NRC inspector reviewed TU Electric SDAR CP-86-59 which contained seven correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, and reported to the NRC.

TU Electric Final Report TXX-6450 determined that EESV forms allowed installation of supports without required design change documents and the QC system accepted this practice. Also, EESVs were not controlled and interdisciplinary evaluation of all areas of design and installation was not assessed. As a result, safety functions of basic components could not be assured during a seismic event. Procedure ECE-3.06-I5 has been established to control spacing violations and 100% reinspection of installations using design/design change documents will be performed. The report closed SDAR CP-86-59 by integrating it into generic SDAR CP-86-04 which will document any required modifications and the implementation.

The NRC inspector considers SDAR CP-86-59 closed based on the above review. The review of corrective action, including modifications, will be reviewed when SDAR CP-86-04 is completed.

- q. (Closed) SDAR CP-86-77, Construction Deficiency (D1-0269): Instrument tubing minimum wall thickness. A

review of specification and procedure requirements revealed an attribute that appears to be in conflict with minimum wall calculations required by ASME Boiler and Pressure Vessel Code, Section III.

The NRC inspector reviewed TU Electric's file, SDAR CP-86-77, which contained 13 correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, and reported to the NRC.

TU Electric Report TXX-6103 dated November 19, 1986, initially reported this deficiency and Final Report TXX-6628 dated January 21, 1987, stated that tubing with 0.035" wall thickness may be insufficient to meet load stress allowables. Had the deficiency remained undetected, the integrity of this tubing could not be assured during accident conditions. The report stated that modifications will be implemented as required to alleviate unacceptable conditions and this work will be reported under generic SDAR CP-86-19.

The NRC inspector considers SDAR CP-86-77 closed in that any modifications will be inspected when generic deficiency SDAR CP-86-19 is ready for closure.

- r. (Closed) SDAR CP-87-20, Construction Deficiency (D1-308): Cracked porcelain connectors on 6.9kv transformers caused by overtorquing. The NRC inspector reviewed TU Electric's file, SDAR CP-87-20, which contained 43 correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, corrected, and reported to the NRC.

TU Electric's Final Report TXX-6669 dated August 27, 1987, stated that this deficiency was caused by overtorquing; that is, a maximum torque value of 20 plus or minus 1 foot pounds was specified in the vendors manual while Traveler EE80-090-0200 specified 40 plus or minus 0.5 foot pounds. Further review determined this was caused by travelers that did not reference the vendor's manual. Four travelers prepared by the same individual erroneously specified the excessive torque value. For the brief period in 1980 when the four travelers were prepared, all travelers were reviewed for overtorquing. It was determined that 17 of 200 were prepared by this individual but no other excessive torquing requirements were found.

The NRC inspector confirmed by reviewing documentation that all 6.9kv transformer insulators were reinspected. In addition, during a previous inspection the inspector reviewed replacement records, observed the replacement of the damaged insulator located in Unit 1 safeguards building, and verified the corrective action. (See NRC Inspection Report 50-445/87-14; 50-446/87-11).

- s. (Closed) SDAR CP-87-74, Construction Deficiency (D 1-0347): Inaccurate measurements of the effective throat of welds in the joints of structural tube steel. The NRC inspector reviewed TU Electric's file, SDAR CP-87-74, which contained seven correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, corrected, and reported to the NRC.

TU Electric Final Report TXX-6740 dated October 2, 1987, referenced project Corrective Action Report (CAR) 087 and stated that the effective weld throat in joints was not properly defined in the design requirements which caused construction and inspection procedures to incorrectly estimate the effective weld throat area. Thus far, analysis has not identified cases where design requirements were not met. Deficiency SDAR CP-87-74 was closed by incorporating it into SDAR CP-87-72 for further action, if necessary.

The NRC inspector considers SDAR CP-87-74 closed and any further review will be accomplished when SDAR CP-87-72 is reviewed.

- t. (Closed) SDAR CP-87-76, Construction Deficiency (D 1-0348): Unapproved splice plate installations resulting in unauthorized field drilled holes in cable trays. The NRC inspector reviewed TU Electric's file, SDAR CP-87-75, which contained five correspondence and corrective action documents which describe the identification, evaluation, and correction of the subject deficiency. Based on this review, the inspector determined that the deficiency was properly identified, evaluated, and reported to the NRC.

