APPENDIX E

U. S. NUCLEAR REGULATORY COMMISSION REGION IV

COMANCHE PEAK RESPONSE TEAM ACTIVITIES INSPECTION REPORT

NRC Inspection Report: 50-445/85-14 50-446/85-11

Permit: CPPR-126 CPPR-127 Category: A2

Dockets: 50-445 50-446

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

Facility Name: Comanche Peak Steam Electric Station (CPSES), Units 1 and 2 Inspection At: Glen Rose, Texas Inspection Conducted: October 1-31, 1985 Resparen Inspectors: E. Ellershaw, Reactor Inspector, Region IV CPSES Group (paragraphs 1, 2.a, 3, 6.b, 6.e-6.g, 6.j, 7.e-7.u)

C. J. Halle, Reactor Inspector, Region IV CPSES Group

(paragraphs 1, 2.b, 4, 5, 6.c-6.d, 6.h-6.i)

2/28/86

3/3/86

S. aleter A. R. Johnson, Reactor Inspector, Region IV Date CPSES Group (paragraphs 1, 6.a, 7.3-7.e)

Consultants: EG&G - R. Bonnenberg, J. Dale, L. Jones, A. Maughan, W. Richins, R. VanderBeek

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Parameter - J. Birmingham, D. Brown, J. Gibson, K. Graham, D. Jew,

Reviewed By: J. Barnes, Group Leader, Region IV CPSES Group Date

Approved:

7. R. Westerman, Chief, Region IV CPSES Group

3/3/86 Date

Inspection Summary

Inspection Conducted: October 1-31, 1985 (Report 50-445/85-14; 50-446/85-11)

<u>Areas Inspected</u>: Nonroutine, unannounced inspection of applicant actions on previous inspection findings, followup on alleged contractor improprieties, Comanche Peak Response Team (CPRT) procedures and instructions, and CPRT issue - specific action plans (ISAPs). The inspection involved 2363 inspector hours onsite by 5 NRC inspectors and 11 consultants. A summary of NRR and IE audit activities is provided in paragraph 4.

<u>Results</u>: Within the four areas inspected, two violations (revision of drawings without required review and approval actions, paragraph 2.a; signing of inspection reports by a noncertified electrical inspector, paragraph 8.c) and four deviation (ERC equipment/service requests not controlled as committed, paragraph 6.a; inadequate ERC document review and procedure criteria with respect to nonrecreatable and inaccessible inspection attributes, paragraphs 8.c and 8.e; failure of ERC document reviewers to detect a lapsed electrical inspector certification and to record required information in a verification package, paragraph 8.c; and inspection attributes being attested to as acceptable by ERC inspectors which were found by subsequent NRC inspection to be unacceptable, paragraphs 8.e, 8.1, and 8.u) were identified.

DETAILS

1.	Per	son	S C	onta	act	ed
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- D. L. Andrews, TUSI Director of Corporate Security
- J. Arros, TERA Civil/Structural Issue Coordinator
- C. I. Browne, Project Manager, R. L. Cloud & Associates, Inc.
- *R. E. Camp, Assistant Project General Manager, Unit 1 (Impell Corp.)
- J. Finneran, TUGCO Lead Pipe Support Engineer
- *S. M. Franks, Special Projects and Technical Support Lead (Impell Corp.)
- *J. B. George, TUGCO Vice President, Plant General Manager
- *P. E. Halstead, TUGCO Site QC Manager
- J. L. Hansel, ERC QA/QC Review Team Leader
- C. K. Moehlman, TUGCO Project Mechanical Engineer
- *C. Killough, TUGCO Supervisor, Operations Quality
- M. Cbert, ERC TRT Issue Coordinator
- A. Patterson, ERC Engineering Supervisor
- C. Spinks, ERC Inspection Supervisor
- * . G. Tyler, TUGCO CPRT Program Director
- *C. H. Welch, TUGCO QC Services Supervisor
- R. Werner, Manager, Safeteam
- *P. B. Stevens, TUGCO Project Electrical Engineer
- G. Benfer, Bahnson Services Co. Site QA Manager
- U. W. Snow, Brown & Root (B&R) QA/QC Coordinator
- T. Wright, TUGCO Civil Engineer
- *G. W. Ross, ERC Onsite QA Representative
- J. Adam, ERC Supervisor, Safety Significance Evaluation Group
- D. M. Kim, Principal Mechanical Engineer, Gibbs & Hill (G&H)
- T. Brandt, TUGCO Quality Engineering Supervisor
- J. R. Honekamp, TRT Issues Manager, TERA
- P. Turi, TERA Issue Coordinator
- G. Purdy, B&R QA Manager
- J. E. Young, ERC Issue Coordinator
- J. R. Gelzer, ERC Issue Coordinator
- S. L. Crawford, ERC Issue Coordinator
- P. Thomas, ERC Supervisor, Inspection Group Services
- D. Alexander, ERC Supervisor, Hardware Issues
- P. Amoroso, ERC Supervisor, Hardware Collective Evaluation
- R. Melton, TERA Documentation Coordinator
- J. Mallanda, CPRT Electrical Review Team Leader

*Denotes those persons who attended the exit interview.

The NRC inspectors also contacted other CPRT and applicant employees during this inspection period.

2. Applicant Actions on Previous Inspection Findings

a. (Open) Open Item (445/3511-0-04): This item remains open pending the review and assessment of the dispositions relating to the 12 deviating skewed welds in NF supports.

Further review with respect to the status of this item has resulted in the NRC's identification of a violation.

Buring ERC's reinspection of skewed welds in Unit 1, undersize conditions were identified and documented on B&R nonconformance reports (NCRs) as early as June 1985. CPSES Station Administration Manual Procedure No. STA-405 requires that all documented nonconformances, in which "use-as-is" dispositions are recommended, be forwarded to TUGCO Operations Results Engineering Group for review to determine if as-built documentation changes are needed. Further, CPSES Nuclear Operations Engineering Manual Instruction No. NOE-201-5 requires that proposed drawing changes be submitted to Operations for review, approval, and authorization to distribute the revised drawing.

The NCRs associated with the undersize skewed welds are identified as XI-2, -3, -4, -5, -6, -7, -8, -10 and -11. The applicable pipe support drawings were revised by TUGCO Nuclear Engineering (TNE) to reflect the undersize weld conditions. Recalculations were performed to support the use of the welds without rework or repairs. While the NCRs were not formally dispositioned, this action, in effect, provided a "use-as-is" disposition. However, TUGCO Operations did not review and approve the drawing revisions. In fact, in most cases TUGCO Operations did not initiate their own NCR to address these conditions until after TNE had revised and distributed the drawings. As of the end of this report period, TUGCO Operations NCRs have not been dispositioned. The NRC inspector was informed by TUGCO Operations personnel that their review has found a number of mathematical errors in the TNE recalculations, thus precluding a dispositioning of the TUGCO NCRs.

The failure of TNE to acquire TUGCO Operations review and approval prior to initiating drawing revisions is a violation (445/8514-V-03).

b. (Closed) Open Item (445/8513-0-06): Provisions for familiarizing QC inspectors with changes in QC inspection procedures. Details on this subject are contained in paragraph 7.d of this appendix.

3. Followup On Alleged Contractor Improprieties

The NRC inspector performed a followup inspection with respect to the identification by a local newspaper of alleged contractor improprieties. The inspection was performed to ascertain whether the alleged

improprieties, if substantiated, could adversely affect safety-related components and systems. NRC review of this subject revealed that the alleged improprieties, which consisted of eight specific items, had been reviewed by the TUGCO Safeteam and by the TUSI Director of Corporate Security. NRC examination of the items, certain of which were substantiated, resulted in a determination that there was no instance where any substantiated item had any impact with respect to safety-related components or systems.

The NRC considers this item to be closed.

- NRR and IE Audit/Inspection Activities
 - a. <u>NRR</u>: A site inspection was performed during October 10-11, 1985, pertaining to civil/structural issues. Audits were performed on October 25, 1985, at Ebasco and Stone and Webster, New York, pertaining, respectively, to cable tray/conduit supports and small bore piping review. A site audit was performed of homogeneity of construction processes during October 9-10, 16-18, and 28-31, 1985.
 - b. <u>IE</u>: An inspection of Design Adequacy Review was initiated at TERA. Bethesda, Maryland, during October 28 through November 4, 1985. A site inspection of QA program procedures was performed on October 20-24, 1985.

Copies of reports for these activities will be placed in the Public Document Room upon completion.

- 5. CPRT Procedures and Instructions
 - a. Implementation of ERC Procedures and Instructions
 - (1) Audit of CPP-012 (QA/QC Interface with Constructor/TUGCO)

The TUGCO interface consists of three systems used to request equipment or services, copies of documents, or technical information. Each is handled by a different process, as defined in CPP-012.

(a) Written requests for equipment and services are used by the QA/QC inspectors to request from TUGCO or B&R any equipment or services needed to perform an inspection. These requests are included in the completed inspection package.

