U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

NRC Inspection Report: 50-445/89-85 50-446/89-85 Permits: CPPR-126 CPPR-127

Dockets: 50-445 50-446 Construction Permit Expiration Dates: Unit 1: August 1, 1991 Unit 2: August 1, 1992

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: November 8 through December 5, 1989

Consultants: J. Birmingham, RTS (paragraphs 3 and 4) W. Richins, Parameter (paragraphs 2, 4, 5, and 6)

Inspector: M. F. Runyan, Resident Inspector, Civil Structural (paragraphs 2, 3, 4, 5, and 6)

12-15-9 Date runz Lead Senior Inspector

Reviewed by:

Inspection Summary:

Inspection Conducted: November 8 through December 5, 1989 (Report 50-445/89-85; 50-446/89-85)

Areas Inspected: Unannounced, resident safety inspection of applicant's actions on previous inspection findings; follow-up on violations/deviations; action on 10 CFR Part 50.55(e) deficiencies identified by the applicant; allegation follow-up; final design reconciliat.on of conduit and cable tray systems; and plant tours.

<u>Results</u>: Within the areas inspected, no weaknesses, strengths, violations, or deviations were identified.

The methodology and execution of the design reconciliation of conduit and cable tray systems appeared satisfactory. Gne minor discrepancy was discovered though unrelated to the reconciliation process itself (paragraph 6).

DETAILS

1. Persons Contacted

*J. L. Barker, Manager, ISEG, TU Electric *D. P. Barry, Senior, Manager, Engineering, Stone and Webster Engineering Corporation, (SWEC) *J. W. Beck, Vice Fresident, Nuclear Engineering, TU Electric *O. Bhatty, Issue Interface Coordinator, TU Electric *M. R. Blevins, Manager of Nuclear Operations Support, TU Electric *H. D. Bruner, Senior Vice President, TU Electric *W. J. Cahill, Executive Vice President, Nuclear, TU Electric *H. M. Carmichael, Senior Quality Assurance (QA) Program Manager, CECO *W. G. Counsil, Vice Chairman, Nuclear, TU Electric *C. G. Creamer, Manager, Unit 1 Completions Engineering, TU Electric *B. S. Dacko, Licensing Engineer, TU Electric *D. E. Deviney, Deputy Director, QA, TU Electric *F. Dunham, QA Issue Interface, TU Electric *C. A. Fonseca, Deputy Director, CECO *S. P. Frantz, Newman and Holtzinger *J. L. French, Independent Advisory Group *W. G. Guldemond, Manager of Site Licensing, TU Electric *T. L. Heatherly, Licensing Compliance Engineer, TU Electric *J. C. Hicks, Licensing Compliance Manager, TU Electric *C. B. Hogg, Chief Engineer, TU Electric *A. Hussin, Director, Reactor Engineering, TU Electric *J. J. Kelley, Plant Manager, TU Electric *J. E. Krechting, Director of Technical Interface, TU Electric *J. L. LaMarcs, Manager of Electrical and T & C Engineering, 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 *S. G. McBee, NRC Interface, TU Electric *J. W. Muffett, Manager of Project Engineering, TU Electric *E. F. Ottney, Program Manager, CASE *S. S. Palmer, Project Manager, TU Electric *C. A. Parker, TU Electric Personnel *P. Raysircar, Deputy Director/Senior Engineer Manager, CECO *D. M. Reynerson, Director of Construction, TU Electric *H. C. Schmidt, Director of Nuclear Services, General Division, TU Electric *A. B. Scott, Vice President, Nuclear Operations, TU Electric *J. C. Smith, Plant Operations Staff, TU Electric *R. L. Spence, TU/QA Senior Advisor, TU Electric *P. B. Stevens, Manager of Operations Support Engineering, TU Electric

*J. F. Streeter, Director, QA, TU Electric

*C. L. Terry, Manager of Projects, TU Electric *O. L. Thero, QTC Consultant to CASE *R. G. Withrow, EA Manager, TU Electric *D. R. Woodlan, Docket Licensing Manager, TU Electric

*J. E. Woods, Assistant Project Engineer, SWEC/CECO

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

*Denotes personnel present at the December 5, 1989, exit meeting.