TU Electric's final report, TXX-6763 dated September 25, 1987, stated that SDAR CP-87-76 was closed because it was merged into generic SDAR CP-86-52 which would address the final corrective action.

The NRC inspector considers SDAR CP-87-76 closed and correction of this deficiency will be reviewed when SDAR CP-86-52 is reviewed.

No violations or deviations were identified.

4. Applicant Action on IE Bulletins (92703)

This inspection relates to unresolved item 445/8516-U-02; 446/8513-U-02 as described in paragraph 2.d of this report.

During this inspection, the NRC inspector reviewed the work accomplished by TU Electric's IEB Task Force in "Open Engineering and Construction Issues Report," dated December 14, 1987. The TU Electric IEB list contained 117 IEBs, plus revisions, that were issued by the NRC from 1975 to 1988. The NRC inspector categorized the status of these IEBs as not applicable, no response required, or applicable with a requirement to respond to the NRC. In some cases, no response was required but action was taken. All IEB issues had been reviewed by TU Electric; however, 19 IEB files were shown on the TU Electric list as incomplete because no evidence was in file to show the IEB was addressed, or additional documentation was needed, or the original response to the NRC may require revision, or stated commitments had not been satisfied. Those in this category included 76-02, 76-03, 77-01, 77-05/05A, 77-07, 77-08, 79-15 plus revision, 79-18, 79-21, 79-28, 80-06, 80-10, 82-02, 83-05, 84-03, 85-02, 85-03, 87-01, and 87-02.

The following IEBs did not apply to pressurized water reactors or were for a materials licensee: 75-01 plus revision, 75-02, 75-07, 76-01, 76-04, 78-03, 78-09, 78-11, 78-13, 78-14, 79-08, 79-12, 79-19, 79-20, 79-22, 79-26 plus revision, 80-01, 80-02, 80-07 plus revision, 80-13, 80-14, 80-17 plus revisions, 80-25, 82-03 plus revision, 83-02, 84-01, 86-01, and 86-04. The NRC inspector considers these IEBs closed.

The inspector found that the following IEBs required a response and TU Electric's review determined that they either did not use the specific equipment, component, or technique or the issues in the IEB were addressed.

- a. (Closed) IEB 75-03, "Incorrect Lower Disc Spring and Clearance Dimensions in Series 8300 and 8302 ASCO Solenoid Valves": TU Electric Letter TXX-835 stated that the ASCO valves were not used. During this inspection, the NRC inspector confirmed that TU Electric had listed the subject components on a Nuclear Operations Defective Items List (NODIL) to prevent procuring the subject valves.
- b. (Closed) IEB 75-05, "Operability of Category I Hydraulic Shock and Sway Suppressors": The NRC inspector reviewed the IEB file and found that at the time this IEB was received, TU Electric identified only one case which applied; that is, only W planned to utilize hydraulic

shock suppressors. They were to be used in upper lateral supports of the steam generators. At the time the IEB was received, W had not chosen a supplier but TXX-893 provided the design requirements. The NRC inspector reviewed the file and determined that twenty 1000 ksi hydraulic cylinders (snubbers) and accessories were shipped to TU Electric on Purchase Order P-53235. W quality release 29748 showed that the items met design, material, and test requirements. The NRC inspector confirmed that test Procedure MDA-309, Revision 0, dated December 15, 1983, and surveillance Procedure ECE 2.26-I3 addressed the design, testing and surveillance requirements discussed in IEB 75-05.