An NRC inspection of CPP-012 implementation showed that the requests for equipment and services were being processed in

accordance with CPP-012 requirements, with the exception that the QA/QC Records Administrator was not controlling these requests as required by Section 4.4.6 of the procedure. No logs or files were maintained by the QA/QC Records Administrator. This item is an NRC deviation (445/8514-D-01). During this inspection, the NRC inspector concluded from information provided by ERC personnel that a log of requests was not being maintained by the QA/QC Inspection Supervisor, as required by Section 5.1.3 of CPP-012. Subsequent to this report period, the NRC was informed by ERC management that this understanding was incorrect and that the required log was, in fact, being maintained in accordance with CPP-012 requirements. Followup inspection confirmed that the ERC management information was correct. It was ascertained, however, during this followup inspection that verification package numbers were being used to identify requests in the log. This practice permits more than one request to have the same identification number and is contrary to procedural requirements for use of unique identification numbers. TUGCO has been requested by the transmittal letter for this inspection report to include this subject in their response to deviation 445/8514-D-01.

(b) Document requests are used to request copies of TUGCO or C&R documents required by the ERC inspectors. Section 5.2.2 of CPP-012 requires that the QA/QC issue coordinators maintain a file of these requests. The files of two issue coordinators were inspected by the NRC, and found to be satisfactory.

No NRC deviations were identified.

(c) Technical information requests are prepared by a member of the QA/QC Review Team when a request for clarification or additional information is required. These, after supervisory approval, are sent to the responsible TUGCO liaison engineer by the QA/QC Records Administrator, who also logs and files the requests. The logged item is closed and the request filed when the information arrives from the TUGCO liaison engineer. Two specific requests were traced by the NRC inspector through the Construction Sampling Reinspection Engineering Group and Records Administration, and found to have been satisfactorily processed and routed.

No NRC deviations were identified.

(2) CPP-018(QA/QC Interface with the Design Adequacy Program)

An NRC inspection confirmed that documents transmitted from ERC to TERA for information only were transmitted by the QA/QC Records Administrator. Documents requiring feedback from TERA are logged and transmitted by the ERC Hardware Issues Supervisor.

The TERA Design Adequacy Program Interface Coordinator receives the ERC documents, distributes them and files one copy. Items requiring feedback to ERC are logged in and the date of reply is also logged. The NRC inspector selected four documents from the ERC log and was able to satisfactorily trace them through the ERC and TERA logging and filing systems.

No NRC deviations were identified.

(3) CPP-010 (Preparation of Deviation Reports) and CPP-016 (Safety Significance Evaluations of Deviation Reports)

Deviation Reports (DRs) are generated during the hardware and documentation inspection process. These DRs are assessed for validity then forwarded for further processing to the Safety Significance Evaluation Group (SSEG) and TUGCO.

The NRC inspector confirmed that the process, which is described in CPP-018 and CPP-016, is being followed. A sample of twenty ORs was selected from the SSEG tracking system. Each DR was verified to be correctly processed and documented by checking each for: (a) signatures of originator, first reviewer, and second reviewer; (b) transmission of the DR to FUGCO and SSEG, (c) transmission of the DR to the proper distribution; (d) filing of the DR in the verification package; and (e) runfirmation from TUGCO or B&R that they had assigned an NCR number to the DR. Revision 3 to CPP-010, which was released on October 11, 1985, incorporates provisions for revision, cancellation, or invalidation of a DR.

No NRC deviations were identified.

(4) CPP-020 (Out-of-Scope Observations)

Review team personnel are instructed in CPP-020 to report apparent out-of-scope observations by three-part memorandum to TUGCO. In the NRC inspection of this subject, it was determined that the ERC Supervisor, Hardware Collective Evaluation, assigned a serial number on receipt of the three-part memorandum and sent two of the copies to TUGCO. The remaining copy is filed and logged, with identification made of the record receiving date, date sent to TUGCO, and date of TUGCO feedback. Six memoranda were reviewed by the NRC inspector to verify implementation of this process.

No NRC deviations were identified.

(5) Inspection of ERC-QA-15 (Performance of Project Surveillance), ERC-QA-18 (Administration of Quality Assurance Auditing), and ERC-QA-20 (Conduct of Programmatic Audits)

The ERC Project Assurance Manager was contacted in an NRC inspection of these procedures. The following documents were produced: (a) surveillance plan for QA/QC Review Team dated September 14, 1985; (b) surveillance status report dated October 21, 1985; and (c) a surveillance schedule.

The Project Assurance Manager maintains an active file and status log of surveillance reports from the planning stage until the recommendations are implemented. The surveillance reports are distributed to the corporate office, to the QA/QC Review Team Leader (RTL), the Hardware Issues Supervisor, and the organization being surveyed. The reports are maintained as open items until all recommendations are implemented. At that time, the report files are closed and transmitted to the Records Administrator.

The NRC inspector reviewed four surveillance reports of which three were closed (no deficient items) and one was still open with one deficiency being processed. Each report file contained a three-part memo to the QA/QC RTL, a surveillance checklist report, and a surveillance checklist.

No NRC deviations were identified.

The NRC reviewed the first quarterly corporate audit of the CPRT activities. The audit was performed September 23 through 26, 1985, and the report was issued October 15, 1985. This corporate audit identified one deficiency. A response to the audit was issued on October 21, 1985, providing corrective/preventive actions. The second quarterly audit is being planned at this time, but a specific date has not been set.

No NRC deviations were identified.

b. TERA Procedures and Instructions

TERA has issued 16 of the 19 planned design adequacy procedures (CAPs). Review of these procedures indicates that six apply, in

whole or part, to the ISAPs defining TERA onsite activity (civil-structural, mechanical, and miscellaneous). These are DAP-2, "Documentation and Tracking of Issues and Discrepancies"; DAP-14, "Design Adequacy Program Records"; DAP-15, "Training and Qualification"; DAP-16, "Audits"; DAP-17, "Corrective Actions"; and DAP-19, "Processing and Review of Information Between Quality of Construction, QA/QC Adequacy Program and Design Adequacy Program."

DAP-14 and DAP-15 were audited by the NRC inspector and found to comply with the applicable CPRT Policies and Guidelines.

The NRC has inspected the implementation in this area and the results of implementation of UAP-2 is reported in NRC Inspection Report No. 50-445/85-13; 50-446/85-09.

DAP-16 and DAP-17 are applicable to the onsite TERA effort; however, these procedures are implemented by offsite personnel reporting to the Design Adequacy Program Quality Assurance Manager. This offsite TERA activity is being inspected and reported by the NRC Office of Inspection and Enforcement.

DAP-19 applies to the information interfaces between the Design Adequacy Program and ERC Quality of Construction and QA/QC Adequacy Program groups. This DAP was audited by the NRC inspector in conjunction with the implementation audit of ERC Procedure CPP-018, as described in paragraph 5.a.(5) above.

No NRC deviations were identified.

- c. Implementation of CPRT Policies and Guidelines
 - <u>Electrical Issues</u>: The electrical issues in the ISAPs are the responsibility of one RTL. The CPRT Policies and Guidelines establish the methods for accomplishing these tasks.

The purpose of the NRC inspection was to determine if the processing of the electrical issues complied with the requirements set by the CPRT Policies and Guidelincs. The inspection covered four of the guidelines; i.e., (a) central and working files, (b) safety significance evaluations (SSEc), (c) developing sampling plans and random samples for TRT issues, and (d) policy on testing and inspection personnel used in third party verification activities. This report completes the NRC's initial inspection of programmatic implementation in the area of electrical issues. (a) Working Files: The working files system and subject matter breakdown being used is as described in the CPRT guidelines. A file index is available for each ISAP which defines the contents of each file folder. A computer based data system is being established for these files. Two files were checked for compliance with the CPRT Policies and Guidelines.

No NRC deviations were identified.

(b) SSE: The NRC inspector reviewed the processing of ISAP No. I.b.1 that resulted in one item which will require a SSE. This SSE will be included in the review process for all SSEs generated by the CPRT.

No NRC deviations were identified.

(c) Sampling Plan: The sampling plan used on ISAP No. I.a.1 was reviewed by the NRC inspector. It complied with the guidelines and was well documented. Inspection confirmed that the information on the random sampling selection was turned over to ERC, who prepared the inspection packages, performed the inspections, wrote inspection reports (IRs) for satisfactory and unsatisfactory conditions, and after checking and signoff by two levels of supervision transmitted the IRs to the electrical issues RTL.

The RTL sent unsatisfactory IRs to TUGCO, who evaluated the IRs and sent a memorandum back detailing the disposition of each IR. NCRs were written by TUGCO on those where discrepancies existed. Memoranda were sent explaining why each of the remainder were not considered as discrepancies.

The NRC inspector also reviewed implementation of the random sampling system used for ISAP Nos. I.a.2 and I.a.3.

No NRC deviations were identified.

(d) Personnel Requirements: Qualification requirements for RTLs and issue coordinators are defined in Section VII of the CPRT Program Plan, "CPRT Objectivity Guidance." The primary requirements are: (i) experience and knowledge in the review subject matter, (ii) experience in managing technical projects and reviews, and (iii) integrity and objectivity based on lack of previous involvement in the CPSES project activities. The resumes and signed objectivity statements for the principal individuals involved in the electrical issues were reviewed.

No NRC deviations were identified.