Applicant's Action on Previous Inspection Findings (92701)

- a. (Closed) Open Item (445/8709-0-01; 446/8707-0-01): This item addressed the adequacy of the final calculations which specify the required minimum separation gaps between Seismic Category I buildings. The NRC inspector reviewed the following SWEC calculations:
 - Calculation 16345-CS(B)-044, Revision 1, "Assessment of Seismic Air Gaps Between Structures."
 - Calculation 16345-CS(C)-098, Revision 1, "Effect of Gap Filler Between Category I Structures on their Dynamic Response."
 - Calculation 16345-CS(B)-258, Revision 0, "Effects of Seal Material on Concrete Structures."

The calculations support the minimum separation gap widths used for the final inspection. In addition, the NRC inspector reviewed Design Basis Document (DBD) CS-019, Revision 2, "Building and Secondary Wall Displacements," and various inspection packages to verify that the correct minimum gap values had been used in the gap inspections. Substantial NRC review of this issue has been documented previously in Comanche Peak SSER 20 and in the review and closure of SDAR CP-85-27 (this report). This item is closed.

b. (Closed) Unresolved Item (445/8938-U-02): This item identified that the applicant did not have in their possession as-built drawings of the 44 site preservice inspection calibration blocks. As a result, the applicant had not verified that the blocks were in compliance with the 1980 ASME Section XI preservice inspection requirements or the 1986 ASME Section XI requirements applicable to future inservice inspections. The blocks are used to calibrate ultrasonic test equipment.

The applicant requested, received, and reviewed all calibration block as-built drawings against the applicable standards. After the reviews and vendor consultations, the applicant concluded that all but two blocks were satisfactory for service. Block TBX-25 was deemed acceptable for preservice inspection but must be replaced for inservice testing. This block contains flat bottom holes as opposed to the notches required by the 1986 Code. Block TEX-40 was not used for preservice inspection (PSI) examinations but will require the addition of 2% notches prior to any standard inservice examinations. The applicant stated that corrective actions for calibration blocks TBX-25 and -40 will not be required for fuel load since the inservice examinations associated with these blocks will not be required until approximately the second refueling outage. The applicant stated that the two blocks will be replaced or modified prior to any future use.

The NRC inspector reviewed all correspondence related to this issue and determined that the applicant had adequately addressed the concern. This unresolved item is closed.

c. (Closed) Unresolved Item (445/8938-U-03): This item identified that forms used for PSI nondestructive examinations (NDE) were different from the forms contained in the controlling procedure, OPS-NSD-101. The applicant concurred that there was a mismatch in the forms but stated that the procedure allowed the use of other similar forms. All forms which were used provided for documentation of the information required by the Code. Since the time of the PSI, Procedure OPS-NSD-101 has been superseded by Procedure TX-OPS-101. The new procedure requires the use of the forms provided therein.

A separate concern identified that the explanation provided in the procedure regarding how to complete the forms was inadequate. The applicant stated that the new procedure (TX-OPS-101) provides a better explanation of how to fill out the forms.

The NRC inspector reviewed Procedures OPS-NSD-01 and TX-OPS-101 and concurred with the applicant's statements concerning this item. This unresolved item is closed.

- Follow-up on Violations/Deviations (92702)
 - a. (Closed) Violation (445/8935-V-01): This violation was issued for the unauthorized substitution of carbon steel Grade 5 bolts for silicon bronze bolts in auxiliary feedwater pump motors. The applicant documented this condition on a deficiency report (DR). Westinghouse design group was queried as to the acceptability of the

substitution. Westinghouse responded that the silicon bronze bolts are the specified material for securing the fans to the rotor and that the carbon steel bolts should be replaced prior to fuel load. The replacement of the carbon steel with silicon bronze bolts is being accomplished in accordance with Nonconformance Reports (NCRs) 89-02548/02547. Further, the applicant has issued Significant Deficiency Analysis Reports (SDARs) CP-89-10 and CP-89-29 to assess the specific effect of the substitution and to address the generic implications of the substitution process.

