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March 18, 1988

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Re: Texas Utilities Electric Company, et al
(Comanche Peak Steam Electric Station,
Units 1 & 2); Docket Nos. 50-445 and 50-446 - CL

Dear Administrative Judges:

Attached, for your information, is a copy of letter of even date from W. G. Counsil to the Nuclear Regulatory Commission, transmitting the SRT approved errata pages to the Collective Evaluation Report and the completed External Source Issues Matrix (Appendix D).

Respectfully submitted,

Robert A. Wooldridge

RAW/klw
Enclosure
cc: Service List

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TUELECTRIC

Log # TXX-88328
CPRT-1114
File # 10068

March 18, 1988

William G. Counsil
Executive Vice President

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
CPRT COLLECTIVE EVALUATION REPORT (CER) ERRATA PAGES
AND APPENDIX D

Gentlemen:

We transmit herewith the SRT approved errata pages to the Collective Evaluation Report and the completed External Source Issues Matrix, Appendix D.

Insert these changes by replacing existing pages within the CER with the errata pages. Revision bars on each errata page are used in the margins to indicate the revised text. Appendix D of the CER should be placed in sequence behind the tab "Appendicies".

Very truly yours,

W. G. Counsil

W. G. Counsil

By: J. S. Marshall
J. S. Marshall
Generic Licensing Manager

TLS/grr

Enclosures

c - Mr. R. D. Martin, Region IV
Resident Inspectors, CPSES (3)

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COLLECTIVE EVALUATION REPORT (Cont'd)

Part I - EXECUTIVE SUMMARY

1.0 INTRODUCTION

1.1 Background

The Comanche Peak Response Team (CPRT) was established by TU Electric to investigate various issues regarding the Comanche Peak Steam Electric Station (CPSES). The CPRT is comprised of third-party individuals who have had no previous involvement in the CPSES activities that they review.

The CPRT program consisted of two principal types of activities. First, the CPRT performed investigations to determine the adequacy of various types of programs and hardware at CPSES and made recommendations for corrective action where required. Second, having concurred with the Project's plans for addressing these recommendations, the CPRT is overviewing implementation of the corrective actions. Activities that are being overviewed include those of various TU Electric programs (including the Engineering Functional Evaluation and the Technical Audit Program) being conducted to provide additional assurance to TU Electric that the corrective actions are adequately implemented by the Project.

As part of its first set of duties, the CPRT investigated various issues raised by the Nuclear Regulatory Commission (NRC) Technical Review Team (TRT) regarding the design, construction, and testing of CPSES and the quality assurance (QA) programs associated with each of these activities. The results of these investigations have been reported in 46 Issue-Specific Action Plan (ISAP) Results Reports. Each ISAP was designed to ensure the identification and resolution of problems related to an identified issue or issues and the corresponding root causes. To ensure that the ISAP Results Reports encompassed issues raised by external sources (including NRC inspectors, the intervenors and the Licensing Board in the CPSES operating license proceeding), the CPRT developed a list of external source issues (ESIs), compared these issues against those addressed by the ISAPs, and determined that the external source issues (related to quality of construction, construction QA and testing) were adequately covered by the ISAPs. A summary of the methodology used in the resolution of the ESIs is presented in Appendix D. Additionally, the CPRT investigated certain design issues under a self-initiated Design Adequacy Program (DAP) and reported its results in three Discipline-Specific Action Plans (DSAPs). Finally, the CPRT performed a self-initiated evaluation of the quality of construction of CPSES, Units 1 and 2. The results of this evaluation are reported in the Results Report for ISAP VII.c, "Construction Reinspection/Documentation Review".

1.2 Purpose of the Collective Evaluation Report

This Collective Evaluation Report presents the CPRT's collective evaluation based on the information contained in the Results Reports for the 46 ISAPs for TRT issues and ISAP VII.c. One ISAP (VII.a.9, "Adequacy of Purchased Safety-Related Material and Equipment") was not completed as of the date of this report, however, on the basis of the results available, it is anticipated that the VII.a.9 Results Report, when issued, will not alter the conclusions reached here. The purpose of the collective evaluation is to draw overall conclusions regarding the quality of construction, the current and historic quality assurance program as it pertains to

construction, and the testing program. One part of collective evaluation is to determine whether the data gathered by the CPRT collectively indicate a need for additional corrective action for CPSES programs, hardware, and tests that was not apparent from a review of the individual findings in the ISAP Results Reports.

The Collective Evaluation Report focuses on the construction of the plant (i.e., plant construction, including the construction QA program and the testing program) and does not specifically address the design. The construction evaluation addresses the implementation of the CPSES design in effect in October 1985 (or later applicable design*). A collective evaluation of the results from design-related DSAPs was not required because TU Electric has implemented the Corrective Action Program (CAP). The CAP includes a comprehensive validation of the safety-related design of CPSES, while ensuring complete programmatic and hardware corrective action for design. Relevant QA, hardware and testing information found during implementation of the DSAPs was transmitted to the group within CPRT responsible for those issues and was included in their collective evaluations.

1.3 Purpose of the Collective Significance Report

The CPRT will also prepare a Collective Significance Report. The Collective Significance Report will collectively evaluate the findings and conclusions in the Collective Evaluation Report and in the DSAPs, together with the results of the CPRT's overview of the Project's corrective actions and design-related activities of the CAP. Thus, the Collective Significance Report will provide an integrated evaluation of the design, construction, QA program and testing of CPSES.

1.4 Description of the CPRT Program

Initially, the CPRT was established to respond to specific issues raised by the NRC TRT. These issues were often the result of TRT inspections performed in areas that were the subject of concerns raised by other external sources. The CPRT's scope of responsibility was later enlarged to include the self-initiated DAP (which was subsequently reduced in scope as a result of TU Electric's decision to perform a comprehensive design validation) and the self-initiated review of the quality of construction performed under ISAP VII.c.

The quality of construction review examined safety-related hardware through use of a sampling program. The plant hardware was divided into thirty-two construction work categories to ensure coverage of plant equipment types and construction work processes. Safety-significant attributes were subjected to a physical reinspection, if accessible, or a quality documentation review, if generically inaccessible or not recreatable.

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* In the case of some ISAPs, other than ISAP VII.c, design information developed subsequent to October 1985 was employed.

Part I - EXECUTIVE SUMMARY (Cont'd)

Although the methodology employed by the CPRT under each of the ISAPs (and reported in its corresponding Results Report) varied somewhat from ISAP to ISAP, the ISAPs shared certain common features. These features are summarized below:

- Reinspections, documentation reviews, or other evaluations were undertaken to determine whether the activity in question was performed properly; deviations were identified for attributes that did not comply with requirements of the applicable design.

- When deviations in hardware were found, the deviations were evaluated to determine whether, if left uncorrected, they could have resulted in a failure of an item to perform its safety function. Any such deviation was classified as a construction deficiency (CD). In some cases, CPRT did not or could not determine whether a deviation could result in such a failure; such deviations were designated as unclassified deviations. Similarly, any QA program deviations identified during these reinspections and reviews were evaluated to determine whether a substantive revision of the QA program was needed to bring the program into compliance with applicable requirements or whether extensive evaluation would be required to determine the effect on the quality of construction. If either of these conditions was found to exist, then the deviations were classified as a QA/QC program deficiency.

- If no deviation for an attribute was determined to be a construction deficiency, an engineering evaluation was performed of the deviations to determine whether they indicated a type of flawed construction such that it was likely that an undetected construction deficiency existed in the uninspected portion of a population. Such deviations were classified as adverse trends (ATs) if an undetected construction deficiency was concluded to be likely to exist, or as unclassified trends (UTs) if it was uncertain whether a deficiency was likely to exist.

- For each finding (i.e., construction deficiency, unclassified deviation, QA/QC program deficiency, adverse trend, or unclassified trend), analyses were performed to identify its root cause and generic implications.

- The CPRT made recommendations for corrective action for each finding based upon the results of its root cause and generic implications analyses. In general, corrective actions were recommended to ensure the adequacy of existing hardware and of future programs.

- Corrective action plans developed by the Project for CPRT findings are subject to review and concurrence by the CPRT. The CPRT is also overviewing the Project's corrective action implementation activities to ensure resolution of the identified concerns.

The above activities were or are subject to the CPRT QA program. The QA program provided guidelines for the use of checklists and instructions and

preparation of documentation of the results of CPRT's reinspections and reviews, and included the performance of audits.

The process described above was designed to yield a conservative result. The CPRT adopted and TU Electric accepted this conservative approach so that the resulting corrective action programs would serve to make the quality of construction evident and acceptable prior to operation. Examples of elements in the evaluation process (and separate evaluations being performed by the Project) that illustrate this conservatism are discussed below.

The approach taken to implement the definition of a construction deficiency would result in the identification of construction deficiencies for items that did not meet code-allowable limits, but that would not have failed under design loading conditions; and for deviations that, if left uncorrected, would not have resulted in a failure of any structure, system, or component to perform its intended safety function. For example, a deviation on a pipe support could be classified as a construction deficiency even though adjacent pipe supports would prevent the associated piping from becoming overstressed under the design loading conditions. Thus, the existence of a construction deficiency, identified through such a conservative evaluation, is not sufficient to imply that the safety of the plant would have been adversely affected if the construction deficiency had been left uncorrected. Similarly, the definitions of adverse trend and unclassified trend are also conservative. Both are based upon the definition of construction deficiency, and both involve additional conservatism in the extrapolation from found conditions that were not construction deficiencies.

Further illustration of the conservatism in the CPRT evaluations for construction deficiencies is being provided by separate Project evaluations of each construction deficiency and of each unclassified construction deviation identified by the CPRT. These Project evaluations are determining whether the found conditions, had they remained uncorrected, could have precluded achieving or maintaining a safe plant condition. While these evaluations are not yet complete, preliminary indications are that few, if any, of the evaluated conditions would have had such an impact. Thus, these evaluations are expected to confirm the conservatism of the CPRT program in most instances, although there will be no impact on the committed corrective action programs. The conclusions from these Project evaluations will be provided in the Collective Significance Report.

1.5 Relationship between the CPRT Program and Project Activities

Each deviation identified by the CPRT was reported to TU Electric for input into the CPSES nonconformance systems. Additionally, during the course of its investigations, the CPRT identified findings regarding the adequacy of the programs, design, and hardware at CPSES, and it made recommendations for corrective action for these findings to the Project. TU Electric's resolution of the CPRT's recommended corrective action for each finding is subject to review and concurrence by the CPRT.