- (2) <u>Testing Issues</u>: The purpose of the NRC inspection was to determine if the disposition of testing concerns complied with the CPRT Policies and Guidelines. The four guidelines discussed in paragraph 5.c.(1) above were used to perform this inspection. This report completes the NRC's initial inspection of programmatic implementation in this area.
 - (a) Working Files: The file system and subject matter breakdown in use were reviewed. A file index was available for each ISAP which defined the contents of the file folder. The file index was checked against the contents of the file for these files.

No NRC deviations were identified.

(b) SSE: One DR has been written and an SSE completed. The NRC inspector reviewed the processing of this DR.

No NRC deviations were identified.

(c) <u>Sampling Plan</u>: The sampling plan described in the program plan was not found to be feasible, so an alternate plan was developed. This revised plan was described in an appendix to the results report. This practice is permitted by Appendix D of the CPRT Program Plan.

No NRC deviations were identified during a review of the original and revised sampling plans.

(d) <u>Personnel Requirements</u>: The resumes and signed objectivity statements for the RTL and each of the three issue coordinators were reviewed.

No additional NRC deviations to that noted in NRC Inspection Report No. 50-445/85-11, 50-446/85-06 were identified.

6. CPRT ISAPs (Excluding ISAP No. VII.c)

a. <u>Inspection Reports on Butt Splices (ISAP No. I.a.2) and Butt Splice</u> Qualification (ISAP No. I.a.3)

Status of CPRT Activity

Phase II of ISAP No. I.a.2 has been completed with the following findings:

- No undocumented butt splices were identified during the inspection of 38 cabinets which were supposed to be free of splices;
- (2) A total of 603 butt splices were identified during the inspection of 26 cabinets and 25 motor control centers, which from documentation were supposed to contain 648 splices. This difference resulted because 149 of the documented splices were not installed, but 104 undocumented splices were discovered;
- (3) A total of 168 of the above 603 butt splices were found to be unsatisfactory, either by physical inspection or as a result of being undocumented;
- (4) A total of 80 unsatisfactory butt splices were removed for testing and replaced; and
- (5) A review was performed of 341 IRs which were applicable to 286 butt spliced cables. This review identified deficiencies in 294 IRs; e.g., failure to identify which conductors were spliced, and after the fact verification of a splice rather than the required witness. In addition to finding some unacceptable splices during the Phase II inspections, some splices documented in records were found to not be installed. TUGCO submitted a report in accordance with 10 CFR Part 50.55(e) dated September 26, 1985, concerning the identified deficiencies. An interim Corrective Action Report, CAR-050, has been issued.

Status of NRC Inspection Activity

The NRC inspector is continuing to review CPRT ISAP Nos.I.a.2, Revision 3; I.a.3, Revision 3; and CPRT Quality Instruction (QI) QI-002, Revision 4.

- No NRC violations or deviations were identified.
- b. Electrical Conduit Supports (ISAP No. I.c)

Status of CPRT Activity

TUGCO has completed an engineering check of as-built drawings for 257 1 1/2-inch and 2-inch conduit runs in the combined random and

engineered samples; i.e., 126 random and 131 engineered. These drawings have been transmitted to TERA for third party review and to G&H for seismic analysis. Seismic analysis has been completed for all runs in the random sample and for 128 runs in the engineered sample. Fifteen conduit runs have been identified, to date, as having the potential for interaction with safety-related components. TUGCO has initiated a dynamic test program at Corporate Consulting and Development (CCL) in North Carolina. The dynamic testing will provide actual strengths as compared to the previously used predicted values. TUGCO will also conduct a damage study walkdown of all conduit runs currently determined to have potential interactions with safety-related components. Evaluation of potential interactions for safety significance will utilize preestablished criteria to be specified in a walkdown procedure. This procedure is currently being prepared by Ebasco.

Third party review of the Unit 1 damage study resolution for greater than 2-inch conduit in Train C is being addressed in ISAP No. II.d.

Status of NRC Inspection Activity

A preliminary review of the Unit 1 large conduit damage study procedure and related as-built drawings has been conducted. Resolution of interactions predicted in this study will be reviewed as part of the NRC inspection program for ISAP No. II.d. A review of the CCL test procedure has been conducted.

No NRC violations or deviations were identified.

c. QC Inspector Qualifications (ISAP No. I.d.1)

Status of CPRT Activity

Phase II evaluation of ASME inspector qualifications has not been completed. Status of non-ASME inspector qualifications was sent to the TUGCO QC Manager by ERC Letter QA/QC-RT-681 on October 4, 1985. Further review by the Special Evaluation Team (SET) has resulted in some changes to the original transmittal. Reinspection is underway for a seventh inspector placed into Phase III. Package preparation is complete for an eighth inspector.

Status of NRC Inspection Activity

During this reporting period, the NRC inspector witnessed 24 Phase III reinspections conducted by ERC inspectors and also performed 10 reinspections independent of ERC personnel. No deficiencies were identified in these reinspections by either ERC inspectors or the NRC inspector. A concern that the reinspection attributes were very basic in nature and may not have accurately reflected the work performed originally by the project inspector was reviewed with the issue coordinator. This review found that the reinspection did reflect the activity associated with the inspector's earlier certifications.

No NRC violations or deviations were identified.

d. Guidelines for Administration of QC Inspector Tests (ISAP No. I.d.2)

Status of CPRT Activity

The SET has completed review of prior revisions to TUGCO Procedure CP-QP-2.1, "Training of Inspector Person'el." Comments from their review have been given to the QA/QC RTL and presented to TUGCO for resolution and/or incorporation into CP-QP-2.1. Revision 19 to CP-QP-2.1 was issued October 4, 1985, and incorporates these comments. Inspector certification examinations have also been revised to meet the requirements of Revision 19 of CP-QP-2.1.

Review of B&R Procedure ECP-19, "Exposed Conduit/Junction Box and Hanger Fabrication and Installation," and other procedures affecting craft training will be conducted under ISAP No. I.d.3. This issue was previously included in ISAP No. I.a.2.

Status of NRC Inspection Activity

The NRC inspector reviewed Procedure CP-QP-2.1, Revisions 18 and 19, to determine if concerns of the NRC Technical Review Team (TRT) were satisfactorily addressed. Revision 19 of CP-QP-2.1 was found to address the TRT concerns noted in ISAP No. I.d.2, including inspector familiarization or training for changes in QC inspection procedures. This action closes open item 445/8513-0-06.

The NRC inspector reviewed five recently administered QC inspector examinations. These were found to comply with the requirements of CP-QP-2.1 for written examinations.

No NRC violations or deviations were identified.

e. Inspection for Certain Types of Skewed Welds in NF Supports (ISAP No. V.a)

Status of CPRT Activity

Reinspection of the random sample of 60 ASME Section III, Subsection NF pipe supports containing 99 type 2 skewed welds has been completed. Disposition of the 12 TUGCO NCRs associated with the undersize type 2 skewed field welds has not been made.

Status of NRC Inspection Activity

The NRC inspector witnessed a total of nine reinspections and performed three independent inspections of NF supports containing type 2 skewed welds. The results of NRC Region I inspections of skewed welds are documented in NRC Inspection Report No. 50-445/85-13; 50-446/85-09. The planned NRC physical inspections for this ISAP have now been completed. NRC evaluation of TUGCO's dispositions of 12 undersize type 2 skewed field welds is dependent upon the processing of the associated NCRs. This remains an open item (445/8511-0-04).

One violation was identified in this subject area which is identified in paragraph 2.a of this appendix.

f. Plug Welds (ISAP No. V.d)

Status of CPRT Activity

Reinspection has been completed for the presence of plug welds in two random samples of cable tray hangers, consisting of 60 from Unit 1 and 61 from Unit 2. The reinspection resulted in the identification of 23 plug welds in 14 cable tray hangers. Documentation was reviewed for all cable tray hangers containing plug welds. The results of this review showed that all of the plug welds were authorized and documented. Due to a mix of non-ASME component supports with ASME Section III NF component supports in the two original random samples (see item A, Notice of Deviation, NRC Inspection Report No. 50-445/85-13, 50-446/85-09), a new random sample of 57 NF component supports has been created and reinspection has been initiated.

Status of NRC Inspection Activity

The NRC inspector witnessed 23 reinspections and performed 6 independent inspections of cable tray hangers. With respect to NF component supports, the NRC inspector has witnessed a total of 23 reinspections and performed a total of 4 independent inspections. Eight of the witnessed reinspections and one independent inspection occurred in this report period and were from the new random sample. Indications of possible plug welds were identified in two component support base plates during the witnessed inspections. The NRC inspector will witness the macroetching and inspection of these baseplates to determine whether or not plug welds exist.

No NRC violations or deviations were identified.

g. Installation of Main Steam Pipes (ISAP No. V.e)

Status of CPPT Activity

The specific engineering investigation of the main steam line installation is complete and is undergoing review. The report describing the analytical evaluation of stresses and support load changes has been issued by R. L. Cloud & Associates (RLCA) and has teen reviewed by TERA. Review and revision of pipe procedures for pipe erection and placement of temporary and permanent supports, as well as engineering significance of these procedures, is also complete. The TERA draft results report is still being reviewed.