- c. (Closed) IEB 75-06, "Westinghouse OT-2 Control Switches": The NRC inspector identified this as a hardware issue; that is, to confirm that these switches were never installed. A review by the TU Electric licensing group dated November 23, 1987, confirmed that the sticking problem, caused by an excess flash condition on a molded plunger inside the selector switch mechanism, had been solved prior to the purchase of these switches for the applicant. TU Electric reviewed all problem reports (PRs) that were issued since 1984, the date the PR system was implemented. No sticking problems have been observed after the control switches were installed in 1980. The NRC inspector reviewed the IEB file, containing the above information and confirmed that this deficiency item was on the NODIL which prohibited the purchase of this item.
- d. (Closed) IEB 76-05, "Relay Failures-Westinghouse BFD Relays": This IEB related to an open circuit failure and excessive opening times. TU Electric Letter TXX-1484 stated that the subject relays would not be used. A W letter in file stated that these type relays were not used at Comanche Peak because a solid state protection system is used. The NRC inspector confirmed that the relays were on the NODIL which prohibited buying them. In NRC Inspection Report 50-445/84-07, the file only contained a copy of the IEB. The file now has been supplemented with close out documents.
- e. (Closed) IEB 76-07, "Crane Hoist Control-Circuit Modifications": TU Electric Letter TXX-2089 stated that modifications of cranes used at Comanche Peak would not be necessary. The NRC inspector found that the cranes used are a different design than those identified in the IEB and modifications were not needed.
- f. (Closed) IEB 77-02, "Potential Failure Mechanism in Certain W AR Relays with Latch Attachments": TU Electric Letter TXX-2481 stated that these type relays would not be used. The NRC inspector reviewed this file and found

that these were on the NODIL to prohibit the purchase of these relays.

- g. (Closed) IEB 77-03, "On-Line Testing of the W Solid State Protection System (WSSPS)": TU Electric Letter TXX-2481 dated September 20, 1977, stated that no action was necessary. TU Electric later (June 1987) reported per 10 CFR 50.55(e) that TU Electric had incorrectly concluded that this IEB was not applicable. This IEB is being closed based on NRC follow up on SDAR 77-D and the close out documented in paragraph 3.a of this report.
- h. (Closed) IEB 77-04, "Calculational Error Affecting The Design Performance of a System For Controlling pH of Containment Sump Water Following a LOCA": TU Electric Letter TXX-2645 stated that the Comanche Peak design range of containment sump water following a loss of coolant accident (LOCA) was optimized to minimize the corrosion of aluminum inside containment (alkaline reaction) by planning an upper and lower limit on pH. Upper and lower limits close to 9.0 pH were established to minimize stress corrosion cracking in stainless steel. TU Electric's response was consistent with the pH values in Final Safety Analysis Report (FSAR) Section 6.5.2.2 and Table 6.5-3 which were submitted to the NRC and incorporated into the FSAR.
- i. (Closed) IEB 78-01, "Flammable Contact-Arm Retainers In GE CR120A Relays": TU Electric Letter TXX-2736 stated that the subject relays were not used. G&H, the Architect Engineer (AE), contacted vendors to see if their equipment included such relays and a review determined that the balance of plant safety-related equipment did not include such relays. Westinghouse determined that they were not used in the Nuclear Steam Supply System. The NRC inspector confirmed that the relays were on the NODIL.
- j. (Closed) IEB 78-02, "Terminal Block Qualification": Franklin Institute's Testing of Marathon M-6012 terminal blocks under LOCA conditions resulted in failure. TU Electric Letter TXX-2737 stated that all their terminal blocks were protected and were not the type described in the IEB. This was based on G&H Telex GTT-2016 that said NEMA 4 metal boxes were used inside containment. The NRC inspector confirmed that electrical Specification 2323-ES-100 required termination in boxes and specified acceptable terminal blocks. The NRC inspector also discussed the installation of the blocks with an electrician in the field. He stated that all terminal blocks inside containment are in boxes. Discussions with the NRC electrical inspector confirmed that terminations are made in boxes.

