APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF SPECIAL PROJECTS

NRC Inspection Report: 50-445/88-59
50-446/88-55

Permits: CPPR-126
CPPR-127

Dockets: 50-445
50-446

Category: A2

Construction Permit
Expiration Dates:
Unit 1: Extension request submitted.
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 (CPSES), Units 1 & 2

Inspection At: Comanche Peak Site, Glen Rose, Texas

Inspection Conducted: August 3 through September 8, 1988

Consultant: J. L. Taylor - Parameter

Reviewed by: H. H. Livermore, Lead Senior Inspector — Date: 9-29-88

Inspection Summary:

Inspection Conducted: August 3 through September 8, 1988 (Report 50-445/88-59; 50-446/88-55)

Areas Inspected: Unannounced, resident safety inspection of applicant's actions on previous inspection findings, follow-up on violations and deviations, action on 50.55(e) reports, allegation follow-up, Comanche Peak Response Team (CPRT) issue-specific action plans (ISAPs), the corrective action program (CAP), plant tours, and significant meetings.

Results: Within the areas inspected, one violation was identified. No significant strengths or weaknesses were noted.

DETAILS

1. Persons Contacted

*R. W. Ackley, Jr., Project Manager, Stone & Webster Engineering Corporation (SWEC)
*M. Axelrad, Attorney, Newman and Holtzinger, P. C.
*R. P. Baker, Licensing Compliance Manager, TU Electric
*J. L. Barker, Manager, Engineering Assurance, TU Electric
*H. D. Bruner, Senior Vice President, TU Electric
*W. J. Cahill, Consultant, TU Electric
*J. T. Conly, APE-Licensing, SWEC
*W. G. Counsil, Executive Vice President, TU Electric
*J. C. Crnich, Project General Manager, Ebasco
*G. G. Davis, Nuclear Operations Inspection Report Item Coordinator, TU Electric
*S. H. Freid, Chief Mechanical/Nuclear Engineer, Bechtel
*P. E. Halstead, Manager, Quality Control (QC), TU Electric
*T. L. Heatherly, Licensing Compliance Engineer, TU Electric
*C. B. Hog, Engineering Manager, Bechtel
*R. T. Jenkins, Manager, Mechanical Engineering, TU Electric
*J. J. Kelley, Manager, Plant Operations, TU Electric
*J. E. Krechting, Director of Technical Interface, TU Electric
*O. W. Lowe, Director of Engineering, TU Electric
*F. W. Madden, Mechanical Engineering Manager, TU Electric
*D. M. McAfee, Manager, QA, TU Electric
*J. C. Miller, CPRT, Tenera
*J. W. Muffett, Manager of Civil Engineering, TU Electric
*L. D. Nace, Vice President, Engineering & Construction, TU Electric
*E. Ottney, Representative, CASE
*S. S. Palmer, Project Manager, TU Electric
*J. D. Redding, Executive Assistant, TU Electric
*D. M. Reynerson, Director of Construction, TU Electric
*M. J. Riggs, Plant Evaluation Manager, Operations, TU Electric
*E. J. Schmidt, Radiation Protection Manager, TU Electric
*A. B. Scott, Vice President, Nuclear Operations, TU Electric
*C. E. Scott, Manager, Startup, TU Electric
*S. L. Stamm, Project Engineering Manager, SWEC
*P. B. Stevens, Manager, Electrical Engineering, TU Electric
*J. F. Streeter, Director, QA, TU Electric
*C. L. Terry, Unit 1 Project Manager, TU Electric
*T. G. Tyler, Director of Projects, TU Electric
*R. D. Walker, Manager of Nuclear Licensing, TU Electric
*K. C. Warapius, Project Director, Impell
*J. R. Waters, Licensing Compliance Engineer, TU Electric

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

*Denotes personnel present at the September 8, 1988, exit meeting.

2. Applicant Action on Previous Inspection Findings (92701)

(Closed) Unresolved Item (445/8853-U-02): Flex conduit field verification method discrepancies. Further consideration of this item determined that it was a violation and a notification of such has been made with this report. This item is superceded by 445/8859-V-01 (see paragraph 7) and is closed.

3. Follow-up on Violations/Deviations (92702)

(Closed) Violation (445/8514-V-04): Inspector not certified. As previously reported in NRC Inspection Report (IR) 50-445/88-26; 50-446/88-22, this item remained open pending disposition and closure of Nonconformance Report (NCR) E85-101639, Revision 1 that was reported on November 7, 1985. The NCR was transferred to NCR CE-87-9584 and was in turn transferred to Deviation Report (DR) C-87-3608. Revision 1 to this DR was dispositioned on February 6, 1988, and closed on June 29, 1988.

Although an extensive period of time has passed since this violation occurred and the commodity being inspected (new installation of plant lighting) has since been declassified to non-1E, the DR disposition is acceptable. The inspector in question had been previously certified, but through supervisory oversight continued to perform inspections for a brief period without final sign-off of his annual recertification.