Status of NRC Inspection Activity

The RLCA report addressing the installation of main steam pipes has been reviewed for adequacy with respect to the methods of analysis. The review included supporting computer output, calculations, piping models, and assumptions made. During this review the following conditions were noted:

- While the use of a "come-along" for horizontal adjustment is mentioned in Section 1.3, "Additional Background," it is not addressed in the analytical portion of the report.
- (2) The 18-inch bypass line is modelled in as a schedule 60 pipe, but drawing FSM-00165 specifies a schedule 40 pipe. Documentation was not available to substantiate that a schedule 60 pipe was used. Even though the schedule 60 piping is conservative as far as stress is concerned, it will have some impact on other conclusions made in the report such as vertical displacements.
- (3) Figure 3-12 in the analysis does not represent computer output No. RLCA P142-1-551-018, in that the node numbers do not correspond.
- (4) The NRC TRT identified that sagging occurred during flushing operations. RLCA states that sagging occurred before flushing. The date of the flushing should be established.

The above conditions constitute an unresolved item (445/8514-U-13). No NRC violations or deviations were identified.

h. Material Traceability (ISAP No. VII.a.1)

Status of CPRT Activity

The issue coordinator is receiving input from ISAP Nos. VII.c and VII.b.3. This information aids in the assessment of the overall material traceability control systems. Heat numbers on steel items such as supports and piping are being checked as part of the reinspections to establish traceability.

Status of NRC Inspection Activity

The NRC inspector has reviewed ISAP No. VII.a.1. This review found that the overall material traceability control system was to be evaluated for adequacy. Preliminary results of ISAP No. VII.c reinspections indicate that data on material traceability in areas other than steel is not being compiled. This lack of data could adversely affect the assessment of the material traceability control systems. This matter is considered to be an unresolved item (445/8514-U-14).

No NRC violations or deviations were identified.

i. Housekeeping and System Cleanliness (ISAP No. VII.a.7)

Status of CPRT Activity

This ISAP addresses two specific TRT concerns and performs an overview of the program on housekeeping and system cleanliness. Eleven plant surveys conducted by TUGCO and overviewed by ERC inspectors have been completed. The issue coordinator has reviewed the procedural controls to determine if requirements of Criterion XIII of Appendix B to 10 CFR Part 50 and the FSAR are included. Inputs from ISAP Nos. II.c, V.b, VI.a, and recent TUGCO/B&R audit reports, surveys, and other quality documents are being reviewed to evaluate the effectiveness of the current program.

Specific TRT concern on the number of chloride residue swipes made on the wall and bottom of the reactor vessel has been investigated. The procedure controlling this activity required two swipes to be made, but the file documentation shows that eight swipes were made and found acceptable. Flush plan FP-55-08, the controlling procedure, is a specific one-time procedure. Ther fore, no revision to this procedure is being made. Comments on the adequacy of the number of swipes made will be in the results report.

Specific TRT concern on lack of protective covering on equipment near welding activities will be addressed by reviewing the results of plant surveys.

Status of NRC Inspection Activity

The NRC inspector has witnessed plant surveys of the safeguards building, Unit 2 reactor area, millwright shop, and ironworkers shop. During these surveys, items such as trash or unidentified material were found in laydown areas where Quality (Q) material was stored. These items were noted by TUGCO and ERC personnel. An independent NRC resurvey of these areas found that the noted discrepant conditions had been restored to requirements.

The NRC inspector reviewed the file for FP-55-08 to verify that the eight chloride residue swipes had been taken for the reactor vessel wall and bottom. These swipes were found to be documented as performed and acceptable. In addition, numerous swipes had been taken on reactor internals and the hot and cold legs. These were also acceptable.

No NRC violations or deviations were identified.

j. Valve Disassembly (ISAP No. VII.b.2)

Status of CPRT Activity

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A second reinspection of seven Borg-Warner (B-W) valves was conducted using B-W serial numbers for body and bonnet identification. This reinspection was necessitated by the fact that identification numbers used in the initial reinspection were traceable to material heat numbers, but were not necessarily unique to each valve bonnet or body. No DRs were issued as a result of the second reinspection.

All reinspections are now complete. Of a total of four valid DRs issued for this ISAP, three SSEs have been completed. The fourth DR (VALV-9-1) identifies a mismatch between the identification numbers observed on the valve bonnet and that which is listed in the QA/QC documentation package for the valve. QA/QC documentation for the actual installed bonnet has not been located to date.

A difference was identified by the SSE engineer between the respective design temperature and pressure listed by G&H and those listed by Westinghouse for the Chemical Volume Control system. Specifically, the G&H line designation table lists the design temperature as 250°F and the design pressure as 300 psi, while the corresponding Westinghouse design temperature and pressure are listed, respectively, as 150°F and 150 psi.

The NRC inspector was informed by the SSE engineer that disposition of the remaining SSE is pending receipt of information from TUGCO regarding valve temperature/pressure ratings and TUGCO resolution of the above described difference in design conditions.

Status of NRC Inspection Activity

A total of eight reinspections have been witnessed by the NRC inspector, one of which was a reinspection of a B-W valve during this report period. Independent NRC inspections have also been performed on five valves in the combined random and engineering samples.

The NRC inspector was informed by TUGCO Field Mechanical Engineering personnel that: (1) the previously described differences between G&H and Westinghouse design conditions had also been identified by TUGCO, and (2) a comparison of G&H and Westinghouse design conditions for mechanical equipment had been conducted by TUGCO which resulted in the identification of several design pressure and temperature differences.

The NRC inspector also noted that NCRs have been written by TUGCO for several valves having temperature and/or pressure ratings listed on the Code Data Log that are different from those listed in the G&H line designation table. It was not immediately apparent whether or not the Westinghouse/G&H comparison study had also identified these differences.

Verification of the adequate resolution of differences identified in the Westinghouse/G&H comparison study and those identified in NCRs is considered unresolved and will be evaluated further during a subsequent reporting period (445/8514~U-15).

No NRC violations or deviations were identified.

7. ISAP No. VII.c

a. Electrical Cable

Status of CPRT Activity

ERC has completed 85 reinspections and 71 documentation reviews of sampled electrical cable as of October 30, 1985.

Status of NRC Inspection Activity

 The following eight ERC reinspections of sampled electrical cable were witnessed by the NRC during this report period:

Verification Package No.	Cable No.
I-E-CABL-078	EG113538
I-E-CABL-084	EG104608

I-E-CABL-086	EØ121816Z
I-E-CABL-088	EØ124088
I-E-CABL-089	EG123639Z
I-E-CABL-098	EØ145694
I-E-CABL-101	Eø122951
I-E-CABL-102	EG139519

- (2) During the above reinspections, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations:
 - (a) <u>I-E-CABL-037</u>: Two through-the-wall sleeves had identical identification tag number TWS-E-010. The cable run also deviated from the cable run schedule.
 - (b) <u>I-E-CABL-084</u>: Cable run deviated from the cable run schedule and cable was routed through C13G06325 instead of C13G06324.
 - (c) <u>I-E-CABL-098</u>: There was no identification tag on the conduit nipple. Cable EØ145694 was found to not have the required 2 inches of slack in free air as it exited conduit C13Ø16044 into cable tray. A hold tag with NCR E85-101141SX had been placed on the conduit as a result of a prior inspection identifying the same condition.

Dispositions of the above findings are open items (445/8514-0-03 through 445/8514-0-05).

(3) ERC also noted the following deficiencies outside the defined inspection scope:

<u>I-E-CABL-086</u>: Conduit was 1 1/2 inches instead of the 2-inch size specified and a loose conduit coupling was noted where conduit penetrated a wall.

Dispositions of the above findings are an open item (445/8514-0-06).

(4) NRC inspectors did not identify any additional discrepancies with respect to the above eight packages.

- (5) Independent documentation reviews were performed of 10 verification packages comprising 22 cables. The results of the independent reviews are an open item pending NRC review of ERC results (445/8514-0-07).
- (6) The NRC inspector noted that NCRs have been written by TUGCO QA/QC personnel in regard to potential electrical cable damage resulting from installation practices used for cable support grips. TUGCO engineering has provided information to assist in the disposition of the NCRs. This matter is considered unresolved pending review of supplemental information from TUGCO and will be evaluated further in a subsequent report (445/8514-U-16).
- b. Cable Trays

Status of CPRT Activity

ERC has completed 84 reinspections and 78 documentation r views of sampled cable trays as of October 30, 1985.

Status of NRC Inspection Activity

 The following two ERC reinspections of sampled cable trays were witnessed by the NRC in this report period:

Verification Package No.	Cable Tray No.
I-E-CATY-201	T22ØSBC89
I-E-CATY-247	TBGCCM62

No deficiencies were noted by ERC or NRC inspectors during these inspections.

- (2) The NRC performed independent reinspections of two electrical cable trays. The results of these inspections are open items pending NRC review of ERC inspection results and documentation reviews (445/8514-0-08) and (446/8511-0-12).
- (3) The NRC performed independent documentation reviews of seven verification packages for seven cable trays. The results of these reviews are an open item pending NRC review of ERC review results (445/8514-0-09).