- k. (Closed) IEB 78-05, "Malfunctioning of Circuit Breaker Auxiliary Contact Mechanism - General Electric Model CR105X": This contact, a part of the 480v circuit breaker, failed and caused an inability to shutdown booster fans in the control room air conditioning system. TU Electric Letter TXX-2842, based on G&H, and W inputs, responded that these contacts had not been used at Comanche Peak. G&H surveyed vendors and found that they had not used them. The NRC inspector confirmed that these components were on the NODIL which prohibits their purchase.
- l. (Closed) IEB 78-06, "Defective Cutler Hammer, Type M Relays With DC Coils": This IEB related to relays used in the standby bus voltage sensing circuitry that were found inoperable at an operating reactor. TU Electric Letters TXX-2869, 2908 and 2959 stated that G&H, W, and vendors did not furnish such components to Comanche Peak. The NRC inspector found that the NODIL prohibited the purchase of this equipment.
- m. (Open) IEB 78-08, "Radiation Levels From Fuel Element Transfer Tubes": This IEB resulted from workers receiving radiation during a plant's first refueling outage. The NRC required no response; however, TU Electric closed out this IEB based on compliance with NUREG/CR3961. This bulletin will remain open pending NRC review of the applicant's actions to assure the concerns identified in the bulletin have been adequately addressed.
- n. (Closed) IEB 78-12, "Atypical Weld Material In Reactor Pressure Vessel Welds". This IEB pertained to improper weld material that Babcock and Wilcox (B&W) used to weld reactor vessels. The NRC inspector reviewed this IEB file and found that the vessels at Comanche Peak were manufactured by Combustion Engineering (CE) not B&W. Regardless, TU Electric Letter TXX-3005 referenced CE's generic report on the subject of atypical weld material in reactor pressure vessel welds and both TU Electric and W concluded that CE complied with the ASME Code Specifications.
- o. (Closed) IEB 79-02, "Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts": This IEB was issued as a result of piping support failures observed by an operating licensee. The NRC inspector reviewed this file and found that TU Electric Letter TXX-3086 dated January 4, 1980, closed this IEB based on engineering analysis of base plates used but stated that any significant developments concerning support analysis would be reported. As a result of a recent SWEC review, TXX-6147 dated January 7, 1987, TU Electric updated and

revised the previous response because of a needed clarification and described the criteria used by SWEC in their pipe support requalification effort in Units 1 and 2.

- p. (Closed) IEB 79-04, "Incorrect Weights For Swing Check Valves Manufactured By Velan Engineering Corporation": This IEB resulted from finding incorrect weights (e.g., 225 lbs specified, 450 lbs actual). TU Electric Letter TXX-3000 stated that no 3, 4, or 6 inch diameter Velan swing check valves were used. G&H furnished TU Electric information to document their review for this condition. Westinghouse Letter WPT-3523 reviewed their system and found that Velan valves had not been used; however, a check of Copes Vulcan valves showed that this condition existed in 40 valves. Only 5 valves were more than 20% overweight and discrepancies relative to center of gravity varied from 8 to 12 inches. This resulted in a reanalysis that showed the stresses were below the allowable limit. The W letter also referenced an NRC inspection that was conducted in April 1979 which found the action on Copes Vulcan acceptable. The NRC inspector verified that the Velan valves were on the NODIL.
- q. (Closed) IEB 79-07, "Seismic Stress Analysis of Safety-Related Piping": This IEB resulted from discrepancies between original piping analysis computer codes for analyzing earthquake loads and currently acceptable computer codes. Information was requested by the IEB concerning response spectrum modal analysis and time history analysis. TU Electric Letter TXX-3001 stated the computer program used by G&H, the AE, did not use the algebraic summation of the codirectional spatial components, inter-modal responses, or the codirectional maximum/time dependent responses. Rather, USNRC Regulatory Guide (RG) 1.92, Revision 1, was used. G&H letter (GTN-37697) provided this information to TU Electric and it contained backup information; that is, the use to the ADLPIPE 5 computer program that was included in RG 1.92.
- r. (Closed) IEB 79-09, "Failures of GE Type AD-2 Circuit Breaker in Safety Related Systems": This IEB resulted from the failure of 12 AK-2 circuit breakers. TU Electric Letter TXX-2988 stated that these components would not be used. The NRC inspector reviewed the IEB file and confirmed that this component was on the NODIL.
- s. (Closed) IEB 79-11, "Faulty Overcurrent Trip Devices In Circuit Breakers For Engineered Safety Systems": This IEB resulted from a Westinghouse report that identified the potential failure. TU Electric Letter TXX-3013 stated that no DB-50 or DB-75 circuit breakers, using

dash pot overcurrent trip devices, would be used. The NRC inspector confirmed that this item was on the prohibited purchase list (NODIL).

