

Inspection Summary:

Inspection Conducted: May 3 through June 6, 1989 (Report 50-445/89-33; 50-446/89-33).

Areas Inspected: Unannounced, resident safety inspection of applicant's actions on previous inspection findings, action on 10 CFR Part 50.55(e) deficiencies identified by the applicant, nondestructive testing of containment liner welds, concrete compressive strength testing, and general plant tours.

Results: Within the areas inspected, no strengths or weaknesses were identified. No violations or deviations were identified.

DETAILS1. Persons Contacted

- *M. Axelrad, Newman and Holtzinger
- *D. P. Barry, Senior., Manager, Engineering, SWEC
- *D. Bize, License Support, TU Electric
- *H. D. Bruner, Senior Vice President, TU Electric
- *W. J. Cahill, Executive Vice President, Nuclear, TU Electric
- *H. M. Carmichael, Senior QA Program Manager, CECO
- *J. T. Conly, APE-Licensing, SWEC
- *W. G. Council, Vice Chairman, Nuclear, TU Electric
- *S. Ellis, Performance and Testing, TU Electric
- *P. E. Halstead, QC Manager, TU Electric
- T. L. Heatherly, Licensing Compliance Engineer, TU Electric
- *C. B. Hogg, Engineering Manager, TU Electric
- *R. T. Jenkins, Manager, Mechanical Engineering, TU Electric
- *J. J. Kelley, Manager, Plant Operations, TU Electric
- *J. J. LaMarca, Electrical Engineering Manager, TU Electric
- *O. W. Lowe, Director of Engineering, TU Electric
- *S. G. McBee, NRC Interface, TU Electric
- D. Noss, Licensing, Daniel
- *B. Packo, Licensing Engineer, TU Electric
- *S. S. Palmer, Project Manager, TU Electric
- *P. Raysircar, Deputy Director, Unit 2, CECO
- *D. Real, Dallas Morning News
- *D. M. Reynerson, Director of Construction, TU Electric
- *J. C. Smith, Plant Operations Staff, TU Electric
- *R. L. Spence, TU/QA Senior Advisor, TU Electric
- *J. F. Streeter, Director, QA, TU Electric
- *C. L. Terry, Unit 1 Project Manager, TU Electric

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

*Denotes personnel present at the June 6, 1989, exit meeting.

2. Applicant's Action on Previous Inspection Findings (92701)

- a. (Closed) Open Item (446/8511-O-07): During a reinspection of heating, ventilation, air-conditioning (HVAC) Verification Package I-S-HVDS-005, the Engineering Research Corporation (ERC) inspector identified wrong weld location, undersize welds, and craters in welds to the NRC inspector as being possible deviations. This was identified on out-of-scope observation No. 764 and subsequently on Nonconformance Report (NCR) 85-102033X. The support (No. DH-1-790-2N-1BF) was reworked per CPE-FVM-CS-029 and Construction Operation Traveler DH-1-3201-790-2N-1BF and verified by TU Electric QC on inspection report (IR) 1-0178974, and IR DH-1-790-2N-1BF.

The NRC inspector has reviewed the documents relating to this support, visually reinspected the support and agreed that the required rework (including as-built drawing update) has been performed. No violations or deviations were identified. This open item is closed.

- b. (Closed) Open Item (445/8513-O-18): During a reinspection of HVAC Verification Package I-M-DUPL-040, the ERC inspector identified (1) loose vent lock caps, (2) gasket not in complete contact, (3) insufficient weld length, and (4) gap between companion angle and duct as being possible deviations. Subsequent to this inspection, TU Electric initiated NCR M86-101168SX which directed that the deviating conditions be corrected through the implementation of CPE-FVM-CS-029 and the issuance of Construction Traveler (COT) B-1-801-758-187. These items were then corrected and documented on inspection report B-1-801-758-187-01 and 02. The NRC inspector has reviewed NCR M86-101168SX, COT B-1-801-758-187, IRs B-1-801-758-187-01 and -02, performed a visual inspection of the repaired duct segment and has determined that the issues have been corrected. This open item is closed.
- c. (Closed) Open Item (445/8513-O-20): During a reinspection of HVAC reinspection package I-M-DUPL-040, the ERC inspector identified the close proximity of an instrument tubing support and a bent companion angle bolt as being possible out-of-scope observations. The ERC inspector initiated out-of-scope observation No. 127 for both conditions. Subsequently, NCR M-86-100577X was issued which required rework. All rework was performed per CPE-FVM-CS-029 and COT B-1-758-187. This work was inspected and accepted on IR B-1-758-187-01 and -02. The NRC inspector has reviewed NCR M86-100577X, COT B-1-758-187, IR B-1-758-187-01, IR B-1-758-187-02, reinspected the duct segment and concurred that the out-of-scope findings have been corrected. This open item is closed.
- d. (Closed) Open Item (445/8514-O-32): This item addressed potential deviations regarding exposed bolt holes and inadequate bolt tightening for structural steel member AFCO-MK-D180-1-RB. These conditions were identified by CPRT during an inspection of Verification Package I-S-STEL-95 witnessed by the NRC inspector, and documented by CPRT on Deviation Reports (DRs) I-S-STEL-095-DR1 and I-S-STEL-095-DR2. DR I-S-STEL-095-DR2, inadequate bolt tightening, was identified as invalid as the condition was acceptable per Quality Instruction WI-045, Revision 2. The condition described by DR I-S-STEL-095-DR1 was included in