The Project has also established the CAP. The CAP consists of two principal elements. First, the CAP includes a comprehensive validati

Part I - EXECUTIVE SUMMARY (Cont'd)

of the safety-related design of CPSES to assure that the design conforms with licensing commitments. Second, the CAP includes a Post Construction Hardware Validation Program (PCHVP), which will evaluate the conformance of the safety-related hardware at CPSES to the validated design and will implement actions to reconcile that validated design with the hardware. The hardware validation is performed for those attributes where the CPRT recommended reinspection, where design validation resulted in new safety-related attributes or a change to more stringent acceptance criteria for an attribute, or where design validation led to changes in the design.

The CPRT is overviewing implementation of the corrective actions for its findings. It is also overviewing implementation of the TAP and EFE programs, which provide additional assurance of the adequacy of implementation of the CAP.

1.6 Structure of the Collective Evaluation Report

The Collective Evaluation is divided into five parts (excluding the executive summary).

- Part II of the report is an introduction to the report.
- Part III of the report presents a collective evaluation of the quality of construction.
- Part IV of the report presents a collective evaluation of both the current and historic QA program for construction.
- Part V of the report presents a collective evaluation of the testing-related ISAPs and CPRT findings that relate to activities under the jurisdiction of the TU Electric startup group.
- Part VI of the report presents the CPRT's overall conclusions from this collective evaluation.

Parts III through VI are summarized below.

Part I - EXECUTIVE SUMMARY (Cont'd)

2.0 QUALITY OF CONSTRUCTION

2.1 Introduction and Background

The collective evaluation of the quality of construction of CPSES relied primarily upon the Results Report for ISAP VII.c plus information from the Results Reports for other ISAPs that pertain to the quality of construction. Using all of this information, the CPRT arrived at conclusions regarding the quality of construction for CPSES, Units 1 and 2, as of October 1985. In developing the conclusions, the findings identified in the Results Report for ISAP VII.c and the other ISAPs were evaluated collectively to determine whether these findings, when considered together, indicate generic conditions that require further corrective action for plant hardware and programs that was not evident from an evaluation of the findings individually.

The ISAP VII.c investigation began with a reinspection of random samples of as-built safety-related items in CPSES Units 1 and 2 that had previously been inspected and accepted by Quality Control (QC). The reinspections determined whether the items conformed with the requirements of the applicable design. In cases where reinspections could not be performed because attributes of the items were generically inaccessible or non-reinspectable, reviews were performed of inspection documentation to determine whether the documentation provided evidence that the as-built items conformed with the design requirements that were applicable at the time the item was constructed and inspected. Deviations from applicable requirements, whether identified through reinspections or documentation reviews, were evaluated to determine whether corrective action was warranted to ensure adequacy of the hardware. Deviations that were determined to warrant corrective action were "findings", as discussed below. For each finding, a root cause analysis and a generic implications analysis were performed. Based on the results of these analyses, corrective actions were recommended to ensure the adequacy of existing hardware and of future programs.

For the purpose of performing the reinspections and documentation reviews, the CPRT divided items in the plant into construction work categories (CWCs), such as Cable Trays, Structural Steel, Conduit, and Concrete Placement. The scope of each CWC was selected such that the items within the CWC were reasonably homogeneous in terms of the work activities needed to install or construct the items and the quality-related attributes associated with the installed hardware. Thirty-two CWCs in four disciplines (electrical, mechanical, structural, and supports) were identified in this manner.

The work activities that comprise each CWC were divided into attributes for purposes of the reinspections and documentation reviews. An attribute is a quality characteristic (or set of related characteristics) of a safety-related component or construction activity that, if it does not satisfy applicable acceptance criteria, could impair the ability of the component to perform its safety function.

A random sample of items in each CWC was selected for reinspection. The number of items in each sample was selected so that the sample size would

Part I - EXECUTIVE SUMMARY (Cont'd)

subject to weak procedures. Since the sample screen was concluded to have detected all similar problems with construction and inspection procedures, and since corrective actions (including the Specification, Procedure, and Drawing Update Program) are being taken for the identified weaknesses, the CPRT concludes that no further corrective action is warranted.

Construction Implementation

Twelve findings in this category involved cases of inattention to detail by construction personnel. These findings were isolated, were not indicative of a programmatic problem, and were corrected. Additionally, thirteen findings in this category involved weaknesses in supervision of construction activities and in craft training. In each case, the resulting deviation rates were relatively high, as would be expected for weaknesses of this type; the sample screen was concluded to have identified the significant impacts of these weaknesses. Additionally, the findings related to training were largely confined to pipe supports and instrument tube supports, which are subject to extensive reinspection programs. Since corrective actions are being taken for the areas identified as impacted by the weaknesses, the CPRT concludes that additional corrective action for existing hardware is not warranted. In order to provide additional assurance that similar weaknesses will not recur, the CPRT is recommending that engineering assure that the scope of current craft training programs for supports is adequate to ensure acceptable future installations and that training programs for craft supervisors be reviewed to verify their adequacy.

Construction Configuration Control

The CPRT identified three findings pertaining to construction configuration control for specific design changes. These findings were isolated in nature and resulted from unique circumstances. Since the CPRT identified substantial evidence that configuration control of CPSES was acceptable, the CPRT concluded that these findings collectively did not indicate a need for corrective action in addition to that taken for the individual findings. The CPRT also identified two findings pertaining to a failure to backfit changes to generic designs. The CPRT determined that the implications of these findings were limited to certain areas where generic designs were used, and that either these areas are being subjected to extensive reinspection programs by the Project or they have already been determined to be in conformance with current design requirements. Finally, the CPRT identified four findings involving failure to backfit changes in work process controls. In order to address the potential implications of these findings for existing hardware, the CPRT is making the following corrective action recommendation:

> Review historical inspection procedures to identify time periods in which safety-significant attributes were not subject to an adequate inspection. For those identified attributes not scheduled for reinspection in PCHVP, perform an engineering evaluation of the identified instances, including consideration of available inspection data, to bound the potential safety

Part I - EXECUTIVE SUMMARY (Cont'd)

consequences of deviations that may exist over the estimated range of as-built conditions. In cases where acceptable bounds can not be established, obtain additional data through reinspections or other means as necessary to demonstrate the adequacy of the installed hardware.

Subsequent Changes

Four of the findings in this category involved damage to plant equipment that had been completed and inspected. The Project has had a long-standing commitment to perform general area walkdowns prior to operation of the plant, in part to detect and correct incidents of damage. Such walkdowns should detect and result in correction of the type of damage found by the CPRT as well as any other likely types of damage. Eleven other findings in this category pertained to less-than-adequate instructions from Startup to construction personnel who adjusted pipe supports, inadequate or no inspections for modifications to completed pipe supports, and removal and improper replacement of retaining devices for pipe supports. In each case, the CPRT determined that the implications of these findings were limited to pipe supports or electrical hardware attributes that are being subject to extensive reinspection programs by the Project. Finally, three other findings in this category were unrelated and not indicative of programmatic problems. Therefore, the CPRT concludes that no additional corrective action is warranted for the existing hardware. In order to provide additional assurance that similar problems will not recur in the future, the CPRT is recommending that certain procedures for maintenance and modification activities be reviewed to verify that the procedures contain sufficient inspection provisions to ensure that potentially impacted hardware is restored to compliance with design criteria.

Design Information

The eleven findings in this category involve various engineering outputs. Since the Project has initiated extensive remedial programs to ensure that the design of CPSES is adequate and to validate that the installed hardware conforms with the validated design, generic hardware and design implications associated with these findings are within the scope of these remedial Project programs.

Documented Evidence of Hardware Quality

The CPRT reviewed inspection documentation to determine the quality of construction for those safety-related attributes that were non-recreatable or generically inaccessible for all sample items. In each situation where QC inspection documentation was relied on as the basis for hardware acceptability, the CPRT determined that the documentation was adequate for that purpose based on the following factors:

- An inspection report or other inspection documentation existed for the hardware.

- The inspection was performed by a qualified or capable inspector.

Part I - EXECUTIVE SUMMARY (Cont'd)

- The acceptance criteria for the inspection were sufficient to verify the attribute as it pertains to the safety function of the hardware.

- The available evidence reveals no other factors adverse to acceptable inspector performance.

In instances where review of these factors identified that the documentation was not adequate to support hardware conclusions, corrective actions are being taken by the Project.

2.4 Conclusions

In summary, the following conclusions have been reached:

- The multifaceted CPRT program, through use of the 95/5 sample screen, trend analysis, root cause analysis, generic implication analysis, and collective evaluation, provided a robust evaluation of the quality of construction.

- The safety significance evaluations by the CPRT were conservative with regard to definition and methodology.

- The reinspection/documentation review sample was extensive.

- Quality assurance documentation, where relied upon, was adequate to provide evidence of hardware quality for generically inaccessible and non-recreatable attributes. In the limited cases where the documentation for such attributes was not able to be verified as being reliable, corrective actions are being taken by the Project.

- Approximately 98 percent of the reinspection and documentation review points were determined to be in conformance with applicable design requirements.

- Both corrective and preventive actions are being taken for the findings identified by CPRT.

- With one exception for which additional remedial action is being recommended by CPRT, the collective evaluation of the findings did not identify any programmatic problem related to the quality of construction that was not already being addressed by the corrective actions being taken by the Project.

Based upon the above, the CPRT concludes that its program has been sufficient to identify programmatic deficiencies affecting the quality of construction of CPSES, and that upon satisfactory implementation of the corrective action for deviations and findings identified by the CPRT, there will be reasonable assurance that the systems, structures and components of CPSES will meet the significant, safety-related requirements of the October 1985 design (or later applicable design).

Part I - EXECUTIVE SUMMARY (Cont'd)

3.0 QA PROGRAM COLLECTIVE EVALUATION

3.1 Introduction

The purpose of the QA program collective evaluation was to determine the overall adequacy of both the historical and current CPSES construction quality assurance programs. The collective evaluation considered the adequacy of the TU Electric QA program as well as the QA programs of Brown & Root and the major construction subcontractors.

The basic approach for conducting this evaluation was to utilize information gathered during implementation of CPRT activities to reach a conclusion on the adequacy of the QA program. This information included the results of twelve ISAPs that addressed various aspects of the CPSES QA program as well as the results of reinspections, documentation reviews, and other investigations performed in connection with the other ISAPs, including ISAP VII.c. Where necessary to provide a sufficient basis for evaluating aspects of the CPSES QA program, additional investigations were performed by CPRT to supplement the information gathered during implementation of the ISAPs. CPRT's investigations included review of QA manuals and procedures and their implementation, and other QA-related documents and records.

The information pertaining to each Criterion* was then evaluated to determine the adequacy of the CPSES current and historical QA program under that Criterion, including the adequacy of the corrective action being taken for the findings under each Criterion. This evaluation was performed by comparing the information against the program elements for each Criterion set forth in the CPSES Final Safety Analysis Report (FSAR) and the NRC Standard Review Plan (SRP) to the extent committed to by TU Electric. The evaluation included an assessment of CPRT findings related to the QA program, the identification of the root causes and corrective action for those findings, and a determination of whether the findings collectively indicate a need for additional corrective action that was not apparent from a review of the individual findings. The results of these evaluations were then combined in order to reach overall conclusions concerning the adequacy of the current and historical CPSES construction QA program.