The NRC evaluation of SDAR CP-89-10 is reported in NRC Inspection Report 50-445/89-78; 50-446/87-78. The NRC evaluation of SDAR CP-89-29 appears elsewhere in this report.

The NRC inspector has reviewed the above documentation and the work orders documenting the replacement of the bolts. Based on this review, the NRC inspector determined that the applicant has implemented satisfactory corrective and preventive actions. Accordingly, this violation is closed.

b. (Closed) Violation (445/8965-V-01): This violation documented seven examples of loose fittings on electrical equipment identified by NRC inspectors in rooms 74 and 198 after final room and area turnover walkdowns of these areas had been completed by the applicant. The applicant admitted that, in some cases, walkdown personnel had not physically checked conduit fittings and fasteners on electrical equipment to ensure that they could not be loosened by hand.

Deficiency Report C-89-1927 was issued in response to this violation. Corrective action included counseling of the individuals involved in the subject walkdowns and a training session for all individuals involved in the room and area walkdown process. Additionally, reverification walkdowns of all rooms that had been previously finalized were conducted to check conduit, boxes, and panels for loose unions, fittings, and fasteners. Identified deficiencies were documented and corrected in accordance with the room and area turnover procedure, ECC 9.11.

The NRC inspector reviewed DR C-89-1927, the applicable training records, and documentation related to the reverification walkdown and concluded that the applicant had appropriately addressed this issue. Subsequent to this violation, NRC inspectors inspected two other rooms in which the turnover process was complete, 54 and 77N, and did not note any similar loose fittings on electrical equipment. This provides indication that the applicant's corrective actions were effective. This violation is closed.

- Action on 10 CFR Part 50.55(e) Deficiencies Identified by the Applicant (92700)
 - (Closed) Construction Deficiency (SDAR CP-85-27, a. Revision 1): "Seismic Air Gap Less Than Design." By letter TXX-4537 dated August 16, 1985, the applicant informed the NRC that a deficiency regarding concrete debris found in the separation gap between the Fuel and Auxiliary buildings was a potentially reportable item. Subsequently, this item was expanded to a deficiency regarding the width of as-built seismic gaps between all Seismic Category I buildings and was determined to be reportable by letter TXX-4650 dated December 17, 1985. The presence of debris in the separation gaps and/or the separation gaps having less than design width could result in a significant and possibly adverse increase in seismic building response. The adequacy of the major plant structures and associated support systems could be impaired during a seismic event.

This reportable item was addressed by the applicant as Comanche Peak Response Team (CPRT) Issue-Specific Action Plan (ISAP) II.c. Previous NRC inspections of this activity are summarized in Comanche Feak SSER 20 dated November 1988. The NRC inspectors concluded in SSER 20 that the issue had been adequately resolved. Final closure of SDAR CP-85-27 is addressed by the closure of Open Item 445/8709-0-01; 446/8707-0-01 in this inspection report. This open item addresses the adequacy of the SWEC calculations that specify the required minimum separation gap widths. This construction deficiency is closed.

(Closed - Unit 1 only) Construction Deficiency b. (SDAR CP-85-29): "Design of Architectural Features." By letter TXX-4552 dated September 12, 1985, the applicant informed the NRC that a deficiency regarding inadequate consideration of nonseismic to seismic interaction effects in the design of architectural features was a potentially reportable item. Subsequently, this item was determined to be reportable and was addressed by the applicant by: (1) ISAP II.d, "Seismic Design of Control Room Ceiling Elements," (2) the Damage Study Program, (3) various specific technical issue reports (STIRs), and (4) the Systems Interaction Program (SIP). A summary of NRC reviews of these activities (with the exception of the SIP) is available in Comanche Peak NUREG-0797 SSER 20. During this report period, the NRC inspector reviewed the following calculations used to evaluate various architectural features as part of the SIP:

- Calculation 16345-CS-(S)-012, Revision 1, "Upgrading of Type IC Handrail Anchorages to TE Safety Class II."
- . Calculation 16345-CS(S)-073, Revision 5, "Natural Frequencies of Sheet Rock Walls and Comparison of CPSES Sheet Rock Walls to US Gypsum Test Cases."
- Calculation 16345-CS(S)-125, Revision 1, "Verification of Test Loads for Upgrading of Handrails to Seismic Category II."
- . Calculation 16345-CS(S)-147, Revision 0, "Seismic Qualification of Missile Resisting Doors."
- . Calculation 16345-CS(S)-149, Revision 3, "Rolling Steel Doors Subject to Seismic Loads."
- Calculation 16345-CS(S)-365, Revision 1, "Tornado Loadings on Doors, Gypsum Walls, and Masonry Block Walls."