No NRC violations or deviations were identified.

c. Electrical Conduit

Status of CPRT Activity

ERC has completed 79 reinspections and 76 documentation reviews of sampled electrical conduit as of October 30, 1985.

Status of NRC Inspection Activity

 The following two ERC reinspections of sampled electrical conduit were witnessed by the NRC in this reporting period:

Verification Package No.	Conduit No.
I-E-CDUT-089	C13G07757
I-E-CDUT-098	C12Ø20693

No deficiencies were noted by ERC or NRC inspectors during these inspections.

(2) The NRC inspectors performed independent documentation reviews of the following verification packages for sampled electrical conduits:

Verification Package No.	Conduit No.
R-E-CDUT-007	C13Ø10190
R-E-CDUT-051	EAB1-1
R-E-CDUT-064	C13Ø16037
R-E-CDUT-070	C14R13047
R-E-CDUT-076	C12Ø08750
R-E-CDUT-077	C13Ø05532
R-E-CDUT-086	C13Ø30044
R-E-CDUT-089	C13G07757
R-E-CDUT-098	C12Ø20693

During the above documentation reviews the NRC inspectors observed the following deficiencies:

(a) Lighting conduit EAB1-1 was physically reinspected by ERC and witnessed by NRC. ERC subsequently discarded this item from the sample of conduit population, because not enough attributes were accessible for inspection. The NRC inspector performed an independent documentation review of this field witnessed activity and noted that the TUGCO electrical inspector, who signed the final IRs E-1-0027419 and E-1-0024951 for conduit EAB1-1, was not certified to Procedure QI-QP-11.3-25. TUGCO Procedures CP-QP-2.1 and QI-QP-2.1-3 require that inspection personnel be certified

- (b) ISAP No. VII.c requires original documentation review for attributes deemed to be inaccessible. A portion of conduit C13Ø16037 was found to be inaccessible during reinspection as a result of being covered with separation barrier material (SBM). There was no evidence in ERC's Verification Package No. R-E-CDUT-064 that a check was made for attributes which were not accessible due to SBM installation. This is an NRC deviation (445/8514-D-02).
- (c) QI-009, Revision 0, "Document Review of Conduit/R-E-CDUT," requires the reviewer to record the SBM IR and/or latest construction operation traveler number at the bottom of the checklist. The checklist for conduit C13016037 in Verification Package No. R-E-CDUT-064 did not contain this required documentation. This item is an NRC deviation (445/8514-D-03).
- (d) QI-009, Revision 0, "Document Review of Conduit/R-E-CDUT," also requires the ERC inspector to verify that IRs signed by electrical inspectors were "dated after their date of certification and prior to their date of expiration." ERC Verification Package No. R-E-CDUT-070 for conduit C14R13047 failed to indicate that the ERC inspector observed that the electrical inspector signing IR-E-46087 was not certified to QI-QP-11.3-23 on the date of inspection. This item is an NRC deviation (445/8514-D-03).
- (e) During this review, the NRC inspector observed that TUGCO inspection procedures (i.e., QI-QP-11.3-23 and QI-QP-11.3-23.11) for conduit did not require inspection for separation between approximately September 1979 and November 1983. The NRC inspector was informed that a decision was made to inspect conduit for separation after construction completion, on a room-by-room basis. The NRC inspector was also informed that this activity is prescribed in QI-QP-11.3-29 and that documentary evidence is available in the Permanent Plant Records Vault (PPRV), filed by area or room "turn-over" numbers.

This item is considered unresolved pending review of this documentation (445/8514-U-17).

(445/8514-V-04).

- (f) The NRC inspector observed during documentation review of conduit C13Ø16037 that the ERC inspector did not review construction operation traveler EE83-0997-8904 for other than inspector certification and correct QI reference on the traveler. It was also noted that construction operation travelers EE84-10324-8904, EE84-10505-8904, and EE85-11255-8904, in response to Item Removal Notices (IRNs) for SBM removal and replacement, were not reviewed to ascertain the certification status of any additional inspectors that had been used to those that signed the applicable IRs. This item is unresolved pending NRC review of construction operation traveler documentation in the PPRV (445/8514-U-18).
- (g) The NRC inspector reviewed documentation for six other conduits. ERC reviews were scheduled but had not been completed. The results of these reviews will be reported in a subsequent report after comparison of NRC review results with the completed ERC results. This is an open item (445/8514-0-10).
- (h) The NRC inspector observed that documentation reviews for lighting conduits could not be performed by ERC because QI-009, Revision 0, does not address the relevant QIs; i.e., QI-QP-11.3-25 and QI-QP-11.3-9. This is an open item pending the issuance of new instructions or a subsequent revision to QI-009 (445/8514-0-11).

d. Electrical Equipment Installation

Status of CPRT Activity

ERC has completed 20 reinspections and 19 documentation reviews of sampled electrical equipment installations as of Octouer 30, 1985. This reinspection total is lower than the number (i.e.,21) reported in NRC Inspection Report No. 50-445/85-13, 50-446/85-09 as being performed by September 20, 1985. The difference arose as a result of revision to QI-010 and institution of re-review of previous., completed packages for compliance to the revised QI.

Status of NRC Inspection Activity

 The following ERC reinspection of sampled electrical equipment installation was witnessed by the NRC:

Verification Fackage No.

Equipment No.

I-E-EEIN-059

CP1-ECDPEC-12

No deficiencies were noted by ERC or NRC inspectors during this inspection.

(2) The NRC performed an independent documentation review of one sampled electrical equipment installation. The results of this review are an open item pending comparison with ERC results when available (445/8514-0-12).

No NRC violations or deviations were identified.

e. Instrumentation Equipment Installation

Status of CPRT Activity

ERC has completed 75 reinspections and 75 documentation reviews of sampled instrumentation equipment installations as of October 30, 1985.

Status of NRC Inspection Activity

 To date, eight reinspections have been witnessed by NRC inspectors with the following five reinspections witnessed in this report period:

Verification Package No.	Unit No.
I-E-ININ-072	1
I-E-ININ-079 I-E-ININ-069	1
I-E-ININ-076 I-E-ININ-066	1

(2) During the above reinspections, ERC identified the following conditions as subject to evaluation as potential deviations:

I-E-ININ-072:

- (a) G&H Specification 2323-MS-625 and QI-012, Revision 0, require a slope for process wetted lines of 1 inch per foot minimum, except that where physical layout is a problem the minimum slope may be reduced to 1/4 inch per foot. The tubing line from the root valve to the instrument was found to only have a slope of 1/2 inch on 9 inches and physical layout did not appear to be a problem.
- (b) Drawing 2323-M1-2613, Revision 2, shows instrument 1-P1S-4251 as being located 6 feet 0 inches off the wall.

This instrument was actually located 5 feet 0 inches off the wall

<u>I-E-ININ-079</u>: The tubing line from the component cooling water pump IA to instrument 1-PT-4520 had reverse slope where it passed under the discharge line.

I-E-ININ-066: Required color code was missing and maximum allowable distance between color code marks was exceeded.

I-E-ININ-069: Sending units 1-LS-6712 and 1-LS-6717 were found to be reversed.

Dispositions of the above findings are open items (445/8514-0-13 through 445/8514-0-16).

No NRC violations or deviations were identified.

(3) ERC also neted the following deficiency outside of the defined inspection scope:

I-E-ININ-079: C1413591 was damaged at the connection to the instrument 1-PT-4520.

Disposition of the above finding is an open item (445/8514-0-17).

No NRC violations or deviations were identified.

(4) The following independent documentation reviews of sampled instrumentation equipment installations were made by the NRC inspectors:

Verification Package No.Instrument No.R-E-ININ-0051-LS-4795R-E-ININ-0601-LS-3376

(a) During the review of these packages, the NRC inspector noted that the procedure used (i.e., QI-013, Revision 4) did not provide detailed instructions for checking original documentation for attributes which were inaccessible or nonrecreatable during the physical inspections of these instrument installations. According to paragraph 4.1 of ISAP No. VII.c, Revision 0, documentation reviews will be utilized to supplement reinspections for attributes which are nonrecreatable or inaccessible. Paragraph 4.1.3 of the same ISAP requires procedures to have detailed instructions

for the document reviewers. QI-013, Revision 4, "Documentation Review for Instrumentation Equip R-E-ININ," did not list specific attributes to be verified during documentation review, but rather required verification of installation in accordance with one or more of a listing of TUGCO procedures. Applicable procedure revisions were not defined. The number of inaccessible and/or nonrecreatable attributes may vary between different revisions of a procedure. As an example, Revision 1 of QI-QP-11.8-8 adds to Revision 0 requirements an inspection checklist addressing verification of: (i) color codes for nuts; (ii) flange face cleanliness; (iii) gasket size, rating, and material type; (iv) nuts being tightened in a diametrically opposite sequence; (v) studs being the same length; (vi) proper alignment and fitup of flange and gasket; and (vii) sufficient gasket compression. The absence of instructions to the document reviewer on procedure revisions to be used can thus result in insufficient guidance with respect to inaccessible and nonrecreatable attributes. This is an NRC deviation (445/8514-D-02).