As part of a review of corrective action to prevent recurrence, the NRC inspector verified during this inspection period that computer printouts and updated lists of electrical inspectors' certifications are available and used by supervisors. The inspector considers this violation closed.

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

(Closed) Unresolved Item (446/8712-U-04) and SDAR CP-86-71: Cable pulling tension: The applicant verbally notified the NRC of a potentially reportable deficiency regarding electrical cable pulling on October 2, 1986. This was followed by written interim report letter TXX-6065. The potential deficiency was that allowable cable tension had been exceeded for some cables because cable installation procedures did not address correction factors for vertical cable pulls as well as coefficient of friction for cable pulls into conduits with previously pulled cables. The applicant determined the

issue to be nonreportable and notification was made by letter TXX-88208.

The NRC staff reviewed: (1) the historical revisions of the cable installation procedure, (2) the evaluation results for cable pulling tension calculations and/or testing, (3) the interviews of personnel directly involved with Class 1E cable installation, and (4) quality control inspections. The staff concluded that Class 1E cable pulling construction and inspection procedures are consistent with industry practice and, in general, the related cable pulling operations were performed satisfactorily with regard to workmanship and quality inspections. The NRC inspector also reviewed: the revised cable pulling instructions in ES-100, Revision 3; CAR-93; STIR-CPE-E-002, Revision 0, SWEC cable tension calculations; and other documentation provided with the SDAR CP-86-71 package. Based on the above evaluations and staff conclusions, SDAR CP-86-71 and unresolved item 446/8712-U-04 are closed.

5. Allegation Follow-up (99014)

(Closed) Allegation (OSP-88-A-0050): Required use of test data sheet originals.

Concern Details

The alleger reported that he was prematurely removed from the job site for not following a verbal directive. He was told to accept an attribute of a nuclear instrumentation triax cable inspection based on a copy (not the original) of a required engineering approved test data sheet. The alleger believed he should have had the original test data sheet in the work package.

Assessment

The inspection was to address only the technical aspects of the allegation. In order to evaluate the allegation, the NRC inspector reviewed applicable procedures/records in effect at the time of the allegation as follows:

a. NQA 3.09-3.05, Revision 3 dated May 13, 1988, and DCN-01 dated June 20, 1988, "QC Inspection of Termination Activities." Contrary to alleger's statement, applicable paragraph 6.2.5 does not specifically require that the original test data sheet be present for QC inspection. Discussion with QA management disclosed that this practice is acceptable and the NRC inspector concurs.

b. ECC 2.13-03, Revision 2, dated May 12, 1988, through CDCN-04 dated August 8, 1988, "Construction Work Package Control" (6.7.4). This procedure provides for the issuance of red-lined package inventory cards to the craft for use provided that the required administrative approvals have been obtained. Exceptions to this requirement were documented in DRs C88-03537, C88-03551, and C88-03263; however, review of these DRs indicate that these examples appear to be isolated and that they do not represent a programmatic breakdown.

c. ECC 2.13-04, Revision 1 dated April 15, 1988, construction work package generation allows entries on documents to be made by reproduction or other means (6.2.1). This allows for special work package forms to be produced by "cut and paste" methods then copied for use. Report numbers are then applied to a particular form to provide controls. The inspector has no problem with this process.

d. Construction work packages on NIS triax cables:

ER140493 (vaulted)	EB140700-Z (inprogress-CE gp.)
ER140493-Z (inprogress at Sys. Completion gp.)	EB140701-Z (inprogress-CE gp.)
ER140499,-Y,-Z (vaulted)	EW140591 (vaulted)
ER140490-01 (inprogress at CE gp.)	EW140592 (vaulted)
E4140490,-Z (vaulted)	

Review of these packages and interviews with QC/QE personnel indicate that it is common practice to include copies of test data sheets in several of a common group of packages while one of the group contains the original. For example, the group of three packages ER140499, ER140499-Y, and ER140499-Z had the original only in the base package ER140499. In group ER140592, the base package ER140592 has the original while EW140592-Z and EW140592-01 have copies. For a given cable run, all packages are finally consolidated when vaulted. This practice is acceptable to QA and to the NRC inspector. An allegation that one of the test data sheet copies was unsigned for engineering approval at the time of the incident could not be substantiated.

Additionally, review of SAFETEAM investigation of Concern 11784, QC Internal Investigation Report CQA0276, dated July 19, 1988, and corporate security reports indicate that supervision did address the technical concerns previously raised by the alleger adequately and attempted to smooth

employee relations. Supervision did hold regular QC inspector group meetings to discuss and resolve concerns.

Conclusion

Based on these findings, the NRC inspector feels that the allegation of use of an original test data card has no substance. The inspector could not confirm the allegation of the use of a card not signed by engineering.

6. CPRT ISAPs (51051 and 51061)

The NRC inspector reviewed all electrical ISAPs and previous applicable inspection reports and continued to provide input to the Safety Evaluation Report draft.