- t. (Closed) IEB 79-23, "Potential Failure of Emergency Diesel Generator Field Exciter Transformer": This IEB resulted from a problem that was encountered during a 24 hour full load test at an operating plant. An investigation revealed a design error in the General Motors diesel generator. The NRC inspector confirmed that the G&H Letter GTN-40759 stated that DeLaval emergency diesel generators are used at Comanche Peak and this equipment does not have the subject design problem and also attached the results of long duration testing that satisfied the second part of this IEB. The NRC inspector reviewed the TU Electric licensing groups review dated July 1987, that concurred with their first review.
- u. (Closed) IEB 79-25, "Failure of Westinghouse BFR Relays In Safety-Related Systems": This IEB resulted from finding two relays that were stuck in the energized position at an operating plant. Further investigation revealed that the armature was sticking to the armature stop post. TU Electric Letter TXX-3191 stated that these relays were not used on site. This was based on responses from G&H and vendors. The NRC inspector confirmed that these items were on the NODIL.
- v. (Closed) IEB 80-09, "Hydramotor Actuator Deficiencies": This IEB was issued because ITT General Controls reported two actuator models (AH-90 and NH-90) that had incorrect material. TU Electric Letter TXX-3148 stated this vendor did not supply actuators to Comanche Peak and they would not be used. Westinghouse also confirmed they had not and would not use this vendor. The NRC inspector confirmed these items were on the NODIL.
- w. (Closed) IEB 80-16, "Potential Misapplication of Rosemount Inc. Models 1151 and 1152 Pressure Transmitters with Either "A" or "D" Output Codes". This IEB was issued because of transmitters being exposed to excessive over or reverse pressures. TU Electric Letter TXX-3172 stated that no such transmitters would be purchased. The NRC inspector confirmed these items were on the NODIL.
- x. (Closed) IEB 80-19, "Failures of Mercury-Wetted Matrix Relays in Reactor Protective Systems of Operating Nuclear Power Plants Designed by Combustion Engineering". TU Electric Letter TXX-3189 stated that there are no CP Clare Model AG-1011 mercury wetted relays in the reactor protection system at Comanche Peak. Westinghouse Letter WPT-3674 stated they did not use this component and G&H

provided a similar response. The NRC inspector confirmed that this item was on the prohibited purchase list (NODIL).

- y. (Closed) IEB 80-20, "Failures of Westinghouse Type W-2 Spring Return To Neutral Control Switches": This IEB was issued after an operating plant reported a malfunctioning switch. TU Electric letters reported that this switch was used in several systems and documented and described the corrective action in DCAs 9545R2, 11244R1 and 11609R1. This included rewiring: (1) the contact/green light, (2) contact/white light, (3) contact utilizing resistors for correct current flow, and (4) supervision of contacts using existing lights. The NRC inspector reviewed the documentation including the DCAs and confirmed the corrective action was appropriate.
- z. (Closed) IEB 80-21, "Valve Yokes Supplied by Malcolm Foundry Company": This IEB was issued because valve yokes were found cracked at an operating site. TU Electric Letter TXX-3250 stated that this vendor was not used for valves in nonsafety or safety-related systems. W provided a similar response. The NRC inspector confirmed this item was on the NODIL.
- aa. (Closed) IEB 80-23, "Failures of Solenoid Valves Manufactured by Valcor Engineering Corporation": This IEB was issued after Valcor reported solenoid valve failures (part Nos. V70900-21-1; V70900-21-3). TU Electric Letter TXX-3246 stated that no Valcor components were used. This was based on G&H and W responses that said they were not used. The NRC inspector confirmed these items were on the NODIL.
- ab. (Closed) IEB 81-02, "Failure of Gate Type Valves to Close Against Differential Pressure": This IEB and supplement were issued after it was found that 18 inch nominal size valves may not close against differential pressure.

The NRC inspector reviewed this file and learned that TU Electric Letter TXX-3354 to the NRC answered the IEB and stated that W valves are installed at Comanche Peak. The applicant made a construction deficiency report (TXX-3322) per 10 CFR 50.55(e) to the NRC. The final report, TXX-3409, to the NRC summarized interim reports and stated that 3, 4, 6, 8, 10, 12, 14, 16 and 18 inch W valves were affected and W Field Change Notices 10515 and 10537 detailed corrective action. Deficiency Report NCR M-4313 documented all deficient valves, the modification, and stated that the valves would be stroke tested during startup. Deficiency Report NCR M-2679, Revision 0 through 4, was issued on this subject.