The NRC inspector concluded that these calculations adequately qualify the respective hardware. This construction deficiency is closed for Unit 1.

c. (Closed - Unit 1 only) Construction Deficiency (SDAR CP-87-56): "Deficient Pipe Whip Restraints." By letter TXX-88172 dated February 5, 1989, the applicant informed the NRC that construction deficiencies observed in pipe whip restraints were a reportable item. The identified deficiencies included (1) tightness in structurally bolted joints, (2) missing components, (3) levelness/plumbness deviations, (4) missing and damaged cotter pins, (5) improper application of locking devices, (6) missing welds, and (7) incorrect cold gaps between pipes and restraints.

The applicant stated that the cause of the discrepancies was inadequate engineering direction provided for the installation of pipe whip restraints. As preventive action, Specification 2323-SS-16B, "Structural Steel/Miscellaneous Steel," was revised to include more definitive installation, inspection, and acceptance criteria for the installation of pipe whip restraints.

The scope of the corrective action to correct discrepancies in installed pipe whip restraints included a detailed reinspection plan. Those attributes deemed to require reinspection during the Post-Construction Hardware Validation Program (PCHVP) were delineated in Field Verification Methods (FVMs) CPE-SWEC-FVM-EE/ME/IC/CS-086, CPE-SWEC-FVM-EE/ME/IC/CS-089, CPE-SWEC-FVM-EE/ME/IC/CS-090, and CPE-SWEC-FVM-PS-081. The FVM walkdowns have been completed and necessary rework has been completed with the exception of setting some of the cold gaps between pipes and restraints. For those systems which did not reach operating temperature during hot functional testing (HFT), cold gaps will be set during the power ascension phase.

This deficiency was addressed by the applicant as ISAP VII.c, Appendix 29. Previous NRC inspections of this activity are summarized in Comanche Peak SSER 20 dated November 1988. The NRC staff concluded in SSER 20 that the technical issues associated with pipe whip restraints had been adequately resolved. NRC field inspections of pipe whip restraints are documented in NRC Inspection Reports 50-445/88-64, 50-446/88-60; 50-445/88-70, 50-446/88-66; and 50-445/88-76, 50-446/88-72. The NRC inspector reviewed previous NRC inspection activity of this issue, pertinent revisions to Specification 2323-SS-30, other procedural changes, and personnel training records and concluded that the applicant had adequately resolved the problems identified with pipe whip restraints. This construction deficiency is closed for Unit 1 only.

- d. (Closed Unit 1 only) Construction Deficiency (SDAR CP-87-120): "Tornado Missile Barriers." By letter TXX-88036 dated February 4, 1988, the applicant informed the NRC that a deficiency involving tornado missile barriers was a reportable item. This issue was previously reviewed by the NRC inspector (NRC Inspection Report 50-445/89-74; 50-446/89-74) and left open at that time pending the applicant's completion of work in progress. During this report period, the NRC inspector reviewed the construction documents for three of the remaining six DCAs and concluded that the work is now complete. This construction deficiency is now closed for Unit 1.
- (Closed Unit 1 only) Construction Deficiency e. (SDAR CP-87-127): "Overstressed Platform and Support Structure Design." By letter TXX-88016 dated January 6, 1988, the applicant informed the NRC of a reportable issue involving overstressed platforms and supports. During the design validation process, the applicant identified that three Seismic Category I platforms, five Seismic Category II platforms, the recirculation sump screen support structure, and the cable spreading room support structure exceeded stress limits specified in FSAR Sections 3.8.3.3 and 3.8.4.3. These discrepancies resulted from the failure of the original design organization to properly apply specified loading conditions. The deficiency was judged to be limited to Seismic Category I and II steel structures. The design validation program

provided a complete survey of these structures; therefore, all similar errors by the design organization should have been identified.