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* Because TU Electric has instituted a comprehensive program to validate the CPSES safety-related design, Criterion III was not included in the QA program collective evaluation. All design-related concerns identified by the CPRT, including findings whose root causes were attributable to design problems, have been reported to TU Electric for consideration during its design validation process. In addition, CPRT's collective evaluation focused on the construction QA program. No attempt was made to consider the impact of possible problems that may have existed in the various design organizations on any 10CFR50, Appendix B Criterion or on the overall historical QA program, except when problems affecting the construction QA program were referred to the CPRT QA/QC Review Team by the CPRT Design Adequacy Program. In addition, no attempt was made to evaluate the adequacy of the current QA program as it applies to design activities now underway.

Part I - EXECUTIVE SUMMARY (Cont'd)

Because each of the major subcontractors has completed its work at CPSES, these subcontractors' current QA programs were not evaluated. The HVAC (heating, ventilating, and air conditioning) contractor, Bahnson Service Company, was terminated by TU Electric and an extensive evaluation and corrective action program covering Bahnson's work has been implemented by TU Electric. Because of these corrective actions, there was no need to evaluate the adequacy of Bahnson's program under every Criterion. However, the adequacy of TU Electric's performance in controlling Bahnson's compliance to QA requirements was evaluated. In a number of instances, CPRT also determined that evaluation of other subcontractors' QA programs under certain elements was not necessary, either because those subcontractors' scopes of work did not involve the particular element involved, or because results of evaluation of the contractors' work under ISAP VII.c demonstrated the adequacy of the installed hardware.

3.2 Evaluation of CPSES QA Program Under the Criteria of 10CFR Part 50, Appendix B

3.2.1 Evaluation of Current CPSES Construction QA Programs

The CPRT determined that the current TU Electric and Brown & Root construction QA programs are effective and adequately address the applicable program elements set forth in the SRP and in Section 17.1 of the CPSES FSAR under each of the 18 Criteria of 10CFR50, Appendix B (these programs were not evaluated under Criterion III, Design Control, because it does not pertain to the QA program for construction). Therefore, the CPRT concludes that the current CPSES construction QA program is effective and complies with 10CFR50, Appendix B.

3.2.2 Evaluation of the Historical CPSES Construction QA Program

The CPRT determined that the historical TU Electric and Brown & Root construction QA programs adequately addressed the program elements set forth in the SRP and in Section 17.1 of the CPSES FSAR for the following Criteria of 10CFR50, Appendix B: Criterion IV, Procurement Control; Criterion VI, Document Control; Criterion VIII, Identification and Control of Materials, Parts and Components; Criterion IX, Control of Special Process; Criterion XI, Test Control; Criterion XII, Control of Measuring and Test Equipment; Criterion XIII, Handling, Storage and Shipping; Criterion XIV, Inspection, Test and Operating Status; Criterion XVI, Corrective Action; and Criterion XVII, Quality Assurance Records. Therefore, the CPRT concludes that the historical TU Electric and Brown & Root construction QA programs were adequate under these Criteria of Appendix B.

The CPRT also concluded that the historical TU Electric and Brown & Root construction QA programs were generally adequate to meet the program elements specified in the SRP and in Section 17.1 of the CPSES FSAR for Criteria I, II, V, VII, X, XV, and XVIII. Therefore, the CPRT concluded that the historical TU Electric and Brown & Root construction QA programs were generally adequate under these Criteria, except for the specific problems described below:

Part I - EXECUTIVE SUMMARY (Cont'd)

Criterion I, Organization

The CPRT determined that the historical TU Electric QA program, due to the experience level of TU Electric personnel, was not always effective in identifying and ensuring correction of problems in the QA programs of contractors at CPSES. However, the impacts of management inexperience were limited to certain construction programs (most notably in the oversight of Bahnson's work) where reinspections are being performed. To prevent recurrence of this problem, TU Electric has hired personnel with greater nuclear experience, and the CPRT has determined that the level of experience has substantially increased and is now adequate.

Criterion II, Quality Assurance Program

The CPRT identified certain TU Electric procedures not in conformance with QA program requirements, failure of the TU Electric program to require regular management assessments of the QA program, and weaknesses in certain aspects of the Brown & Root training and indoctrination program. Corrective action to prevent recurrence of these problems includes revisions of TU Electric procedures, addition of requirements for regular TU Electric management review of the QA program, and improvements to the Brown & Root training and indoctrination program. CPRT concludes that these actions are sufficient to correct and prevent recurrence of problems in the historical CPSES QA program under Criterion II.

Criterion V, Instructions, Procedures and Drawings

The CPRT identified problems with certain TU Electric and Brown & Root procedures for inspection, construction and control of activities after turnover of items from construction to Startup, and backfit of design changes. These problems were attributable to lack of detail in engineering specifications, weak procedures governing preparation and review of procedures, and the level of experience of personnel preparing procedures, as well as lack of a formal document and procedure hierarchy for CPSES. In addition, particular instances were identified in which Brown & Root personnel failed to follow construction procedures, which were attributed to training problems, weak programs, and isolated personnel errors. Corrective action to prevent recurrence of the problems in the TU Electric and Brown & Root programs includes revision of TU Electric and Brown & Root procedures where required, including those governing procedure preparation and review, the hiring of more experienced personnel to prepare and review procedures, additional training, and the addition of requirements governing backfits when procedures or specifications are revised. Also, hardware problems found to have resulted from these problems are being corrected. The CPRT concluded that these actions are sufficient to correct and prevent the recurrence of problems in the historical CPSES QA program under Criterion V.

Criterion VII, Control of Purchased Equipment, Material and Services

The CPRT determined that the TU Electric historical program under Criterion VII was not effective with respect to control of work

investigated under a particular Criterion, that CPRT reinspections of the contractor's work did not indicate any inadequacies in their historical QA program.

Thus, the historical CPSES construction QA program was generally adequate under each of the Criteria of 10CFR50 Appendix B, with the exception of specific problems, including substantial problems with the Bahnson program, which have been corrected and for which action has been taken to prevent recurrence.

3.3 CPRT Conclusions Regarding the CPSES QA Program

The CPRT has evaluated the adequacy of the current QA/QC program for construction of CPSES under each of the applicable Criteria of 10CFR50, Appendix B. In each case, the CPRT has determined that the CPSES current QA program is effective and complies with the CPSES FSAR, Section 17.1 and applicable elements of the NRC Standard Review Plan. Additionally, the CPRT has determined that appropriate corrective action, including action to prevent recurrence, has been identified and is underway to resolve weaknesses in the historical QA program for construction of CPSES. Therefore, the CPRT concludes that the current CPSES QA program for construction of CPSES effectively implements 10CFR50, Appendix B.

The CPRT has also evaluated the adequacy of the historical QA program for construction of CPSES. In general, implementation of the historical QA program was effective and satisfied the applicable requirements of 10CFR50, Appendix B. However, the CPRT did identify weaknesses in limited areas of the QA program related to Criteria I, II, V, VII, X, XV, and XVIII of 10CFR50, Appendix B. Conclusions on the adequacy of the historical program in complying with Criteria IV, VII, and VIII requirements are based upon current information, and will be reassessed after completion of ISAP VII.a.9. Based on the data currently available, it is not anticipated that the overall evaluation will be substantially affected by the final ISAP VII.a.9 results.

The major areas of concern in the historical QA program under these Criteria involved instances of inadequate construction and inspection procedures as related to Criteria V and X requirements and the lack of timely identification and correction of problems with Bahnson as related to Criterion VII. A TU Electric audit program that was not always effective in the detection and resolution of problems and a lack of a well-coordinated QA surveillance program to complement the audit program contributed to these problems. In addition, until 1986 TU Electric did not have a formal method of regularly assessing the adequacy of their QA program, as required by Criterion II. It is the conclusion of the CPRT that the primary cause of the problems in these limited areas was a lack of nuclear and quality assurance experience on the part of management and supervisory personnel.

One recommendation resulted from both the QA program and quality of construction collective evaluations. This recommendation, discussed in detail in Section 8.4 of Part III, involves review of historical QC inspection procedures to identify periods of time during which some safety-related attributes may not have been inspected and to evaluate the

safety consequences of deviations that may exist. Appropriate corrective action to resolve the remaining QA program related findings noted by the CPRT has been or is being taken. The corrective actions include a substantial increase in the level of nuclear and quality assurance experience for TU Electric management and supervisory personnel, establishment of an effective method of annually evaluating the adequacy of the TU Electric QA program, improvements to increase the effectiveness of the TU Electric audit and QA surveillance programs, improvements in the methods used to monitor and control the performance of site subcontractors, and the termination of Bahnson from further work at CPSES.

In addition, the areas of construction that were related to these findings are being reinspected and/or re-evaluated and, where required, corrected. In particular, a program for the reinspection, evaluation, and correction of problems in Bahnson work is being implemented. In light of the extensive corrective actions taken in response to the individual findings, the CPRT concludes that no additional actions, other than the one discussed above, are warranted for the findings when considered collectively.

Part I - EXECUTIVE SUMMARY (Cont'd)

5.4 Overall Collective Evaluation Conclusions

Upon completion of all the corrective actions recommended by the CPRT, including those resulting from collective evaluation, there will be reasonable assurance that the systems, structures and components of CPSES meet the significant, safety-related requirements of the October 1985 design (or later applicable design).

Part II - INTRODUCTION

1.0 BACKGROUND

The Comanche Peak Response Team (CPRT) was established by TU Electric to investigate various issues regarding the Comanche Peak Steam Electric Station (CPSES). The CPRT is comprised of third-party individuals who have had no previous involvement in the CPSES activities that they review.

The CPRT program consisted of two principal types of activities. First, the CPRT performed investigations to determine the adequacy of various types of programs and hardware at CPSES and made recommendations for corrective action where required. Second, having concurred with the Project's plans for addressing these recommendations, the CPRT is overviewing implementation of the corrective actions. Activities that are being overviewed include those of various TU Electric programs (including the Engineering Functional Evaluation and the Technical Audit Program) being conducted to provide additional assurance to TU Electric that the corrective actions are adequately implemented by the Project.