Several travelers in this file showed that valves had been modified and W signed off on the traveler. Inspection Report E-23849 documented the modifications per W change notices and the fact that electrical QC and W witnessed these activities. Revision 4 of NCR M-2679 attached motor operated valve testing data sheets (XCP-EE-10).

The NRC inspector also noted that previous NRC inspections had been performed and documented in NRC Inspection Report 50-445/81-18; 50-446/81-18. These onsite inspections were done while these modifications were in process. This item is closed based on the information in the file and the previous NRC inspections.

- ac. (Closed) IEB 81-03, "Flow Blockage of Cooling Water to Safety System By Corbicula SP. (Asiatic Clam) and Mytilus SP. (Mussel)": This IEB was issued after an operating plant failed to meet minimum service water flow rate requirements. TU Electric Letter TXX-3352 stated that detectable levels of the clams were not found. A monitoring program was established by Procedure ENV-211R1. During the cleaning of the component cooling water heat exchangers, a small build up was found subsequent to the initial report. TU Electric initiated a chemical control program and flow rate will be monitored to detect reduced flow rate in the service water side of the heat exchangers. The NRC inspector reviewed the documentation in the IEB file and confirmed that the Senior Resident Inspector has been following TU Electric's program implementation.
- ad. (Closed) IEB 82-04, "Deficiencies in Primary Containment Electrical Penetration Assemblies": This IEB was issued after Consumer Power Company, Union Electric, and Commonwealth Edison submitted 10 CFR 50.55(e) reports to NRC. Deficiencies in Bunker Ramo penetrations included improper lug crimps, incorrect lug types/sizes, loose terminal blocks, wires that separated from lugs with a light tug, and cracks in conductors. TU Electric Letter TXX-3687 documented inspections of conductor terminations (all were replaced) and inspection of conductor epoxy module interface (64 inspected showed no damage), in line butt splices (10% pull tested and 2 of 6 #2 AWG tested failed resulting in the replacement of all #2 AWGs).

Subsequent to the initial corrective action in TXX-3687, Purchase Order CPF-13340-S for Conax Adaptor Module Assemblies resulted in the replacement of the Bunker Ramo penetration assemblies. The NRC inspectors during the last two years, observed this replacement and reviewed QA records. This item is considered closed.

- ae. (Closed) IEB 83-06, "Nonconforming Materials Supplied by Tube-Line Corporation Facilities at Long Island City, New York; Houston, Texas; and Carol Stream, Illinois": This IEB was issued after the NRC received notification that nonconforming materials were supplied by Tube-Line. TU Electric Letter TXX-4299 stated that no vendors other than Gulfalloy had furnished Tube-Line materials.

The inspector verified (by reviewing vendor letters and NCR M-7816R3) that vendors replied negatively and six deficient Tube-Line flanges furnished by Gulfalloy were appropriately corrected.

- af. (Closed) IEB 83-07, "Apparently Fraudulent Products Sold by Ray Miller, Inc.": This IEB was issued because fraudulent products may have entered the nuclear industry's procurement systems. TU Electric Letter TXX-4176 documented a review of 114 purchase orders and no Ray Miller, Inc. products were found. The NRC inspector reviewed vendor responses in the file to confirm the validity of the review.
- ag. (Closed) IEB 83-08, "Electrical Circuit Breakers With An Undervoltage Trip Feature In Use in Safety-Related Applications Other Than The Reactor Trip System": This IEB questioned the adequacy of trip breakers because of failures at Salem 1 and resultant testing. TU Electric Letter TXX-4136 stated that no circuit breakers with "undervoltage trip" feature (except for reactor trip) were purchased for Comanche Peak. The NRC inspector reviewed the file and found that a review by the TU Electric licensing group dated June 17, 1987, confirmed this by reviewing Specification 2323-ES-6 and Line Drawing 2323-E1-0005. Also in paragraph 4.1.8 of test Procedure EGT-706A, R0, it states, "Both manual reactor trip switches properly trip the reactor using both the undervoltage coil trip and the shunt trip features."
- ah. (Closed) IEB 84-02, "Failures of General Electric Type HFA Relays In Use in Class 1E Safety Systems": This IEB was issued because of problems identified in GE Service Advice Letters. TU Electric Letter TXX-4222 stated that the documentation of all Class 1E equipment was researched and no GE type HFA relays were found and nylon or Lexan type relays would not be used because of procurement controls. The NRC inspector verified that detailed reviews and searches had been made for evidence that these relays were not used. Maintenance Procedure MDA-404R3 to control the use of incorrect materials was also on file.
- ai. (Closed) IEB 85-01, "Steam Binding of Auxiliary Feedwater Pumps": This IEB was issued because of reported events