To address each overstressed condition, the applicant issued a design control authorization (DCA) to authorize the appropriate modification. In all, 167 DCAs were issued for this construction deficiency and 165 of these DCAs were closed at the time of the NRC review.

The NRC inspector reviewed the SDAR file and in detail DCA 57942, Revision 7; DCA 64544, Revision 2; DCA 85916, Revision 1; and DCA 87563, Revision 1. Additionally, the NRC inspector field-verified DCA 57942, Revision 7. The NRC inspector concluded that the applicant had taken adequate corrective action for this discrepancy. This construction deficiency is closed for Unit 1.

f. (Closed - Unit 1 only) Construction Deficiency (SDAR CP-88-14): "Structural Load Verification of Seismic Category I Structures." Previous NRC inspection of this construction deficiency is documented in NRC Inspection Reports 50-445/89-65, 50-446/89-65 and 50-445/89-76, 50-446/89-76.

The NRC inspector had expressed two concerns regarding the analysis of a concrete slab in the Auxiliary building. The applicant was asked to justify the use of 100 pounds per square foot as a typical live load for the "realistic condition" during plant operation. The applicant subsequently issued Calculation Change Notice (CCN-01) to Calculation 16345-CS-(S)-639 in response to the NRC concerns. Based on Table 1203.1 of the "Standard Building Code/1985," the applicant stated in CCN-01 that the live loads anticipated on slab elements in the plant would not exceed those specified for "Light Manufacturing," which has a design live load requirement of 100 pounds per square foot. Further, the applicant stated that congestion due to pipes and supports limits the potential application of live loads to an extent greater than that represented in the base calculation.

A second concern involved the method by which the live load was reduced to reflect areas on the slab which were inaccessible for live loads. Instead of applying 100 pounds per square foot over the accessible areas, a reduced live load (in this case, 67 pounds per square foot, based on 67 percent accessibility) was applied uniformly over the entire slab. Within CCN-01 referenced above, the applicant revised the calculation to apply the full 100 pounds per square foot over the accessible areas. The change in moment and shear was negligible with respect to the structural acceptability of the slab.

The NRC inspector reviewed Calculation 16345-CS(S)-639, CCN-01, and concluded that the additional information adequately resolved the two noted concerns.

The NRC inspector also reviewed Calculation 16345-CS(S)-658, a room flooding analysis for all buildings addressing the structural integrity of slabs and walls. The NRC inspector questioned the governing load case used in this calculation (dead load plus hydrostatic load) inasmuch as flooding could also involve pre-existing live loads and thermal/ pressure loads from high energy line breaks. The applicant prepared a revision to the base calculation dated November 22, 1989 (not numbered or fully reviewed when presented to the NRC), which included the additional loads noted above. Due to a large margin in the base calculation, the revised calculations established that the slabs and walls were still adequate for this loading case. The NRC inspector reviewed and concurred with this calculation.

All questions regarding this construction deficiency have been resolved. This construction deficiency is closed for Unit 1.

- g. (Closed Unit 1 only) Construction Deficiency (SDAR CP-88-24): This construction deficiency concerned certain nonconforming aspects of installed instrument tubing restraints and supports. The applicant's corrective actions for this deficiency were reviewed and determined to be acceptable by the NRC as reported in NRC Inspection Report 50-445/89-63; 50-116/89-63. However, the construction ieficiency remained open pending the completion of FVM 069 and 086. Those FVMs are complete as documented in memorandums SWTU-13379 and SWTU-13970. NR inspections have determined that these FVMs were adequately implemented. Accordingly, this construction deficiency is closed for Unit 1.
- h. (Closed Unit 1 only) Construction Deficiency (SDAR CP-89-17): "Control Room HVAC System Damper Leakage." Previous NRC inspection of this item is documented in NRC Inspection Report 50-445/89-65, 50-446/89-65. The construction deficiency was left open in this previous report pending completion of design modifications incorporated in DCAs 28966, 84546, 84696, and 84697. These modifications are now complete. The NRC inspector reviewed the subject DCAs and confirmed that all issues associated with this item have been resolved. This construction deficiency is closed for Unit 1.