NCR CM-87-4308, Revision 0 and dispositioned rework. Bevel washers were reinstalled correctly per Construction Traveler CE-89-3039-8902.

The NRC inspector reviewed the above documentation and associated drawings, and concurred with the disposition of NCR CM-87-4308. This item is closed.

- e. (Closed) Unresolved Item (445/8875-U-04; 446/8871-U-02): During an inspection of the Brown and Root (B&R) weld material distribution stations (MDS), the NRC inspector identified the following discrepancies:

- . Untagged and unidentified bare weld rods.
- . Thermometers that appeared to be out of calibration.

TU Electric responded to this unresolved item by revising the procedure for weld filler material control and implementing training for all affected personnel.

The NRC inspector reviewed the revised procedure and has determined that it clarifies the steps to be taken for unidentified bare rods and thermometer calibration. The NRC inspector reviewed the training records and outline associated with the revised procedure and determined that the training given was adequate and was received by the correct personnel.

3. Action on 10 CFR Part 50.55(e) Deficiencies Identified by the Applicant (92700)

- a. (Closed) Construction Deficiencies (SDARs CP-77-10, CP-77-11, CP-78-03, CP-79-07): Each of these construction deficiencies involved errors in the placement of reinforcing steel in concrete structures. The discrepancies included missing dowels, missing rebars, and improper placement of rebars. The NRC inspector reviewed each file and determined that the corrective action was appropriate for the situation, involving either replacement of the missing elements or an engineering justification permitting the configuration as built. The NRC inspector did not observe any indication that the above issues considered collectively suggest a past programmatic breakdown. Rather, it appears that discrepant rebar placements were identified promptly and addressed with proper engineering judgement. These construction deficiencies are closed.
- b. (Closed) Construction Deficiency (SDAR CP-83-05): "Hilti Bolt Cut Off and Welded to Electrical Conduit Support." This SDAR involved a Hilti bolt installation wherein the

bolt was cut off and welded to the back of a baseplate. The SDAR was voided soon after its issuance, but the NRC staff concluded that the NRC should reconsider this SDAR in light of a more recent incident where a Hilti bolt was welded to the front of a baseplate (see NRC Inspection Report 50-445/89-05; 50-446/89-05, Paragraph 2.d). The Hilti bolt welded to the front of the baseplate could only have been discovered by removal of the nut since in all other respects, the installation was normal. In the case of SDAR CP-83-05, the Hilti bolt was cut off flush to the back of the baseplate and could have been detected easily by ultrasonic testing (UT). The reason that this particular bolt was not detected by UT during the completed 100 percent plant survey of Hilti bolts is that the subject baseplate was abandoned. The discovery of this situation was made as the abandoned baseplate was being removed. The NRC inspector has concluded that any similar incidents would have been discovered by UT for all in-service installations and that considering the absence of any such discoveries, the subject case must have been isolated. This construction deficiency is closed.