where hot water leaked into AFW systems and flashed to steam, disabling the AFW pumps. TU Electric Letter TXX-4937 dated August 1, 1986, stated that work instructions for keeping a log for monitoring conditions leading to steam binding had been developed and implemented. Specifically, the procedure addressed equipment inspections, procedure for handling steam binding, and continued use of these methods until Generic Issue 93 was resolved. The NRC inspector reviewed the IEB file and determined that operating Procedure ODA-301R6 and log keeping Instruction OWI-104R5 had been developed and implemented to address the subject steam binding.

- aj. (Closed) IEB 85-02, "Undervoltage Trip Attachments of Westinghouse DB-50 Type Reactor Trip Breakers": This IEB was issued after an operating plant tripped at about 80% of full power because of a spurious signal originating from the reactor coolant pump breaker contacts. This IEB required no response from TU Electric; however, the file contained information that showed TU Electric evaluated the subject IEB and determined that Comanche Peak utilized DS-416 reactor trip switchgear. The NRC inspector also confirmed that the DB-50 breaker was placed on the NODIL form and Procedure EGT-706A addresses safety injection actuation testing and acceptance criteria which includes a demonstration of both manual reactor trip switches using both the under voltage coil trip and shunt trip features.
- ak. (Closed) IEB 86-02, "Static "O" Ring Differential Pressure Switches": This IEB was issued concerning series 102 or 103 differential pressure switches supplied by SOR, Inc. because of erratic low water level tripping between 2.4 and 12.2 inches and because high pressure core spray and residual heat removal systems did not properly actuate because of these switches. TU Electric Letter TXX-6433 dated May 11, 1987, stated that an extensive review was conducted to determine if these switches were used at Comanche Peak and that none were used. The NRC inspector reviewed this IEB file and determined that an extensive review was conducted including letters to 13 contractor/vendors. These components were also placed on the NODIL.
- al. (Open) IEB 86-03, "Potential Failure of Multiple ECCS Pumps Due to Single Failure of Air-Operated Valve in Minimum Flow Recirculation Line": This IEB was issued after a design deficiency was found concerning minimum flow recirculation paths for safety injection pumps in W reactors. TU Electric Letter TXX-6087 dated November 12, 1986, stated that Comanche Peak does not have the single failure vulnerability. The NRC inspector reviewed

TU Electric's evaluation in NE-2123 that explained why the safety injection, containment spray, centrifugal charging and residual heat removal pump and piping designs prevent a single failure. This bulletin will remain open pending review by an NRC operations inspector.

In addition to the above IEBs which applied to Comanche Peak, the inspector reviewed the files for IEBs 79-03, 80-03, 80-05, 80-08, and 82-01. The files adequately addressed the specific IEB; however, the NRC plans to perform additional inspection of the hardware changes, evaluations of hardware, and testing.

The corrective action concerning IEBs 78-04 and 79-28 which required the replacement of NAMCO switches was not clear. TU Electric is presently reviewing these IEBs to provide clarification.

No violations or deviations were identified.

5. General Plant Inspections, (50073, 50090, 51053, and 52053)

The NRC inspector performed general inspections of Unit 1 and 2 during the inspection period which included selected accessible rooms of the reactor, safeguards, auxiliary, diesel generator, and electrical/control buildings. During these tours civil, electrical and mechanical activities were inspected. The housekeeping (storage, handling, and protection of equipment inside these buildings) were also inspected.

No violations or deviations were identified.

6. Exit Interview (30703)

An exit interview was conducted on January 5, 1988, with the applicant's representatives identified in paragraph 1 of this report. During this exit interview, the scope and findings of the inspection were summarized.