1.

(Closed - Unit 1 only) Construction Deficiency (SDAR CP-89-029): "Inappropriate Design Changes." By letter TXX-89798 dated November 15, 1989, the applicant informed the NRC that a deficiency involving unauthorized design changes was not a reportable item. This SDAR encompassed corrective action committed to by the applicant in response to Violation 445/8935-V-01, which involved substitution of bolts on an auxiliary feedwater (AFW) pump motor without documentation as required on a DCA. Instead, the bolt substitution was documented on a maintenance engineering evaluation (MEE), which is not a design change document. The MEE procedure has been cancelled and the applicant stated that any future design changes will be documented on DCAs or NCRs as required.

As part of the corrective action for the above violation, the applicant committed to evaluate all issued MEEs to determine the safety significance of any other unauthorized design changes which may have been documented on these forms. Greater than 600 MEEs were reviewed and of these, 45 were determined to potentially involve unauthorized design changes. An NCR was issued for each of the 45 questionable MEEs to evaluate whether the change resulted in a degradation of safety margin. Any MEE which involved an actual design change was documented on an authorized design change document. Only one Unit 2 MEE was identified as potentially safety significant and will be evaluated in association with the closure of this construction deficiency for Unit 2.

The NRC inspector reviewed the documents enclosed in the SDAR file and each of the 45 NCRs mentioned above. The NRC inspector concurred that the safety margin for Unit 1 was not adversely affected by the unintended use of MEEs to effect design changes. Further, the abolishment of this procedure should preclude recurrence of this problem. This construction deficiency is closed for Unit 1.

5. Allegation Follow-up (99014B)

 a. (Open) Allegation (OSP-89-A-68): An allegation was received by the NRC staff that delineated 14 concerns. Each concern was numbered sequentially in the order it was presented. Six concerns were addressed in NRC Inspection Report 50-445/89-76; 50-446/89-76. The following two concerns were addressed during this report period.

Concern No. 11

The alleger stated that a filler plate used for a conduit support on conduit C24B09408 exceeded design specifications and measured 1 5/8 inches instead of 1 1/4 inches.

Review

The NRC inspector reviewed the as-built drawing of conduit C24B09408 and inspected the three supports used on the conduit. All filler plate dimensions were in agreement with the as-built drawing. In addition, no dimensions measured approximately 1 5/8 inches or 1 1/4 inches as stated by the alleger. The NRC inspector discussed the use of the as-built drawings with the applicant. The adeguacy of the dimensions on the as-built drawings are verified by calculations for each conduit.

Conclusion

The alleger's concern is not substantiated.

Concern No. 14

The alleger stated that the pipe hanger support procedure requires a minimum clearance of 1/32 inch to a maximum of 1/8 inch, whereas a pipe hanger in the Auxiliary building, room 179, at elevation 802' had a clearance of 3/16 inch.

Review

The NRC inspector located two supports, one of which was most probably the support observed by the alleger. The supported pipe had been insulated and was therefore inaccessible for inspection The NRC inspector reviewed documentation associated with QC inspection of the gaps on these supports (Construction Operations Traveler [COT] AS86-4387-1-4900 and NCR M-25199N) and observed that the gaps had been inspected to the proper requirements.

Conclusion

The alleger's concern is not substantiated.

b. (Closed) Allegation (OSP-89-A-83): An allegation was received by the NRC staff involving falsification of documentation. The alleger brought his concern to SAFETEAM after notifying the NRC. The alleger stated that he was asked by his foreman to torque bolts on a pipe hanger. However, QC had already signed the package stating that the bolts had been properly torqued. Both the alleger and the foreman realized that the bolts had not been torqued because the torque wrench which had been checked out to perform this work was defective and had been returned "unused." The alleger claimed that the foreman asked him to correct the mistake without proper documentation. The alleger refused and felt his impending layoff was tied to his refusal.