7. Corrective Action Program (CAP)

The NRC inspector continued to evaluate implementation of the Post Construction Hardware Validation Program (PCHVP) by accompanying SWEC engineers during performance of various Field Verification Method (FVM) procedures and by review and walkdown of activities previously completed by the walkdown engineers. Follow-up on previously reported items and additional inspections were performed as detailed below:

Electrical Walkdowns (51063)

The NRC inspector witnessed testing of three triax cables for NCRs 88-13360, 88-13363, and 88-13400. Packages were in order and current up to the step in the particular traveler that was being witnessed.

The NRC inspector accompanied SWEC engineers on walkdowns for FVM CPE-FVM-EE-023, "Acquire Data for Cable Percent-Fill Calculations and Identification of Thru-Floor and Thru-Wall Embedded Conduit Sleeves," for rooms 53, 62, and 72 (package 023-SG-790-72-1). No discrepancies were noted.

As previously noted in Unresolved Item 445/8853-U-02 in NRC Inspection Report 50-445/88-53; 50-446/88-49, a room surveillance walkdown evaluation was conducted by the NRC inspector in rooms 150A and 151A for all completed SWEC electrical FVMs. The FVM inspections had been previously completed by quality control inspectors. The NRC inspector found several errors and omissions where the hardware did not agree with the data sheets. The discrepancies were forwarded to the applicant for action. Subsequently, and as a result of the NRC findings, a surveillance of 20 other rooms revealed several more discrepancies in approximately half of the rooms. As a result of the magnitude of this problem, this Unresolved Item 445/8853-U-02 is changed to a violation (445/8859-V-01).

An inspection of trays near penetrations was performed to observe Kapton splices. Trays were uncovered. T14BREC19 had a piece of sandpaper near the splices, apparently from work on a nearby overhead support weld. Two spare Kapton wires were lodged in a gap between tray sections at the splice plate and protruded above the tray edge. T14RREA26, T14BEEG01, and T14REEE02 also had uncovered Kapton splices. Additionally, non-Class 1E trays T13KECW60 and T14KEDN 34 were observed to: (1) have no covers, (2) have splices protruding above tray wall extensions, (3) have temporary ground cables running through tray sections, and (4) have some Kapton leads adjacent to tray edges. Subsequent discussions with the applicant indicated walkdowns were being performed, a cable expert was being brought in, and recommendations/reports would be provided in the near future. Further observations will be made and tracked by NRC Open Item 445/8852-O-08 (see paragraph 9.a).

8. Plant Tours (51063)

At various times during this report period, the NRC inspector conducted inspections of the Unit 1 and common plant areas, auxiliary, and electrical/control buildings. These inspections were conducted to observe work in progress, equipment protection and storage, and general housekeeping activities. No deviations or violations were observed.

9. Significant Meetings (30702)

Messrs. R. Warnick, H. Livermore, J. Taylor, S. Phillips, and S. Burris met with Messrs. P. Stevens and J. Waters on August 18, 1988, to discuss applicant actions/results on various electrical items as follows:

a. Kapton insulation: The applicant stated that IE Notice 87-08 on Limitorque motors was not applicable to the plant because the Kapton in use is jacketed; whereas, the aircraft variety is not. Areas where Kapton is used include electrical penetration assemblies (EPAs), electrical conductor seal assembly (ECSAs), feedwater valve solenoids, Westinghouse hydrogen recombiners, and the Gammametrics neutron flux detector. Applicant walkdowns are in progress to inspect and identify any other areas of Kapton installation. Additionally, breakout areas are protected by tray covers per ES-100. An open item exists to track further results and actions in regards to Kapton usage. (Reference 445/8852-O-08).

b. Refurbished Westinghouse breakers: The applicant investigated and determined that they are not on the distribution list for affected breaker suppliers. The

applicant notes that they also require manufacturer's certifications and are also having local suppliers check on the origin of all non-1E breakers provided.

c. The applicant agreed to follow-up on consideration of NRC's concern regarding use of relays with nameplate ratings less than the required load.

d. Lighting separation: The applicant screened approximately 1100 NCRs that were originated approximately one month on either side of improperly dispositioned NCR-CE-87-10192 and found no further discrepancies. The problem was apparently caused by a rush to close out a room turnover at the time.

e. Panel wiring tyrap support mounts: On closure of SDAR CP-86-69 (see NRC Inspection Report 50-445/88-53; 50-446/88-49) the NRC inspector questioned why the qualification of adhesive-backed plastic mounts inside some cabinets was not addressed. Applicant will follow-up progress on DR C88-03582. (Reference Open Item 445/8853-O-01).

10. Exit Meeting (30703)

An exit meeting was conducted September 8, 1988, with the applicant's representatives identified in paragraph 1 of this report. No written material was provided to the applicant by the inspectors during this reporting period. The applicant did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. During this meeting, the NRC inspectors summarized the scope and findings of the inspection.