- (b) In the review of Verification Package No. R-E-ININ-060, the NRC inspector noted that the original inspection was performed by a TUGCO inspector whose certification to QI-QP-11.8-7 could not be verified. TUGCO is currently investigating the missing certification documents. This matter is an unresolved item (445/8514-U-19).
- (5) Independent reinspections were performed by the NRC inspector on Verification Package Nos. I-E-ININ-04 and I-E-ININ-026, with the following results:

I-E-ININ-04: Required bend radius verification was not performed by ERC inspectors.

<u>I-E-ININ-026</u>: ERC inspectors did not identify that: (a) required color coding on six sections was missing, (b) incorrect slope was present, and (c) an incorrect air gap condition was present.

The failure of ERC inspectors to identify the above conditions is an NRC deviation (445/8514-D-04).

HVAC Ducts and Plenums

Status of CPRT Activity

As of October 25, 1985, reinspections have been completed for 62 of 95 random items in the HVAC ducts and plenums samples. The reinspections have identified conditions which necessitated the issuance of 75 DRs, 38 of which have been validated. Twelve DRs have been evaluated by ERC and were found to be nonsafety significant. A number of deviations dealt with companion angle welds and include insufficient weld length, undersized welds, excessive stitch weld spacing, weld cracks, and incomplete weld fusion. Other deviations involved seal weld undercuts, lack of full face connecting flange/gasket contact, level 3 flanged joint installed instead of the specified level 2 (as defined by G&H specification 2323-MS-85), loose vent lock caps, level 2 construction instead of the specified level 3, lock washers not installed on vent lock mounting screws, deteriorating connecting flange gasket, and seal weld not touched up with paint.

Status of NRC Inspection Activity

(1) ERC methods and related documents used in establishing the population items list were reviewed for population inclusiveness. Completed SSE reports are currently being reviewed by the NRC inspector. As of October 25, 1985, eight reinspections have been witnessed by the NRC inspector, of which the following four were witnessed during this report period and are listed below by Verification Package No.:

Verification Package No.	Ur t No.
I-M-DU'021	1
I-M-DUPL-073 I-M-DUPL-084	12
I-M-DUPL-086	1

(2) During the above reinspections, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations:

<u>I-M-DUPL-021</u>: Some duct connecting flange bolts were bent. No corner welds existed on duct connecting flanges and a connecting flange bolt hole was excessively large.

<u>I-M-DUPL-073</u>: All vent lock caps were loose and companion angle bolt hole center-to-center distance was excessive on both ends of the duct section.

I-M-DUPL-084: Duct connecting flange corner weld lengths were less than the specified dimension.

I-M-DUPL-086: Approximately 4 inches of duct seam were not welded.

Dispositions of the above findings are open items (445/8514-0-18 and 445/8514-0-19, 446/8511-0-03, and 445/8514-0-20).

(3) The following potential out-of-scope deviation was also identified by ERC:

<u>I-M-DUPL-073</u>: An additional hole was drilled in the companion angle flange and this hole was partially filled with sealant. Disposition of the above finding is an open item (445/8514-0-21).

(4) For all witnessed reinspections, the ERC inspector did not measure duct gage thickness which was a required attribute. The NRC inspector was informed by ERC that such measurements were not possible due to inaccessibility to the inside of the duct. The NRC inspector concurred with this position.

No NRC violations or deviations were identified.

g. HVAC Equipment Installation

Status of CPRT Act vity

As of October 25, 1985, reinspections have been completed for 38 of 89 random items in the HVAC equipment installation samples. The reinspections have identified conditions which necessitated the issuance of 68 DRs, none of which have been currently validated. Reinspection was on hold for approximately one week, pending a change notice to QI-023, Revision 0. This change notice involved changes in the following areas: (1) the method of verifying companion flange bolt tightness and gasket compression, (2) inclusion of verification of full thread engagement between companion flange bolts and nuts, (3) companion flange bolt centerline to flange edge distance requirements, and (4) the method of certification of gravity damper counterweight balance. Previously reinspected items will require a followup reinspection, where applicable, as a result of this revision.

The NRC inspector was informed by the population engineer that the HVAC equipment installation plan will be revised to incorporate two distinct populations, each requiring a minimum sample size of 60. One population will include all HVAC equipment installed by Bahnson Services, Inc., while the others will include all HVAC equipment installed by B&R. This change will not necessarily invalidate any reinspections conducted to date, but could effectively double the total number of items to be reinspected in the initial sample.

Status of NRC Inspection Activity

 As of October 25, 1985, a total of four reinspections have been witnessed by the NRC inspector, all of which were witnessed during this report period and are listed below:

Verification Package No.	Unit No.
I-M-HVIN-017	1
I-M-HVIN-038 I-M-HVIN-040	2
I-M-HVIN-043	î

(2) During the above reinspections, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations:

I-M-HVIN-017 (Filter): Three bolts on the inlet duct connection did not have lock washers installed.

<u>I-M-HVIN-038 (Fan)</u>: (a) The exhaust flange gasket did not cover the entire flange area, (b) the gasket was also unevenly compressed, and (c) some lockwashers on exhaust connecting flange bolts did not have full contact with the flange. Similar conditions were identified by the ERC inspector for the inlet duct connection.

<u>I-M-HVIN-040 (Fan)</u>: (a) Inlet and cutlet duct connection gaskets had low and uneven compression, (b) diameters for foundation anchor bolts and duct connection bolts were illegible in drawings provided in the inspection package, and (c) exhaust duct connection bolts did not have full thread engagement with nuts.

<u>I-M-HVIN-043 (Motor Operated Damper)</u>: (a) A nameplate was not observed on the equipment, and (b) the actuator spring could not be located which is required for verification of fail closed or fail open positions.

Dispositions of the above findings are open items (445/8514-0-22, 446/8511-0-04, 445/8514-0-23 and 445/8514-0-24).

(3) The following potential out-of-scope deviation was also identified by ERC: I-M-HVIN-043: Some of the bolts attaching the actuator to the mounting bracket did not have full thread engagement.

Disposition of the above finding is an open item (445/8514-0-25).

No NRC violations or deviations were identified.

h. Large Bore Piping Configuration

Status of CPRT Activity

As of October 25, 1985, reinspection was complete for 65 of the 99 random sample large bore piping configuration items. The reinspections identified conditions which resulted in the issuance of 34 DRs, 18 of which, to date, have been validated and are undergoing an evaluation by ERC for safety significance.

The NRC inspector was informed by the population engineer that the population items list is currently being revised to exclude all items not having an "N-5" designation on the piping isometric drawings. One exception will be certain safety-related piping in Unit 1 that has been exempted from "NA" code stamping requirements.

The NRC inspector was informed that the above described revision to the population items list is required in order to ensure that all CPRT reinspection items had been previously inspected and accepted by construction QC. Approximately 24 previously reinspected items will be excluded from the reinspection samples as a result of this revision.

Deviations have involved incorrect flow direction orientation of an orifice plate, insufficient clearance with adjacent piping and equipment, a different part number on a valve to that shown on the isometric drawing, linear and location measurement differences, insufficient sleeve clearances, missing code data plate, and flow direction not marked on the valve.

Status of NRC Inspection Activity

ERC methods and related documents used in establishing the population items list were reviewed for population inclusiveness. Completed SSE reports are currently being reviewed by the NRC inspector. As of October 25, 1985, four reinspections have been witnessed by the NRC inspector, with the following verification package reinspection being witnessed during this report period: <u>I-M-I3CO-113 (Unit 2)</u>: During this reinspection, ERC identified one condition as subject to evaluation as a potential deviation, i.e., flanges that were identified as orifice flanges on the isometric drawing did not have an identification tag or flow direction indication.

Disposition of the above finding is an open item (446/8511-0-05).

No NRC violations or deviations were identified.

Piping System Bolted Joints/Materials

14

ERC has completed 73 reinspections of piping system bolted joints/materials as of October 26, 1985. However, on eight of these reinspections the attribute dealing with flange rating could not be inspected because the flange was painted. The paint will be scraped off the eight flanges, thus allowing this attribute to be reinspected.

ERC has also completed document reviews on 14 of the 73 packages. The 73 packages represent 100% of the combined random and engineering samples.

Status of NRC Inspection Activity

 The following ERC reinspection was independently inspected by the NRC inspector:

Verification	Package No.	Drawing No.	Flange No.	Unit No.
		And a second second second second	All of the second differences and the second second	Contract of the second s

I-M-PBOM-34

BRP-SI-1-R8-048

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With respect to the above inspection, the NRC inspector concurred with the ERC inspector's finding that the flange type was not hardstamped on the flange as required by the inspection procedure, and that this condition is subject to evaluation as a potential deviation. Subsequently, the inspection procedure was revised to allow inspectors to visually identify the type of flange in the not hardstamped with such information. The above will be reinspected by the type of this particular attribute.

No NEL violations or descalations were identifyed

(2) The following conditions where identified by DRC in September as subject to evaluation as potential deviations and DRs written for them: (a) I-M-P80M-48 - Flange No. 1 (Drawing BMP in 1-58-003) had a loose nut, and (b) I-M-P80M- Flange No. 3 (Drawing BRP-CH-1-EC-004B) had two studs without the required one thread past the outer face of the nut. Existing open items for these subjects (i.e., 445/8513-0-21 and 445/8513-0-22) will remain open pending review of the applicant's completed disposition.