As part of its first set of duties, the CPRT investigated various issues raised by the Nuclear Regulatory Commission (NRC) Technical Review Team (TRT) regarding the design, construction, and testing of CPSES and the quality assurance (QA) programs associated with each of these activities. The results of these investigations have been reported in 46 Issue-Specific Action Plan (ISAP) Results Reports. Each ISAP was designed to ensure the identification and resolution of problems related to an identified issue or issues and the corresponding root causes. To ensure that the ISAP Results Reports encompassed issues raised by external sources (including NRC inspectors, the intervenors and the Licensing Board in the CPSES operating license proceeding), the CPRT developed a list of external source issues (ESIs), compared these issues against those addressed by the ISAPs, and determined that the external source issues (related to quality of construction, construction QA and testing) were adequately covered by the ISAPs. A summary of the methodology used in the resolution of the ESIs is presented in Appendix D. Additionally, the CPRT investigated certain design issues under a self-initiated Design Adequacy Program (DAP) and reported its results in three Discipline-Specific Action Plans (DSAPs). Finally, the CPRT performed a self-initiated evaluation of the quality of construction of CPSES, Units 1 and 2. The results of this evaluation are reported in the Results Report for ISAP VII.c, "Construction Reinspection/Documentation Review".

In addition, concerns raised through the TU Electric SAFETEAM program, which provides an opportunity for utility and contractor personnel to raise and receive responses to concerns, were reviewed for potential impact on CPRT conclusions; none was identified.

2.0 PURPOSE OF THE COLLECTIVE EVALUATION REPORT

This Collective Evaluation Report presents the CPRT's collective evaluation based on the information contained in the Results Reports for

Part II - INTRODUCTION (Cont'd)

the 46 ISAPs for TRT issues and ISAP VII.c. One ISAP (VII.a.9, "Adequacy of Purchased Safety-Related Materials and Equipment") was not completed as of the date of this report, however, on the basis of the results available, it is anticipated that the ISAP VII.a.9 Results Report, when issued, will not alter the conclusions reached here. The purpose of the collective evaluation is to draw overall conclusions regarding the quality of construction, the current and historic quality assurance program as it pertains to construction, and the testing program. One part of collective evaluation is to determine whether the data gathered by the CPRT collectively indicate a need for additional corrective action for CPSES programs, hardware, and tests that was not apparent from a review of the individual findings in the ISAP Results Reports.

The Collective Evaluation Report focuses on the construction of the plant (i.e., plant construction, including the construction QA program and the testing program) and does not specifically address the design. The construction evaluation addresses the implementation of the CPSES design in effect in October of 1985 (or later applicable design*). A collective evaluation of the results from design-related DSAPs was not required because TU Electric has implemented the Corrective Action Program (CAP). The CAP includes a comprehensive validation of the safety-related design of CPSES that is providing the overall conclusion regarding design, while ensuring complete programmatic and hardware corrective action for design. Relevant QA, hardware and testing information found during implementation of the DSAPs was transmitted to the group within CPRT addressing those issues and was included in their collective evaluations.

3.0 PURPOSE OF THE COLLECTIVE SIGNIFICANCE REPORT

The CPRT will also prepare a Collective Significance Report. The Collective Significance Report will collectively evaluate the findings and conclusions in the Collective Evaluation Report and in the DSAPs, together with the results of the CPRT's overview of the Project's corrective actions and design-related activities of the CAP. Thus, the Collective Significance Report will provide an integrated evaluation of the design, construction, QA program and testing of CPSES.

4.0 DESCRIPTION OF THE CPRT PROGRAM

Initially, the CPRT was established to respond to specific issues raised by the NRC TRT. These issues were often the result of TRT inspections performed in areas that were the subject of concerns raised by other external sources. The CPRT's scope of responsibility was later enlarged to include the self-initiated DAP (which was subsequently reduced in scope as a result of TU Electric's decision to perform a comprehensive

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* In the case of some ISAPs, other than ISAP VII.c, design information developed subsequent to October 1985 was employed.

Part II - INTRODUCTION (Cont'd)

design validation) and the self-initiated review of the quality of construction performed under ISAP VII.c.

The quality of construction review examined safety-related hardware through use of a sampling program. The plant hardware was divided into thirty-two construction work categories to ensure coverage of plant equipment types and construction work processes. Safety-significant attributes were subjected to a physical reinspection, if accessible or a quality documentation review, if generically inaccessible or not recreatable.

Although the methodology employed by the CPRT under each of the ISAPs (and reported in its corresponding Results Report) varied somewhat from ISAP to ISAP, the ISAPs shared certain common features. These features are summarized below:

- Reinspections, documentation reviews, or other evaluations were undertaken to determine whether the activity in question was performed properly; deviations were identified for attributes that did not comply with requirements of the applicable design.

- When deviations in hardware were found, the deviations were evaluated to determine whether, if left uncorrected, they could have resulted in a failure of an item to perform its safety function. Any such deviation was classified as a construction deficiency (CD). In some cases, CPRT did not or could not determine whether a deviation could result in such a failure; such deviations were designated as unclassified deviations. Similarly, any QA program deviations identified during these reinspections and reviews were evaluated to determine whether a substantive revision of the QA program was needed to bring the program into compliance with applicable requirements or whether extensive evaluation would be required to determine the effect on the quality of construction. If either of these conditions was found to exist, then the deviations were classified as a QA/QC program deficiency.

- If no deviation for an attribute was determined to be a construction deficiency, an engineering evaluation was performed of the deviations to determine whether they indicated a type of flawed construction such that it was likely that an undetected construction deficiency existed in the uninspected portion of a population. Such deviations were classified as adverse trends (ATs) if an undetected construction deficiency was concluded to be likely to exist, or unclassified trends (UTs) if it was uncertain whether a deficiency was likely to exist.

- For each finding (i.e., construction deficiency, unclassified deviation, QA/QC program deficiency, adverse trend, or unclassified trend), analyses were performed to identify its root cause and generic implications.

Part II - INTRODUCTION (Cont'd)

- The CPRT made recommendations for corrective action for each finding based upon the results of its root cause and generic implications analyses. In general, corrective actions were recommended to ensure the adequacy of existing hardware and of future programs.

- Corrective action plans developed by the Project for CPRT findings are subject to review and concurrence by the CPRT. The CPRT is also overviewing the Project's corrective action implementation activities to ensure resolution of the identified concerns.

The above activities were or are subject to the CPRT QA program. The QA program provided guidelines for the use of checklists and instructions and preparation of documentation of the results of CPRT's reinspections and reviews, and included the performance of audits.

The process described above was designed to yield a conservative result. The CPRT adopted and TU Electric accepted this conservative approach so that the resulting corrective action programs would serve to make the quality of construction evident and acceptable prior to operation. Examples of elements in the evaluation process (and separate evaluations being performed by the Project) that illustrate this conservatism are discussed below.

The approach taken to implement the definition of a construction deficiency would result in the identification of construction deficiencies for items that did not meet code-allowable limits, but that would not have failed under design loading conditions; and for deviations that, if left uncorrected, would not have resulted in a failure of any structure, system, or component to perform its intended safety function. For example, a deviation on a pipe support could be classified as a construction deficiency even though adjacent pipe supports would prevent the associated piping from becoming overstressed under the design loading conditions. Thus, the existence of a construction deficiency, identified through such a conservative evaluation, is not sufficient to imply that the safety of the plant would have been adversely affected if the construction deficiency had been left uncorrected. Similarly, the definitions of adverse trend and unclassified trend are also conservative. Both are based upon the definition of construction deficiency, and both involve additional conservatism in the extrapolation from found conditions that were not construction deficiencies.

Further illustration of the conservatism in the CPRT evaluations for construction deficiencies is being provided by separate Project evaluations of each construction deficiency and of each unclassified construction deviation identified by the CPRT. These Project evaluations are determining whether the found conditions, had they remained uncorrected, could have precluded achieving or maintaining a safe plant condition. While these evaluations are not yet complete, preliminary indications are that few, if any, of the evaluated conditions would have had such an impact. Thus, these evaluations are expected to confirm the conservatism of the CPRT program in most

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION

1.0 INTRODUCTION AND BACKGROUND

The CPRT implemented a total of 46 ISAPs to investigate the issues raised by the NRC TRT and other external sources. One additional ISAP, ISAP VII.c, "Construction Reinspection/Documentation Review", was implemented as a self-initiated activity. These ISAPs are listed in Table 1.1.

The ISAP VII.c investigation produced most of the data relevant to the quality of construction of CPSES. In addition, 20 of the other 46 ISAPs addressed hardware-related issues. The results developed from implementation of these ISAPs constituted the principal sources of information for the collective evaluation of the quality of construction. Other sources of information are relevant hardware-related data from the Design Adequacy Program (DAP), the External Source Issues (ESI) matrix, and a review of TU Electric SAFETEAM files. Sections 1.1 and 1.2 summarize the methodology employed in ISAP VII.c and the 46 other ISAPs. Section 1.3 describes the methodology employed to perform the collective evaluation for the quality of construction.

1.1 Description of the Construction Reinspection/Documentation Review (ISAP VII.c)

The ISAP VII.c investigation began with a reinspection of random samples of as-built safety-related items in CPSES Units 1 and 2 that had previously been inspected and accepted by Quality Control (QC). The reinspections determined whether the items conformed with the requirements of the applicable design. In cases where reinspections could not be performed, because attributes of the items were generically inaccessible or nonrecreatable, reviews were performed of inspection documentation to determine whether the documentation provided evidence that the as-built items conformed with the design requirements that were applicable at the time the item was constructed and inspected. Deviations from applicable requirements, whether identified through reinspections or documentation reviews, were evaluated to determine whether corrective action was warranted to ensure performance of the hardware safety function. Deviations concluded to warrant corrective action were "findings", as discussed below. For each finding, a root cause analysis and a generic implications analysis were performed. Based on the results of these analyses, corrective actions were recommended to ensure the adequacy of existing hardware and of future programs.

For the purpose of performing the reinspections and documentation reviews, the CPRT divided items in the plant into construction work categories (CWCs), such as Cable Tray, Structural Steel, Conduit, and Concrete Placement. The scope of each CWC was selected such that the items within the CWC were reasonably homogeneous in terms of the work activities needed to install or construct the items and the quality-related attributes associated with the installed hardware. Factors considered in making this selection included: (1) similarity of the attributes and acceptance criteria for the items, (2) similarity of the governing codes and standards for the items, (3) whether the organizations performing the work were the same, (4) whether the types

of crafts performing the work were the same, and (5) whether the inspection procedures or personnel assuring the quality of the work were similar. Thirty-two CWCs in four disciplines (electrical, mechanical, structural, and supports) were identified in this manner. The CWCs are listed in Table 1.2. Electrical cable tray hangers were not included in the scope of ISAP VII.c because they were already being examined and modified where necessary through a Project corrective action program at the time that ISAP VII.c reinspections were started.