- c. (Closed) Construction Deficiency (SDAR CP-86-51): "Anchor Bolts Supplied by Hilti." By letter TXX-88195 dated February 4, 1988, the applicant informed the NRC that a deficiency involving the tensile strength of certain sizes of Hilti bolts was a reportable item. Specifically, deeply-embedded 1/2 and 3/4-inch Hilti bolts were observed to have less tensile strength than had been previously specified. The condition was first identified at another nuclear facility and then confirmed by the manufacturer, Hilti, in independent tests. This issue became the subject of IE Information Notice 86-94. The applicant performed tests of their own and revised Design Basis Document (DBD)-CS-015 to reflect the reduced allowable tensile strength of 1/2-inch bolts embedded greater than 4 1/2-inches and 3/4-inch bolts embedded greater than 7 inches. Under the Post-Construction Hardware Validation Program (PCHVP) Field Verification Method (FVM)-075 inspections, as summarized in Project Technical Report (PTR)-003 "Evaluation of Seismic Category I and II Concrete Embedments," the applicant evaluated 594 1/2-inch and 3/4-inch diameter Hilti bolts with deep embedments. The bolts were analyzed by applying the appropriate reduction in tensile capacity as specified in the revised DBD-CS-015. This evaluation determined that all 594 bolts had sufficient capacity to support the design loads with the required safety factor and that no modifications were required. Based on this information, the applicant concluded that further sampling was not necessary.

The NRC inspector reviewed PTR-003, DBD-CS-015, and other information provided in the SDAR file. Previous NRC inspections of FVM-075 (See NRC Inspection Report 50-445/89-05; 50-446/89-05) included a detailed review of several calculations related to this issue which found no discrepancies. The NRC inspector determined that the applicant has taken adequate corrective action to address this issue as it relates to past and future Hilti bolt installations. This construction deficiency is closed.

- d. (Closed) Construction Deficiency (SDAR CP 88-22): "Service Water Discharge Pipe Missile Protection." By letter TXX-88783 dated November 15, 1988, the applicant informed the NRC that a deficiency involving Service Water System discharge pipe missile protection was not a reportable item. The 30-inch service water discharge pipes terminate at the service water discharge structure and are unprotected from projectiles which may impact during a tornado. The applicant's analysis is contained in calculation Nos. 16345-ME(B)-403 and 16345-ME(B)-088. The calculations are based on the assumption that the effective cross-sectional area of the discharge pipe will not decrease to less than 10 percent of its nominal value. The tornado is not expected to project an object larger than a 12" diameter schedule 40 pipe. The NRC inspector visited the discharge structure, considered the likely post-impact configurations, and concluded that the 10 percent assumption was sufficiently conservative for this analysis. Other assumptions of the analysis were likewise conservative, such as using the highest expected service water intake temperature. The NRC inspector reviewed the referenced calculations and concluded that the applicant had taken adequate action to address the original concern. This construction deficiency is closed.

4. Nondestructive Testing of Containment Liner Welds (55050)

During a review of Specification 2323-SS-14, Revision 4, the applicant determined that nondestructive examination (NDE) of full penetration welds to containment liner insert plates had been inadequate. These welds had been visually inspected, but were required by ASME Boiler and Pressure Vessel Code, Section III, to be tested by either the magnetic particle (MT) or liquid-penetrant (PT) method. This deficiency was documented on DR C-87-5161. Design Change Authorization (DCA) 49098, Revision 4 was initiated to either MT or PT the subject welds. The applicant originally opted to MT the welds through the approximately 0.015 inches (15 mils) of paint which had previously been applied. The NRC inspector observed a series of demonstrations attempting to qualify the MT-through-paint methodology for this application. Although the applicant expressed satisfaction with the results, neither

the NRC inspector nor the applicant's QA inspectors considered the demonstrated results to conclusively qualify this special process. Consequently, the applicant agreed to remove the paint from the welds and conduct normal MT tests. The NRC inspector observed a portion of this work and verified that the paint had been adequately removed and that the MT technique met the requirements of ASME, Section V, Article 7.

5. Concrete Compressive Strength Testing (46053)

The NRC inspector reviewed compressive strength test reports for the concrete grout used to pour back a temporary access opening in the Auxiliary building, 790' elevation. The access openings were approximately 8' x 8' in the Auxiliary building outer wall and were used for cleaning and removal of debris from the seismic air gap. The NRC inspectors had previously observed a variety of work associated with several of the access openings including installation of concrete forms, cad-welding, concrete pouring, etc. The compressive strength test results for pours 002-9798-004 and 002-9799-002 at 28 days showed strengths substantially above the minimum required strengths of 4000 psi for the concrete and 6000 psi for the grout. No NRC concerns were identified.

6. Plant Tours (42051C, 46053)

The NRC inspectors made frequent tours of Unit 1, Unit 2, and common areas of the facility to observe items such as housekeeping, equipment protection, and in-process work activities. No violations or deviations were identified and no items of significance were observed.

7. Exit Meeting (30703)

An exit meeting was conducted June 6, 1989, 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.