No NRC violations or deviations were identified.

j. Small Bore Piping and Instrumentation Tube Welds/Material

Status of CPRT Activity

Reinspection is in progress of small bore pipe and instrumentation cube welds and material present in a random sample of 60 welds from Units 1 and 2. Forty-four small bore pipe and instrumentation tubing welds have been visually reinspected. Base material heat codes and welder identifications have been recorded and are undergoing documentation review. No deviations have been found.

Status of NRC Inspection Activity

The following seven reinspections of small-bore piping welds were witnessed by the NRC inspector:

Verification Package No.	Pipe No. & Weld No.		BRP No.	
I-M-SBWM-016 I-M-SBWM-003 I-M-SBWM-013 I-M-SBWM-040	CH-2-216-152-3, SW 2-368-105-3, CC-2-064-152-3, CH-1-220-152-3	Weld 11 Weld 23A Weld 1-1	CH-2-58-009 SW-2-A8-027 CC-2-58-002 CH-1-58-024	

CS-1-905-250-R2, Weld 18

CT-1-127-901-R2, Weld 56

CT-1-127-301-R2. Weld 43

CS-1-R8-013

CT-1-RB-031

CT-1-RB-031

No conditions subject to evaluation as potential deviations were identified by ERC to the NRC inspector.

No NRC violations or deviations were identified.

k. Large Bore Piping Welds/Material

Status of CPRT Activity

1-M-SBWM-076

I-M-SBWM-054

I-M-S8WM-057

Visual reinspection is in progress of a random sample of 60 ASME Section III large bore piping welds and material from Units 1 and 2. To date, 35 large bore piping welds have been reinspected. One deviation has been identified which is currently being evaluated for validity and safety significance by ERC.

Status of NRC Inspection Activity

As of October 25, 1985, the following eight reinspections of sampled large bore piping welds were witnessed by the NRC inspector:

Verification Package N	lo. Pipe No. & Weld No.	BRP. No.
I-M-LBWM-003	CS-2-250-301-R-3, Weld 6	CS-2-SB-020
I-M-LBWM-009	CS-2-309-301-R-3, Weld 8	CS-2-SB-030
I-M-LBWM-026	BR-X-056-151-R-3, Weld 7	BR-X-AB-048
I-M-LBWM-030	DD-1-18-151-3, Weld 16-1	DD-1-AB-013
I-M-LBWM-084	FW-2-102-1303-2, Weld 1-3	FW-2-RB-022
I-M-LBWM-078	CC-2-271-152-3, Weld 31	CC-2-RB-53
I-M-LBWM-001	CC-2-302-301-R3, Weld 7A	CS-2-AB-032
I-M-LBWM-060	CS-2-026-301-R3, Weld 11	CS-2-AB-065

No conditions subject to evaluation as potential deviations were identified by ERC to the NRC inspector.

No NRC violations or deviations were identified.

. Large Bore Pipe Supports - Rigid

Status of CPRT Activity

Reinspection/verification of pipe support installations by ERC is approximately 94% complete. A total of 151 deviations have been identified of which 98 have been determined to be valid. The remainder are currently being reviewed for validity.

Status of NRC Inspection Activity

(1)The NRC inspector performed independent inspections on pipe support Verification Package Nos. I-S-LBSR-013 and -023, in order to assess the adequacy of the ERC reinspections. The ERC reinspection of pipe support Verification Package No. I-S-LBSR-013 was determined to be adequate, accurate, and complete. However, during the independent inspection of I-S-LBSR-023, one deviation from a commitment was identified with respect to failure to identify discrepant dimensions. Paragraph 5.3.4.c in QI-027 states with respect to dimensional tolerances not shown on design drawings, "Component Member Length +/- 1/2 inch." The Bill of Material on Revision 2 of drawing No. CT-1-097-402-C52R lists item No. 4 (2 pieces) as being 7 3/4 inches long. Independent NRC inspection determined the actual length dimensions to be, respectively, 6 5/8 inches and 6 1/2 inches, both of which are under the minimum indicated dimension of 7 1/4 inches (445/8514-D-04).

(2) During inspection of the installation of box frame supports, which are a part of the Unit 1 containment spray system, t'e NRC inspector observed that clearances exist between the bottom of the pipe and the pipe support, and in some cases no clearance exists between the top of the pipe and pipe support. The TUGCO Engineering as-built piping verification supervisor was contacted about the conflict between the as-built drawings for these supports and the actual field configuration. The TUGCO Engineering supervisor stated that their as-built piping configuration program, TNE-DC-24-1, satisfies the requirements of NRC Bulletin 79-14 and that the as-built configuration complied with installation tolerances. The conditions identified above increase loading on adjacent pipe supports and increase stresses on the piping system. The conditions listed above are being referred to NRR for consideration when determining the accuracy and adequacy of Stone and Webster Engineering Corporation's stress analysis program for the applicable design specific action plan.

m. Large Bore Pipe Supports - Non-Rigid

Status of CPRT Activity

Reinspection/verification of pipe support installations by ERC is approximately 88% complete. A total of 217 deviations have been identified of which, to date, 162 have been determined to be valid.

Status of NRC Inspection Activity

 The NRC inspector witnessed ERC's reinspection of Verification Package No. I-S-LBSN-249 to verify compliance with QI-029.

During the inspection, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations: (a) component member lengths out of tolerance, (b) undersize welds, and (c) missing locking devices.

Dispositions of the above items are an open item (445/8514-0-26).

No NRC violations or deviations were identified.

(2) The NRC inspector performed independent inspections on pipe support Verification Package Nos. I-S-LBSN-014, -025, -035, and -052, in order to assess the adequacy of the ERC reinspections. This effort revealed that ERC had performed their reinspections in accordance with the requirements of QI-029.

No NRC violations or deviations were identified.

n. Small Borc Piping Configuration

Status of CPRT Activity

As of October 25, 1985, reinspection was complete for 64 of 95 random sample small bore piping configuration items. The reinspections identified conditions which resulted in the issuance of 45 DRs, 25 of which were validated and are being evaluated by ERC for safety significance.

The NRC inspector was informed by the population engineer that the population items list is currently being revised to exclude all items not having an "N-5" designation on the piping isometric drawings. One exception will be certain safety related piping in Unit 1 that has been exempted from "NA" code stamping requirements.

The NRC inspector was informed that the above described revision to the population items list is required in order to ensure that all CPRT reinspection items included those which had been previously inspected and accepted by construction QC. Approximately 20 previously reinspected items will be excluded from the reinspection samples as a result of this revision.

Deviations have involved out of tolerance linear and location measurements, incorrect valve flow direction orientation, inadequate clearances with adjacent piping and equipment, and the part number on a valve differing from that on the isometric drawing.

Status of NRC Inspection Activity

(1) ERC methods and related documents used in establishing the population items list were reviewed for population inclusiveness. Completed SSE reports are currently being reviewed by the NRC inspector. As of October 25, 1985, six reinspections have been witnessed by the NRC inspector, of which the following three were witnessed during this report period:

Verification Package No.	Unit No.
I-M-SBCO-015	1
I-M-SBCO-061	1
I-M-SBC0-079	2

(2) During the above reinspections, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations:

<u>I-M-SBCO-061</u>: There was insufficient clearance with three adjacent pipes and a linear dimension measurement was out of tolerance.

I-M-SBCO-079: Certain field survey elevation measurements were not the same as the elevations shown on the isometric drawing.

Dispositions of the above findings are open items (445/8514-0-27 and 446/8511-0-06).

No NRC violations or deviations were identified.

o. HVAC Duct Supports

Status of CPRT Activity

Visual reinspection of a random sample of 66 HVAC duct supports from Units 1, 2, and common is in process. Twenty-five HVAC duct supports have been reinspected by ERC with 18 deviations identified, mostly in the areas of weld size and configurations. The deviations are currently being evaluated for validity and safety significance by ERC.

Status of NRC Inspection Activity

 As of October 30, 1985, the following three reinspections of sampled HVAC duct supports were witnessed by the NRC:

Verification Package No.	Unit No.	Duct Support No.
I-S-HVDS-023	1	CB-830-1N-1R
I-S-HVDS-041	1	AB-842-1L-1F
I-S-HVDS-005	2	CB-790-2N-1BF

(2) During the above reinspections, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations:

I-S-HVDS-023: Size of horizontal brace was not per the drawing and several welds were undersize.

I-S-HVDS-041: Undersize fillet welds.

I-S-HVDS-005: Wrong weld location, undersize fillet welds, and craters.

Dispositions of the above findings are open items (445/8514-0-28, 445/8514-0-29, 446/8511-0-07).

No NFC violations or deviations were identified.

p. Containment Liner and Tank Stainless Steel Liner

Status of CPRT Activity

Ninety-one verification packages have been issued and reinspections are approximately 96% complete using QI-031, Revision 0. Documentation review of these packages using QI-032, Revision 0, is approximately 45% complete. Eighty-three DRs relating to the documentation review have been issued. These deviations are currently being reviewed for validity and safety significance by ERC.