The work activities that comprise each CWC were divided into attributes for purposes of the reinspections and documentation reviews. An attribute is a quality characteristic (or set of related characteristics) of a safety-related component or construction activity that, if it does not satisfy applicable acceptance criteria, could impair the ability of the component to perform its safety function. There were typically five to 15 attributes in a CWC. For example, the CWC of Cable Tray included attributes such as tray size, tray routing and arrangement, welding, bolting, and electrical separation. Attributes were sometimes divided into multiple characteristics. For example, the welding attribute in the Cable Tray CWC was divided into characteristics such as location, size, length and undercut.

A random sample of items in each CWC was selected for reinspection. The number of items in each sample was selected so that the sample size would be sufficient to confirm at a 95 percent confidence level for each attribute that fewer than five percent of the items in the CWC can contain a construction deficiency (i.e., a 95/5 sample screen). For each CWC, additional items were selected as necessary to complete a second random sample of items associated with safe shutdown systems. The size of the second sample was sufficient to provide a 95/5 sample screen for each item. Thus, the total sample of reinspected items for each CWC had a bias toward items associated with safe shutdown systems. The results of the reinspections were analyzed based upon the total sample of reinspected items.

For some items, the reinspections or documentation reviews identified attributes that deviated from design requirements. The significance of each deviation was analyzed by the CPRT, and each deviation was placed into one of the following categories:

- Insignificant - a deviation that had a negligible effect on the ability of an item to perform its intended safety function, or a deviation involving an incomplete document for which supplemental information provided evidence that the hardware was of acceptable quality.

- Notable - a deviation that had a non-negligible effect on the ability of an item to perform its intended safety function or had a non-negligible effect on the ability of the reviewed documentation to provide evidence of hardware quality.

- Construction Deficiency - a deviation that, if left uncorrected, could have resulted in the loss of capability of an item to perform its intended safety function (a

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

1.2 Description of the ISAP Process

Forty-six ISAPs have been implemented by the CPRT to address specific concerns raised by the NRC Technical Review Team (TRT) and other external sources. Twenty of the ISAPs addressed hardware-related issues; six addressed design-related issues exclusively; twelve addressed QA/QC programmatic issues; and eight addressed testing issues. These ISAPs are listed in Table 1.1.

The process used to conduct each ISAP differed depending upon the nature of the issue being investigated. However, the general elements of the process for the ISAPs were similar to the process used for ISAP VII.c. Specifically, inspections or reviews were performed on either a sample or 100 percent basis in the area in question; deviations were evaluated and placed in the various classifications depending upon their significance; deviations were evaluated to identify any trends; analyses were performed to identify the root causes of findings and to identify the generic implications of the root causes; corrective action was recommended for findings; and the entire process was subject to quality assurance controls. Finally, Results Reports were written and published to document the work performed and conclusions reached through implementation of the ISAPs.

1.3 Methodology for Collective Evaluation of Quality of Construction

The methodology employed in the collective evaluation of the quality of construction was designed to address three issues: 1) sufficiency of data; 2) overall quality of construction; and 3) need for additional corrective action.

As discussed above, the primary sources of information for the quality of construction collective evaluation were the results of ISAP VII.c and the other 46 ISAPs, of which 20 addressed hardware quality directly. These results were evaluated on a CWC-by-CWC basis and a discipline-by-discipline basis. The results of these evaluations are summarized in Section 2 and are presented in detail in Sections 3 through 7. For each CWC and then for each discipline, the CPRT determined whether sufficient data were available to permit conclusions to be reached regarding the quality of construction.

The collective evaluation also addressed the question of whether the available data, when considered collectively, indicated the need for any additional corrective action. This portion of the evaluation focussed principally on the findings identified by ISAP VII.c and the other 20 hardware-related ISAPs. In those instances where the Project proposed alternative corrective actions (in response to CPRT recommendations documented in the ISAP reports) that were concurred with by the CPRT, the collective evaluation was based on those alternative corrective actions. The results of this evaluation are reported in Section 8.

Conclusions were then reached regarding the overall quality of construction of CPSES, based on the available data. These conclusions are reported in Section 9.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 1.1 Issue-Specific Action Plans

ACTION PLAN	TITLE
Electrical ISAPs	
I.a.1	Heat-Shrinkable Cable Insulation Sleeves
I.a.2	Inspection Reports on Butt-Splices
I.a.3 *	Butt-Splice Qualification
I.a.4	Agreement Between Drawings and Field Terminations
I.a.5 *	NCRs on Vendor Installed Amp Terminal Lugs
I.b.1	Flexible Conduit to Flexible Conduit Separation
I.b.2	Flexible Conduit to Cable Separation
I.b.3 *	Conduit to Cable Tray Separation
I.b.4	Barrier Removal
Civil/Structural ISAPs	
I.c *	Train C Conduit and Supports
II.a	Reinforcing Steel in the Reactor Cavity
II.b	Concrete Compression Strength
II.c	Maintenance of Air Gap Between Concrete Structures
II.d *	Seismic Design of Control Room Ceiling Elements
II.e	Rebar in the Fuel Handling Building
VI.b	Polar Crane Shimming
VII.b.4	Hilti Anchor Bolt Installation

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 1.2 ISAF VII.c Construction Work Categories

Discipline	CWC	Description
Electrical	Conduit	Class 1E rigid and flexible conduits, fittings, pull boxes, and terminal boxes.
	Cable Tray	Class 1E ladder and solid bottom trays and fittings.
	Cables	Class 1E power, control, instrumentation cables, separation barrier material, cable grip installation and field installed jumpers.
	Nuclear Instrument System Cable Terminations	Class 1E Nuclear Instrumentation System triaxial cable terminations.
	Lighting Cable	Class 1E emergency and essential lighting cables and terminations.
	Electrical Equipment Installation	Installation and modification of all safety-related electrical equipment such as switchgear, substations, motor control centers, control panels and racks, 125 VDC batteries, chargers and distribution panels, 120 V inverters, transformers and distribution panels, electrical penetration assemblies, and electrical conductor seal assemblies.
	Instrument Equipment Installation	Safety-related transmitters, indicators, switches, controllers, radiation monitors, and instrument piping and tubing.
Mechanical	Large-Bore Piping Configuration	Orientation, location, size, connections, clearances, valve types, and other configuration aspects for safety-related piping 2-1/2-inches and larger.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 1.2 ISAP VII.c Construction Work Categories (Cont'd)

Discipline	CWC	Description
Mechanical (Cont'd)	Small-Bore Piping Configuration	Orientation, location, size, connections, clearances, valve types, and other configuration aspects for safety-related piping 2 inches and smaller.
	Piping Bend Fabrication	Bends on piping 2 inches and smaller.
	Piping System Bolted Joints	Flanges, bolting, nuts, cap screws, and gaskets for assembly of piping mechanical joints.
	Pipe Welds and Materials	Site-made welds, weld materials, and base material for the welding of piping to other piping, fittings, and components.
	Tubing Welds and Material	Site-made welds, weld material, and base material for the welding of tubing to other tubing, fittings and components.
	Field-Fabricated Tanks	Field-erected tanks for diesel fuel oil storage, recycle holdup, and boric acid storage.
	HVAC Ducts and Plenums	Installation of Seismic Category I sheet metal duct sections, with accessories, for all safety-related HVAC duct systems installed by the HVAC contractor.
	HVAC Equipment Installation	Installation and setting of in-line vane-axial and propeller fans, dampers, air measuring stations, and other HVAC equipment that was installed by the HVAC installation contractor.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

2.0 OVERALL QUALITY OF CONSTRUCTION

As discussed above, with the exception of cable tray hanger installation, the scope of ISAP VII.c encompassed all categories of safety-related construction activities at CPSES. Therefore, the CPRT primarily relied upon the results of ISAP VII.c in its collective evaluation of the quality of construction of CPSES. In addition, the CPRT utilized the results of the other ISAP Results Reports as a source of information in evaluating the quality of construction in those particular areas that have been the subject of concerns expressed by NRC and other external sources. The sections below describe the data upon which the CPRT's evaluation of the quality of construction is based, and summarize the overall results of ISAP VII.c and of the other ISAPs involving reinspections or documentation reviews to assess hardware quality.

2.1 Sufficiency of Data for Evaluation

The data collected by the CPRT as part of ISAP VII.c was determined to provide a sufficient basis for evaluating the overall quality of construction of CPSES. The reinspections and documentation reviews performed under ISAP VII.c encompassed more than 535,000 inspection points and more than 95,000 documentation review points (including inspection and documentation review points for concrete expansion anchors that are reported in the ISAP VII.b.4 Results Report). In total, approximately 3,800 items were subject to reinspection or documentation reviews, which is equivalent to approximately 1.4 percent of the total number of safety-related items in the plant. As shown in Tables 2.1 - 2.4 and Tables 2.6 - 2.9, a large number of reinspections and documentation reviews was performed for each CWC. In general, approximately 90 or more items in each CWC were subject to reinspection and/or documentation review.

In addition to the sample size, there are other factors that make it likely that the CPRT has addressed any significant generic conditions affecting the quality of construction of a CWC. These factors include the following:

- Construction deficiencies were identified through conservative evaluations. The resulting corrective actions involve broad reinspections due to this conservatism.

- The CPRT performed a trend analysis of insignificant and notable deviations and treated any resultant adverse trends and unclassified trends as findings. The fact that 50 adverse and unclassified trends led to hardware corrective actions compared with 43 construction deficiencies confirms that the trend evaluations were a major component of the CPRT investigation and broadens significantly the corrective actions and the resulting reinspections.

- The CPRT performed a root cause analysis and generic implications analysis for each finding to determine whether the condition that led to the finding potentially could affect other types of items and attributes. Where appropriate, the

CPRT has recommended reinspection for implicated attributes that were not the subject of a finding.

- As discussed in Section 8, the CPRT performed a collective evaluation of its findings to determine whether there were generic conditions that warrant further corrective action. One recommendation involves a review of certain historical inspection procedures that may lead to additional hardware reinspections.

In summary, the CPRT obtained a sample of sufficient size to meet its statistical screen requirements for each attribute of each CWC. The sample was selected to be representative of the safety-related, QC-accepted plant hardware. The data from the sample (ISAP VII.c and other ISAPs) were evaluated to identify both acceptable hardware and construction deficiencies. A total of 43 construction deficiencies was identified. The remaining deviations were subject to an additional engineering evaluation to assess whether they indicated a type of flawed construction likely to have resulted in an undetected construction deficiency in the uninspected portion of the population. This additional evaluation resulted in the identification of 50 adverse trends and unclassified trends (ISAP VII.c and other ISAPs). Each of these findings was analyzed for root causes and generic implications. Based on these analyses, corrective actions were developed encompassing the root causes and the generic implications in order to correct existing hardware where appropriate and to preclude future significant deviations. Finally, the above data was collectively evaluated, including an assessment of the completeness of the corrective actions based on the generic conditions evidenced by the collected findings. The CPRT concludes that the above process has identified the hardware warranting corrective action and that it provides a sufficient basis for its conclusions regarding the overall quality of construction at CPSES.