Review

SAFETEAM referred the investigation of this concern to TU Electric Corporate Security. The subject foreman denied that he had asked the alleger to falsify documentation or perform any other unauthorized activities. The foreman stated that after becoming aware that a QC inspector had mistakenly signed off the bolt torguing, he held the package two days until the same QC inspector returned to work. At that time, he sent a different individual to torque the bolts and had the same QC inspector line out his incorrect signature and resign the package in the same The package was then vaulted. Corporate Security block. concluded that the QC inspector's error was inadvertent and that the foreman had not attempted to cover up the situation. The manager, Quality Control, reviewed the case and concluded that an inadvertent error had occurred and that proper corrective steps had been taken. The subject OC inspector no longer works at CPSES. SAFETEAM concluded that the alleger's concern was unsubstantiated.

Conclusion

The NRC inspector reviewed the SAFETEAM file of this issue and concluded that Corporate Security had sufficiently investigated the incident and that SAFETEAM had come to a justifiable conclusion.

Final Design Reconciliation of Conduit and Cable Tray Supports (48055, 50075)

During this report period, the NRC inspactors reviewed the applicant's programs to validate and reconcile the final design of conduit systems (conduits and conduit supports) and cable tray systems (cable trays and cable tray hangers) Previously, the NRC inspector reviewed the applicant's program for HVAC duct and duct supports (see NRC Inspection Report 50-445/89-76; 50-446/89-76). The applicant's corrective action program (CAP) included field walkdowns of the hardware associated with these systems and the generation of design validation calculations. Final design reconciliation was then implemented primarily to address changes in system configuration and design criteria that have occurred since the initial design validation calculations were generated and to incorporate the as-built conditions determined by the field walkdowns.

a. Conduit Systems

The applicant performed updates to all design validation packages for the changes in criteria. Design changes based on the field walkdowns were also addressed in the design validation packages. Numercus changes were requested 10

primarily due to construction activities using DCA-CRs (Design Change Authorization - Confirmation Required). A representative selection of the most important DCA-CRs were confirmed by the applicant using reanalysis. Examples include:

- Support relocation (conduit span increase/decrease).
- . Replacement of support by an equivalent support with different geometry.
- Hardware change prompted by hardware availability (e.g., member size, anchor size).
- . Modification to the support geometry (e.g., brace location).
- Base plate size and anchor location modification.
- . Replacement of a weld pattern by an equivalent one.
- Conduit attachment location.

All of the initial 1200 DCA-CRs closed during the reconciliation were confirmed "use-as-is" without any modifications. Based on this and the review of the representative selection of the most important remaining DCA-CRs, the applicant concluded that the balance of DCA-CRs are enveloped and closed and that the system designs are adequate.

The NRC inspector reviewed the selection process, the criteria, and the following calculations: 15904, 20416, 20015, 11305, 10534, 34160, 09454.

One discrepancy was identified in calculation 11305 concerning the incorrect comparison and acceptance of an actual clamp load (159 lbs.) to an allowable clamp load (100 lbs.) on page 16. The applicant provided a reference to an existing supplemental calculation which adequately uddressed this discrepancy. The NRC inspectors concluded that the discrepancy was both isolated and insignificant. Based on the above review, the NRC inspector concluded that the conduit system final design reconciliation process effectively addressed design validation for these systems.

No violations, deviations, or open items were identified.

b. Cable Tray Systems

The NRC inspectors reviewed the applicant's program for the reconciliation of the final design of cable tray systems as described in the following documents:

- Calculation M-147, Revision 0, "Reconciliation of Reactor Building and Safeguards Building Cable Tray Hangers."
- Calculation M-148, Revision 0, "Reconciliation of Cable Tray Hangers Attached to the Unit 1 Cable Spread Room Frame."
- Calculation M-149, Revision 0, "Reconciliation of Cable Tray Hangers in Auxiliary Building, Electrical Control Building, Diesel Generator Building, Fuel Handling Building and Cable Spread Room."
- Calculation M-150, Revision 0, "Reconciliation of AUX/EC Cable Tray Hangers/Clamps in RSM Scope."

The program was similar in approach and execution to the programs used for HVAC and conduit systems. Based on the above review, the NRC inspectors concluded that the cable tray system final design reconciliation process effectively addressed design validation for these systems. No open items or violations were identified.

7. Plant Tours (42051C)

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.

8. Exit Meeting (30703)

An exit meeting was conducted December 5, 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.