Status of NRC Inspection Activity

Review of NRC Inspection Report 50-445/85/13, 50-446/85-09 showed that the number of inspections witnessed was incorrectly reported as four rather that the actual number of nine. No additional NRC inspection activity occurred during this report period.

q. Structural Steel

Status of CPRT Activity

A random sample of 60 structural steel members was selected from a total population of approximately 1600 individual members. Verification packages are currently being prepared by ERC for each member in the sample. QI-045, Revision 1, is being used for physical reinspection. Fifteen packages have been issued to ERC inspectors and inspection is approximately 5% complete based on a minimum sample of 60. Several of the 15 issued packages require additional drawings and clarification. Ten deviations have been identified, involving primarily incorrect member size, undersized and missing welds, inadequate bolt hole coverage, and inadequate Hilti bolt edge distance. A second random sample of structural steel members related to safe shutdown systems is scheduled to be selected and inspection commenced by the end of November 1985.

Status of NRC Inspection Activity

 The NRC inspector has reviewed QI-045, Revision 1. The following three inspections have been witnessed representing 5% of the first random sample:

Verification Package No.	Equipment No.	Unit No.
I-S-STEL-120	MRB-0565-DCA-MK-A	1
I-S-STEL-88	AFCO-MK-C182-7-RB	1
I-S-STEL-95	AFCO-MK-D180-1-RB	1

(2) During the above reinspections, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations:

<u>I-S-STEL-120</u>: Three attributes were rejected; i.e., (a) connection location, (b) connection size, and (c) bolt hole edge distance.

I-S-STEL-88: Undersized welds and incorrect member size were identified.

I-S-STEL-95: Exposed bolt holes and inadequate bolt tightening were identified.

Dispositions of the above findings are open items (445/8514-0-30 through 445/8514-0-32).

No NRC violations or deviations were identified.

r. Concrete Placement

Status of CPRT Activity

Reinspection of the first random sample of 60 concrete placement packages is approximately 92% complete. Twenty eight deviations have been identified relating primarily to unfilled holes, voids, and debris in the concrete surface. These deviations are currently being reviewed for validity and safety significance by ERC. Documentation review procedures have not yet been issued.

Status of NRC Inspection Activity

(1) The NRC inspector has reviewed QI-043, Revision 0, and witnessed 9 reinspections representing 15% of the first random sample of 60 concrete placements. The following three ERC reinspections were witnessed by the NRC inspector during this report period:

Verification Package No.	Concrete Placement No.	Unit No.
I-S-CONC-40	CPC-105-6831-014	1
I-S-CONC-51	CPC-105-5865-012	1
I-S-CONC-11	CPS-101-2808-001	1

(2) During the above reinspections, ERC identified the following conditions as potential deviations to the NRC inspector and subsequently issued DRs:

I-S-CONC-40: The locations of concrete cast-in-place inserts (Richmond) were out of tolerance. DR I-S-CONC-40-DR1 was issued subsequent to the inspection.

<u>I-S-CONC-51</u>: Voids were identified in the concrete surface. DR I-S-CONC-51-DR1 was issued subsequent to the inspection.

Dispositions of the above findings are open items (445/8514-0-33 and 445/8514-0-34).

No NRC violations or deviations were identified.

s. Small Bore Pipe Supports

Status of CPRT Activity

A population of 7947 small bore pipe supports has been identified from which a total of 76 support verification packages were randomly selected for reinspection. The first 60 of the verification packages make up the first random sample as defined by the CPRT Action Plan. The second sample pertains to safe shutdown systems and consists of 44 from the first sample of 60 and an additional 16 packages. The QIs used for reinspection and documentation review were QI-019, Revision 2, and QI-020, Revision 0, respectively.

Physical reinspections are approximately 95% complete. A total of 65 deviations have been identified, relating primarily to Hilti bolt embedment, hole spacing and edge distance in base plates, and pipe clearances. Documentation review is approximately 82% complete with 51 deviations identified. All deviations are currently being reviewed for validity and safety significance by ERC.

Status of NRC Inspection Activity

The NRC inspector has reviewed QI-019, Revision 2, and QI-020, Revision 0. Six physical reinspections representing 10% of the first

random sample were witnessed by the NRC inspector during September 1985. No reinspections were witnessed during this report period.

No NRC violations or deviations were identified.

t. Reinspection of Pipe Whip Restraints

Status of CPRT Activity

ERC has completed 13 out of the planned 110 reinspections of pipe whip restraints as of October 26, 1985.

Status of NRC Inspection Activity

(1) The following two ERC reinspections of pipe whip restraints were witnessed by the NRC inspector:

Verification Packag	e No. Suppo	ort Identification	Unit
I-S-PWRE-052	CP2-C	SSSMR-05	2
I-S-PWRE-518	M40-S	2-0584	2

(2) During the above reinspections, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations:

<u>I-S-PWRE-052</u>: (a) The distance between two capture plates on a moment restraint was 9 5/16 inches, which was less than the allowed distance of 9 1/2 +/- 1/8 inch; and (b) distance from the centerline of one capture plate to the centerline of a weld was 3 3/8 inches, which was greater than the allowed distance of 3 1/8 +/- 1/8 inch.

I-S-PWRE-518: The grout did not completely cover the shim plate underneath the top baseplate.

Dispositions of the above findings are open items (446/8511-0-08 and 446/8511-0-09).

(3) ERC also noted the following deficiencies outside of the defined inspection scope:

<u>I-S-PWRE-052</u>: One of the Richmond inserts on concrete column No. 15 overlapped a Hilti bolt embedment for a pipe support on the adjacent face of the same column by approximately 2 3/4 inches. The Hilti bolt centerline was about 5 inches above the Richmond insert centerline. The impact of this condition was to be evaluated.

I-S-PWRE-518: There was a crater chipped out of the grout.

Dispositions of the above findings are open items (446/8511-0-10 and 446/8511-0-11).

No NRC violations or deviations were identified.

u. Reinspection of Instrument Pipe/Tube Supports

Status of CPRT Activity

ERC has completed 42 out of the planned 102 ruinspections of instrument pipe/tube supports as of October 26, 1985.

Status of NRC Inspection Activity

 The following four ERC reinspections of instrument pipe/tube supports were witnessed by the NRC inspector during this report period:

Verification Packag	e No. Instrument Tag No.	Unit No.
I-S-INSP-004	1-FT-156	1
I-S-INSP-017	1-FI-245-78	1
I-S-INSP-024	1-P15-3384	1
I-S-INSP-057	1-LT-459	1

(2) During the above reinspections, ERC identified the following conditions to the NRC inspector as subject to evaluation as potential deviations:

<u>I-S-INSP-004</u>: (a) Support Nos. 4B, 4C, 4D, 4E, and 4K had bolts without the minimum 70% of specified torque; and (b) support No. 4I did not have the serrated groove of the spring nut aligned with the channel ridge.

<u>I-S-INSP-017</u>: (a) Support No. 170 had a bolt without the required one thread past the face of the nut; (b) support Nos. 17I, 17K, 17L, 17M, 17N, and 17Q had bolts without the minimum 70% of specified torque; (c) support No. 17K did not have the serrated groove of the spring nut aligned with the channel ridge; and

(d) support Nos. 17A, 17J, and 17K had different type instrument tubing clamps than specified on the drawing.

<u>I-S-INSP-024</u>: (a) Support No. 24H had an undersized weld; (b) support No. 24H had no visible heat numbers on the baseplate; (c) support No. 24H had a structural tubing length of 56 3/4 inches, which is 1/2 inch greater than the maximum allowable length specified on the drawing; and (d) support No. 24H had a different type of instrument tubing clamp than specified on the drawing.

<u>I-S-INSP-057</u>: (a) Support Nos. 57A and 57E did not have the serrated grooves of the spring nut aligned with the channel ridge; (b) support Nos. 57N and 57P had spring nuts used in lieu of required hex nuts; and (c) support No. 57N had a bolt that did not have minimum 70% of specified torque.

Dispositions of the above findings are open items (445/8514-0-35 through 445/8514-0-38).

(3) The following two ERC reinspections were independently inspected by the NRC inspector:

Verification Package	No. Instrument Tag No.	Unit No.
I-S-INSP-007	1-PT-405	1
I-S-INSP-028	1-PI-2467	1

While performing the above independent inspections, it was noted that on support Nos. 007D and 028A, the serrated grooves on the spring nuts did not align with the channel clamping ridge. This is required by attribute 4.5 of QI-055, "Reinspection of Instrument Pipe/Tube Supports." However, the ERC inspectors signed off this attribute as being acceptable. This is an NRC deviation (445/8514-D-04).

8. Unresolved Items

Unresolved items are matters for which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. Seven unresolved items disclosed during the inspection are discussed in paragraphs 6.g. 6.h. 6.j. 7.a. 7.c. and 7.e.

9. Exit Interview

An exit interview was conducted on November 1, 1985, with the applicant representatives denoted in paragraph 1 of this appendix. During this interview, the NRC inspectors summarized the scope and findings of the inspection. The applicant acknowledged the findings.