2.2 Results of ISAP VII.c Reinspections and Documentation Reviews

The results of the reinspections and documentation reviews performed by the CPRT under ISAP VII.c demonstrate a high conformance rate between the as-built items and applicable design requirements. Specifically, more than 98 percent of the more than 535,000 inspection points, and about 98 percent of the more than 95,000 documentation review points, were found to be in conformance with applicable design requirements.

Furthermore, the quality was relatively uniform throughout the various disciplines and CWCs, as shown in Tables 2.1 - 2.4 and Tables 2.6 - 2.9. For example, in each discipline, more than 97 percent of the points subject to reinspection were determined to be in conformance with applicable design requirements. Similarly, of the 26 CWCs that were subject to reinspection (as opposed to documentation review only), all had conformance rates greater than 95 percent, except for Mechanical Equipment Installation (94.1 percent) and Containment Liners and Stainless Steel Tank Liners (92.2 percent). The results of the documentation reviews were almost as uniform, with 15 of the 25 CWCs having conformance rates greater than 95 percent. These results do not account for the Lighting Cable and HVAC Duct Supports CWCs, where

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

reinspections, documentation reviews and evaluations were terminated after initial results indicated the presence of an unclassified trend applicable to the entire CWC in each case.

With the exception of the Lighting Cable and HVAC Duct Supports CWCs, these results indicate that the programs for assuring construction quality at CPSES were generally effective in achieving a quality product. In particular, these results provide a high degree of assurance that the quality of items subject to QC inspection is acceptable.

As can be seen from Tables 2.1 - 2.4 and Tables 2.6 - 2.9, most of the deviations were not significant. For example, a large number of the deviations consisted of relatively insignificant nonconformances, such as missing identification markings or tags, incomplete documentation for which supplemental information exists, or items that were located slightly outside tolerance limits. Thus, even where the CPRT identified deviations, most of the affected items would have been able to perform their safety functions even if the deviations had been left uncorrected.

Of the 32 CWCs, two (Lighting Cable and HVAC Duct Supports) were declared unclassified trends for the entire population. In the remaining 30 CWCs, there were 10 with no finding. Twelve CWCs had a CD in one or more attributes, and seven CWCs had no CD but had an adverse trend or unclassified trend in one or more attributes. One CWC (Equipment Supports) had no finding, but, as discussed in Section 7.2, corrective actions for a finding from other CWCs on AISC bolting were extended to this CWC. These 30 CWCs had a total of 331 attributes and, of these, 276 had no finding. Of the remaining 55 attributes, 19 had a CD and 36 had an adverse trend or an unclassified trend. Thus, fewer than 20 percent of the attributes in these 30 CWCs had a finding.

The following CWCs had conformance rates greater than 95 percent for reinspection and documentation reviews, as applicable, and had no finding:

- Piping Systems Bolted Joints
- Tube Welds and Material
- Field Fabricated Tanks
- HVAC Equipment Installation
- NIS Cable Terminations
- Fuel Pool Liner

Therefore, the CPRT concluded that the quality of construction of these CWCs is acceptable, and no further reinspection or other corrective action is warranted for these CWCs. Additionally, although Fill and Backfill Placement, Cement Grout, Epoxy Grout, and Conduit Supports had conformance rates below 95% for documentation review points, the deviations in these CWCs were largely insignificant. Furthermore, the

CPRT did not identify any findings with respect to these CWCs. Consequently, the CPRT has also determined that the quality of these CWCs is acceptable and that no further corrective action is warranted.

With respect to each of the remaining CWCs, the CPRT identified at least one finding. Specifically, as a result of the more than 630,000 inspections and documentation reviews conducted for ISAP VII.c, the CPRT identified a total of 73 construction deficiencies, adverse trends, and unclassified trends. In each case, generic corrective action was taken for the attribute that was subject to one or more of these findings, including reinspection of the affected attribute. Thus, to the extent that these findings could raise questions about the quality of construction of a CWC, additional reinspections will be performed and corrective action will be taken, thereby assuring the quality of construction of these CWCs.

2.3 Results of Other Hardware-Related ISAPs

Of the 46 ISAPs other than ISAP VII.c, 20 included hardware reinspections or documentation reviews or both, which were conducted on either a sample or 100 percent basis in specific areas. The results of these reinspections and documentation reviews were similar to those of ISAP VII.c. For example, in ISAP I.d.1, the CPRT performed reinspections of work that was originally subject to inspection by QC inspectors who were not properly certified. As a result of reinspections of more than 45,000 inspection points, CPRT determined that almost 97 percent of these points were in conformance with applicable design requirements.

The CPRT did not identify any finding against hardware quality with respect to most of the 20 ISAPs. In particular, investigations of TRT concerns by the CPRT identified no deviations during reinspection of electrical terminations (ISAP I.a.4); review of the installation of main steam pipes (ISAP V.e); evaluation of rebar in fuel handling building (ISAP II.e); flexible conduit to flexible conduit separation (ISAP I.b.1); and evaluation of concrete compression strength (ISAP II.b).

In other cases, CPRT investigations identified deviations but determined that they were not safety-significant. These ISAPs addressed on-site fabrication (ISAP VII.b.1); valve disassembly and reassembly (ISAP VII.b.2); skewed welds in ASME NF pipe supports (ISAP V.a); plug welds in pipe and cable tray supports (ISAP V.d); reinspection and evaluation of polar crane shimming (ISAP VI.b); and evaluation of missing rebar in the reactor cavity (ISAP II.a).

The CPRT identified hardware-related findings with respect to heat shrinkable cable insulation sleeves (ISAP I.a.1); butt splices (ISAP I.a.2); electrical separation of cables (ISAP I.b.2 and ISAP I.b.4); air gap between concrete structures (ISAP II.c); review of the gap between the reactor pressure vessel reflective insulation and biological shield wall (ISAP VI.a); pipe supports (ISAP VII.b.3); reinspections of concrete expansion anchors (Hiltis) (ISAP VII.b.4); and steam generator upper lateral supports (ISAP V.b). In each case, corrective action was taken, including reinspection of the affected attributes.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 2.8 Results of ISAP VII.c For Documentation Reviews in the Structural Discipline

Construction Work Category	Total [1] Review Points	Total Deviations	Percent Review Points Conforming	Acceptance Rate [3] Including Insignificant Deviations	Construction Deficiencies	Unclassified Trends
Concrete Placement	2,900	152	94.8	99.9	0	0
Structural Steel	520	54	89.6	97.5	0	1
Fill & Backfill Placement	4,500	488	89.2	99.4	0	0
Cement Grout	960	93	90.3	100	0	0
Epoxy Grout	720	284	60.6	100	0	0
Containment Liners and Stainless Steel Tank Liners	1,400	9	99.4	100	0	0
Fuel Pool Liner	1,000	33	96.7	99.3	0	0
SUBTOTALS - STRUCT.	12,000	1,113	90.7	99.6	0	1

NOTE: Explanatory notes are listed in Table 2.10.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 2.9 Results of ISAP VII.c For Documentation Reviews in the Supports Discipline

Construction Work Category	Total [1] Review Points	Total Deviations	Percent Review Points Conforming	Acceptance Rate [3] Including Insignificant Deviations	Construction Deficiencies	Unclassified Trends
Large-bore Pipe Supports - Rigid	7,000	12	99.8	100	0	0
Large-bore Pipe Supports - Non-Rigid	9,400	52	99.4	100	0	0
Small-bore Pipe Supports	3,740	7	99.8	100	0	0
Instrument Tube Supports	330	202	38.8	83	0	0
Pipe Whip Restraints	27,970	114	99.6	99.9	0	0
Equipment Supports	5,300	32	99.4	99.6	0	0
HVAC Duct Supports [2]	[1,700]	[143]	[91.6]	[-]	[0]	[1]
Conduit Supports	660	215	67.4	90.9	0	0

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

3.0 ELECTRICAL

3.1 Summary of Results from Electrical Discipline

This section presents the CPRT's evaluation of the quality of construction in the electrical discipline.

3.1.1 ISAP VII.c - Quality of Construction

The electrical discipline in ISAP VII.c consists of seven CWCs and a total of 71 attributes. The CWCs are:

- Conduit
- Cable Tray
- Cables
- NIS Cable Terminations
- Lighting Cable
- Electrical Equipment Installation
- Instrumentation Equipment Installation

CPRT reinspection in the electrical discipline encompassed 957 items and approximately 55,800 inspection points. Additionally, the CPRT documentation review encompassed approximately 11,200 review points.

As shown in Table 2.1, in the electrical discipline, the items that were reinspected numbered approximately 90 or more for those CWCs requiring reinspection and the documentation reviews numbered 68 or more for those CWCs requiring documentation review. The sole exception was the CWC of Lighting Cable, for which reinspections were ceased after 24 reinspections and an unclassified trend was declared against the entire CWC. As discussed previously, this number of reinspections and documentation reviews is sufficient to permit firm conclusions to be drawn regarding the quality of construction of items within each CWC.

The reinspections and documentation reviews verified that a high degree of conformance exists between the design and as-built electrical items (not including Lighting Cable). Approximately 99 percent of the inspection points and 99 percent of the documentation review points were determined to be in conformance with applicable design requirements (not including Lighting Cable).

Of the deviations identified by the CPRT, approximately 88 percent were insignificant. There were 10 construction deficiencies and 14 adverse trends or unclassified trends (not including Lighting Cable). As discussed in Part II, separate evaluations are being performed by the Project. Preliminary indications are that few, if any, of the construction deficiencies in the electrical discipline, had they remained uncorrected, would have precluded achieving or maintaining a safe plant condition.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

As is explained in the subsections below, appropriate corrective action has been taken for the areas that had findings. Thus, the CPRT concludes that upon completion of the required corrective action, there will be reasonable assurance that the electrical systems and components at CPSES will meet the significant, safety-related requirements of the October 1985 design.

3.1.2 Electrical Discipline Hardware-Related ISAPs for TRT Issues

There is a total of six electrical discipline hardware-related ISAPs. These ISAPs are:

- ISAP I.a.1 - Heat-Shrinkable Cable Insulation Sleeves
- ISAP I.a.2 - Inspection Reports on Butt-Splices
- ISAP I.a.4 - Agreement Between Drawings and Field Terminations
- ISAP I.b.1 - Flexible Conduit to Flexible Conduit Separation
- ISAP I.b.2 - Flexible Conduit to Cable Separation
- ISAP I.b.4 - Barrier Removal

Each of the above ISAPs was implemented by the CPRT for the concerns expressed by the TRT.

For ISAP I.a.1, reinspections and documentation reviews performed by the CPRT demonstrated that heat-shrinkable cable insulation sleeves had been installed where required and inspected. During the implementation of the ISAP, however, an adverse trend was identified for the installation of these sleeves based on two deviations. Corrective actions will ensure that any potential construction deficiency is detected and corrected.

For ISAP I.a.2, all known installations on AMP PIES splices were reinspected by the CPRT. One QA/QC program deficiency and one construction deficiency were identified. Corrective actions, combined with the extensive actions taken as part of this ISAP and ISAP I.a.3, "Butt-Splice Qualification", will resolve all concerns related to butt-splices.

For ISAP I.a.4, reinspections performed by the CPRT did not identify any deviation affecting functional correctness of terminations.

Reinspections performed by the CPRT under ISAP I.b.1 resulted in no deviation related to flexible conduit to flexible conduit separation. However, in ISAPs I.b.2 and I.b.4, there was a total of 203 unclassified deviations for various other types of separation violations. An extensive corrective action program is in place to correct existing hardware and to preclude recurrence.

The unclassified trend consisted of deviations involving damage and incorrect reassembly of door hardware and gaskets on enclosures of electrical equipment. The deviations were attributed to inadequate control of maintenance, testing, or inspection operations in that the equipment was damaged or not properly reassembled during or at the completion of such work. Corrective action includes an inspection of enclosures of electrical equipment for deviations of this type and revision to plant operating, testing, and maintenance procedures to ensure proper administrative controls of access into panels.

Based on the above, the CPRT concludes that upon completion of the required corrective actions, there will be reasonable assurance that the items in this CWC will meet the significant, safety-related requirements of the October 1985 design.

3.8 ISAP VII.c - Instrumentation Equipment Installation

A total of 167 items, encompassing approximately 7,100 inspection points, was reinspected in this CWC. Additionally, documentation reviews in this CWC encompassed approximately 240 review points. As a result of the reinspections and documentation reviews, approximately 98 percent of the inspection points and all review points were determined to be in conformance with design requirements.

Quality documentation was used to support hardware adequacy conclusions for the attributes shown in Table 3.1 for this CWC.

Approximately 89 percent of the deviations identified during reinspections of items in this CWC were determined to be insignificant and had no impact on the function or integrity of the instrumentation equipment. For example, more than one-quarter of the deviations involved tubing with spatial clearances to other tubes and structures less than that specified in the design. These deviations have no effect on the instrument tubing function. Similarly, one-fifth of the deviations involved missing color code markings on tubing; recent design changes have deleted the requirement that color code be maintained after installation.

The CPRT identified one QA/QC program deficiency and one construction deficiency in this CWC. The QA/QC program deficiency involved the use of unapproved thread sealant on threaded connections. The Project will reinspect all instrument installations and verify proper thread sealant usage.

The construction deficiency involved flexible metal instrument hose assemblies that were installed with twist in excess of that allowed by the construction specification. Reinspections are being performed by the Project to confirm that the instrument hose assemblies are in accordance with the manufacturer's requirements.

Based on the above, the CPRT concludes that upon completion of the required corrective actions, there will be reasonable assurance that the items in this CWC will meet the significant, safety-related requirements of the October 1985 design.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

3.9 ISAP I.a.1 - Heat-Shrinkable Cable Insulation Sleeves

This ISAP addressed a concern that heat-shrinkable cable insulation sleeves were not installed where required and were not inspected. Documentation reviews and reinspections of the installation of heat-shrinkable cable insulation sleeves were performed by the CPRT on a sampling basis. Over 100 items had documentation reviews performed; four deviations were identified. Additionally, five reinspections were performed that identified two deviations. No construction deficiency was identified. However, the reinspections did identify one adverse trend. The installation of two heat-shrinkable cable insulation sleeves failed to conform to the manufacturer's acceptance criteria. The sleeve installations were determined to be adequate to perform their function in a mild environment (as found), but could be compromised in a harsh environment. The deviations were attributed to inadequate craft supervision, inadequate inspection instructions in the initial revision of the procedure, and a failure to backfit new inspection requirements when the procedure was revised. The instructions had subsequently been revised and corrected. Among the corrective actions taken were (1) a documentation review for heat- shrinkable cable insulation sleeve installations to determine whether there is evidence of correct sleeve installation and QC involvement in the installation of the sleeves and related connectors; (2) a reinspection of those sleeves where the documentation reviews indicate a potential deficiency; and (3) a reinspection of heat-shrinkable cable insulation sleeves on Class 1E cables in harsh environments.

Based on the above, the CPRT concludes that upon completion of the required corrective actions, there will be reasonable assurance that the items examined under this ISAP will meet the significant, safety-related requirements of the applicable design.

3.10 ISAP I.a.2 - Inspection Reports on Butt Splices

This ISAP addressed the concerns that butt splices were not properly documented on drawings, not properly installed where required, and not properly inspected and documented. This ISAP involved only AMP PIES splices. Documentation reviews and reinspections were performed by the CPRT to determine whether the splices were properly installed and documented. All known AMP PIES splices on cables in Class 1E and associated circuits in Units 1, 2 and common areas were reinspected. A review of documentation was performed for the AMP PIES splices identified by reinspection. Corrective action has been initiated for each deviation identified during the reinspections and documentation reviews. One construction deficiency was identified that involved incorrectly-sized splices applied to the termination of cables to equipment pigtails. This deficiency was attributed to inadequate instructions for the installation and inspection of AMP PIES splices. The procedures were subsequently revised and currently provide adequate instructions.

Based on the above, the CPRT concludes that upon completion of the required corrective actions, there will be reasonable assurance that the items examined under this ISAP will meet the significant, safety-related requirements of the applicable design.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

3.11 ISAP I.a.4 - Agreement Between Drawings and Field Terminations

This ISAP addressed the concern that cables were not terminated in accordance with the design drawings. A total of 356 safe-shutdown terminations was randomly selected from Class 1E terminations in the control and cable spreading rooms. Reinspections performed by the CPRT of those terminations found all to be functionally in accordance with the applicable design documents. Further, of the six cases identified by the NRC TRT involving cables not being terminated in accordance with drawing requirements (the source of the concern), none was found to be in functional disagreement with design requirements.

Based on the above, there is reasonable assurance that the items examined under this ISAP meet the significant, safety-related requirements of the applicable design.

3.12 ISAP I.b.1 - Flexible Conduit to Flexible Conduit Separation; ISAP I.b.2 - Flexible Conduit to Cable Separation; and ISAP I.b.4 - Barrier Removal

These ISAPs addressed concerns regarding electrical separation inside multi-train control panels. ISAPs I.b.1 and I.b.2 involved the qualification of SERVICAIR flexible conduit as a barrier and the establishment of separation requirements from it to other conduit and cable. ISAP I.b.4 involved specific separation deviations that were identified by the TRT, one of which was caused by the removal of a separation barrier. To resolve these concerns, reinspections of multi-train electrical panels in Unit 1 and common areas were performed by the CPRT.

Reinspections performed under ISAP I.b.1 resulted in no deviation being identified that related to the original concern, which involved SERVICAIR flexible conduit to flexible conduit separation.

Reinspections performed under ISAP I.b.2 resulted in 25 deviations being identified that related to the original concern, Servicair flexible conduit to cable separation.

Reinspections performed under ISAPs I.b.1, I.b.2 and I.b.4 resulted in 178 deviations being identified for all other types of separation violations, including five related to the original concern of ISAP I.b.4, missing or inadequate barriers.

Rather than attempt to determine the safety significance of these 203 deviations, the CPRT categorized them as unclassified deviations and attributed them to an inadequate program for establishing and maintaining internal panel separation.

The corrective actions being taken to resolve these unclassified deviations identified by ISAPs I.b.2 and I.b.4 include the following: (1) all deviations have been noted in NCRs and are being dispositioned by the Project, (2) applicable documents are being revised to clarify internal separation criteria, (3) involved personnel are receiving training for understanding of revised criteria, (4) a baseline inspection is being performed that verifies all separation attributes,

and (5) access to panels requiring cable separation is being controlled following the baseline inspection.

Based on the above, the CPRT concludes that upon completion of the required corrective actions, there will be reasonable assurance that the items examined under this ISAP will meet the significant, safety-related requirements of the applicable design.

3.13 ISAP I.d.1 - QC Inspector Qualifications

This QA/QC ISAP addressed the concerns that the QC training and certification files lacked adequate supportive documentation regarding personnel qualification of electrical QC inspectors. During the implementation of this ISAP, an unclassified trend involving inspector certifications was identified. The unclassified trend involved five inspectors that were responsible for inspecting a large number of cable installations. Each inspector was found to be lacking the experience required to be certified. No recreatable inspections could be identified for these inspectors and, as a result, their ability to conduct the required inspections was indeterminate. The Project has evaluated, in terms of hardware impact, the consequences of the inspectors having less-than-adequate experience. The evaluation took into consideration the overall quality of the work being done by the craft, and that QC inspector experience would not be a factor in craft performance. It also considered required inspections performed by the craft and by engineering, as well as any tests of the cable performed. The conclusion was that the less-than-adequate experience of the inspectors, as it affected those attributes of cable installation for which documented evidence of acceptability was dependent on inspector certification, would have had negligible impact on the adequacy of the installed cable. The CPRT reviewed these conclusions and concurred. Therefore, no corrective action was required.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 3.1 Electrical Discipline ISAP VII.c
Documentation Review Attributes

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
Conduit	None
Cable Tray	Tray Inspector Certification
	Welding Inspector Certification
	Welder Qualification
	Weld Procedure Application*
Cable	Cable Support Grip Installation*
	Separation Barrier Material Installation*
	Heat Shrinkable Tubing*
	Damage*
	Raceway Acceptability
	Pull Tension
	Lubrication
	Defects
	Tests
	Cable Jacket and Insulation Removal
	Bolted Connections
	Cable Pulling Operations

* Quality Documentation was supplemented by field verification to support hardware adequacy conclusions.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 3.1 Electrical Discipline ISAP VII.c
Documentation Review Attributes
(Cont'd)

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
NIS Cable Terminations	Installation of NIS Cable Connectors
	NIS Cable Insulation and Resistance Testing
	Coupling of Connectors
	Soldering of Electrical Connections
Lighting Cable	Not Applicable
Instrumentation Equipment	QC Acceptance of Pressure Test Reports
	Tube Bender Qualification
Electrical Equipment Installation	QC Acceptance of Assembly or Modification*

* Quality Documentation was supplemented by field verification to support hardware adequacy conclusions.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

4.0 MECHANICAL

This section presents the CPRT's evaluation of the quality of construction in the mechanical discipline.

4.1 Summary of Results from Mechanical Discipline

4.1.1 ISAP VII.c - Quality of Construction

The mechanical discipline consists of ten CWCs and a total of 111 attributes. The CWCs are:

- Large-Bore Piping Configuration
- Small-Bore Piping Configuration
- Piping Bend Fabrication
- Piping System Bolted Joints
- Pipe Welds and Material
- Tubing Welds and Material
- Field Fabricated Tanks
- HVAC Ducts and Plenums
- HVAC Equipment Installation
- Mechanical Equipment Installation

The CPRT reinspections in the mechanical discipline encompassed approximately 198,000 inspection points and 1,163 items. Additionally, the CPRT documentation review encompassed approximately 12,000 review points.

As is shown in Table 2.2, the reinspections in the mechanical discipline were distributed relatively evenly among the CWCs, with approximately 90 or more items in each CWC subject to reinspections (except for field fabricated tanks, where the total number of such tanks is only eight). As discussed previously, this number of inspections is sufficient to permit firm conclusions to be drawn regarding the quality of construction of items within each CWC.

The reinspections and documentation reviews verified that a high degree of conformance exists between the design and the as-built mechanical items. Approximately 98 percent of the inspection points in the mechanical discipline were determined to be in conformance with applicable design requirements. Similarly, approximately 98 percent of the documentation review points were determined to be in conformance with design requirements.

Of the deviations identified by the CPRT, very few had any significance. Only two construction deficiencies were identified during the

reinspections. Similarly, only five of the deviation types in both reinspection and documentation review warranted the identification of an adverse trend or unclassified trend. As discussed in Part II, separate evaluations are being performed by the Project. Preliminary indications are that few, if any, of the construction deficiencies in the mechanical discipline, had they remained uncorrected, would have precluded achieving or maintaining a safe plant condition.

As explained in the subsections below, appropriate corrective action will be taken for the areas that had findings. Thus, the CPRT concludes that upon satisfactory completion of these corrective actions, there will be reasonable assurance that the mechanical systems and components will meet the significant, safety-related requirements of the October 1985 design.

4.1.2 Mechanical Discipline Hardware-Related ISAPs for TRT Issues

There is a total of three mechanical discipline hardware-related ISAPs. The ISAPs are:

- ISAP VII.b.2 - Valve Disassembly
- ISAP V.e - Installation of Main Steam Pipes
- ISAP VI.a - Gap Between Reactor Pressure Vessel Reflective Insulation and the Biological Shield Wall

Each of the above ISAPs was implemented by the CPRT in response to concerns expressed by the TRT. As a result of the ISAPs, the CPRT verified that a high degree of conformance exists between the design and the as-built mechanical items. Of the concerns that were identified by the TRT, all were determined to be insignificant.

In conducting ISAP VII.b.2, only four hardware deviations were identified, all of which were determined to be not safety significant. In addition, a review of the valve procedures determined that the current program provides the controls necessary to ensure proper installation of valve components.

For ISAP V.e, the evaluation of the effects of the installation methods used on the Unit 1 main steam pipes and an investigation of the use of temporary pipe supports did not identify any deviations; therefore, the TRT concern about piping installation practices was not substantiated.

For ISAP VI.a, the cooling flow in the annulus between the reactor pressure vessel reflective insulation (RPVRI) and biological shield for Units 1 & 2 was found to be adequate by the CPRT. Cleanout of debris, modification of the RPVRI and successful completion of the second set of Hot Functional Tests resolved the TRT concerns regarding cooling adequacy. However, during the implementation of this ISAP, an unclassified deviation was identified when debris was found to exist in other critical spaces. A deviation was also determined to exist in that a non-nuclear safety (NNS) design change had an adverse impact on a safety-related system. Corrective actions, as well as the determination

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

that the NNS design change issue was not safety significant and was not a generic issue, will resolve all concerns related to this issue.

In summary, a thorough evaluation of the TRT concerns in the mechanical discipline was conducted. The results of the evaluation found a high level of conformance. As explained in the subsections below, appropriate corrective action has been taken for all the required areas. Thus, the CPRT concludes that upon completion of the required corrective actions, there will be reasonable assurance that systems, components, and structures addressed under the TRT ISAPs will meet the significant, safety-related requirements of the applicable design.

4.2 ISAP VII.c - Large-Bore Piping Configuration

A total of 100 items, encompassing 6,000 inspection points, was reinspected in this CWC. As a result of the reinspection, approximately 98 percent of the inspection points were found to be in conformance with design requirements. Documentation reviews were not necessary to evaluate construction quality in this CWC.

Approximately 95 percent of the reinspection deviations identified in this CWC were determined to be insignificant and had no impact on the function or integrity of the large bore piping. For example, approximately 63 percent of the deviations involved pipes that had clearances less than specified in the design, but which still had sufficient clearances to avoid any measurable impact on the pipes or adjacent items during postulated seismic events or other conditions. Similarly, approximately 30 percent of the deviations involved pipes that were located four inches or less away from their designated locations on as-built drawings (which has a negligible impact on the pipe and system function).

The CPRT identified one construction deficiency and one unclassified trend in this CWC. The construction deficiency involved an expansion joint that had loose nuts (and no jam nuts) on three of the four tie rods for the joint. Among the corrective actions for this deficiency, the Project will reinspect the expansion joints and similar items in the plant to ensure proper installation. The unclassified trend involved pipe clearances. Although, as discussed above, the identified pipe clearance deviations individually were not significant, the CPRT designated these deviations as an unclassified trend because of the number of the deviations and due to the uncertainty that more significant clearance deviations may exist. Among the corrective actions for this trend, the Project revised the specifications to clarify separation requirements and revised the procedures to ensure appropriate inspections for separation. Additionally, the Project will perform a reinspection of pipes in the plant to ensure proper clearances.

Based on the above, the CPRT concludes that upon satisfactory completion of the required corrective actions, there will be reasonable assurance that the items in this CWC will meet the significant, safety-related requirements of the October 1985 design.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

4.3 ISAP VII.c - Small-Bore Piping Configuration

A total of 103 items, encompassing approximately 3,700 inspections points, was reinspected in this CWC. As a result of the reinspection, approximately 96 percent of the inspection points were found to be in conformance with design requirements. Documentation reviews were not necessary to evaluate construction quality in this CWC.

More than 99 percent of the deviations identified in this CWC were determined to be insignificant and had no impact on the function or integrity of the small bore piping. No construction deficiency was identified for this CWC. Similar to the large bore piping, most of the deviations in the small bore piping pertained to pipes whose locations were slightly out-of-tolerance and pipes whose clearances did not satisfy design requirements. Due to the number of deviations involving pipe clearances and the uncertainty that more significant clearance deviations may exist, CPRT classified the pipe clearance deviations as an unclassified trend. The corrective action discussed earlier for the unclassified trend involving large bore pipe clearances is also applicable to the unclassified trend involving small bore pipe clearances.

Based on the above, the CPRT concludes that upon satisfactory completion of the required corrective actions, there will be reasonable assurance that the items in this CWC will meet the significant, safety-related requirements of the October 1985 design.

4.4 ISAP VII.c - Piping Bend Fabrication

A total of 94 items, encompassing approximately 630 inspection points, was reirspected in this CWC. Additionally, documentation reviews in this CWC covered approximately 230 review points.

Quality documentation was used to support hardware adequacy conclusions for the attributes shown in Table 4.1 for this CWC.

As a result of the reinspections, more than 99 percent of the inspection points were determined to be conforming. In fact, only two deviations (pertaining to pipe bends that had slightly smaller radius than specified) were identified through reinspections, and both of the deviations were determined to have an insignificant impact on the strength of the pipe or the fluid flow in the pipe.

As a result of the documentation review, 86 percent of the review points were determined to be in conformance with design requirements. All of the deviations identified in the documentation review involved a lack of documentation of minimum wall thickness prior to pipe bending. Ultrasonic testing of a sample of pipe bends indicated that some of the pipes had a thickness that was less than the manufacturer's minimum wall thickness.

The CPRT designated the lack of documentation of minimum wall thickness prior to bending as an unclassified trend, because no other documentation was available to permit determination of the resultant pipe wall thickness after bending. Among other things, the corrective

that a similar condition would not affect the intended function of any of the incore detection system tubing. The remaining deviation concerned an overgrind condition on a 1-inch diameter tube. In this case, although the allowable defect depth was exceeded, the minimum tube wall thickness was still maintained.

As the result of the documentation review, approximately 99 percent of the review points were determined to be in conformance with design requirements. All of the deviations identified in the document review involved documentation that was inconsistent with the materials installed. In each case, the materials that were installed did not adversely affect the ability of tubing to perform its intended function.

There was no construction deficiency, adverse trend or unclassified trend in this CWC.

Based on the above, the CPRT finds that there is reasonable assurance that the items in this CWC meet the significant, safety-related requirements of the October 1985 design.

4.8 ISAP VII.c - Field-Fabricated Tanks

Four items, encompassing approximately 10,000 inspection points, were reinspected in this CWC. In addition, documentation reviews in this CWC covered approximately 6,200 review points. As a result of the reinspections and document reviews, approximately 96 percent of the inspection points and more than 99 percent of the review points were determined to be in conformance with design requirements.

Quality documentation was used to support hardware adequacy conclusions for the attributes as shown in Table 4.1 for this CWC.

Approximately 81 percent of the nonconforming inspection points identified in this CWC were determined to be insignificant and would not have adversely affected the integrity or function of the tanks.

The majority of the deviations identified by the reinspection program involved the configuration, size, and profile of welds. All but seven of these welds were non-pressure-retaining welds, such as welds on anchor bolt chairs, seismic supports and other support members. An evaluation of the seven deviations in pressure-retaining welds showed that the conditions were insignificant and did not affect the ability of the tanks to retain liquid or withstand seismic forces. The majority of the non-pressure-retaining welds were structural and attachment welds, and the deviations in these welds had an insignificant affect on the tanks. All the deviations on the non-pressure-retaining welds were within code-allowable stress and would not have affected the structural integrity or fluid-retaining capability of the tanks.

The reinspection program also identified a number of deviations on the surfaces of welds. The welds were inspected to determine whether the surfaces were sufficiently free of overlap, abrupt ridges and ripples so that proper nondestructive examinations could be performed. Because all

of the deviations occurred on support elements that have no code or specification requirements for nondestructive evaluation other than visual inspection, the deviations were determined to be insignificant.

All of the deviations identified in the document reviews for this CWC were insignificant and had no effect on the structural integrity or the fluid retaining capability of the tanks. For example, there were deviations in the Chicago Bridge and Iron (CB&I) record drawings that identify tank seam welds and related welding and non-destructive examination (NDE) information. After a review of CB&I QA records, it was determined that all the welders who worked on these tanks were qualified, the deviations in the record drawings were typographical and of no significance, and all the welds that were subject to nondestructive examination under CB&I's general welding procedures met acceptable examination criteria.

None of the deviations identified by the reinspections or the document reviews was determined to be a construction deficiency, adverse trend or unclassified trend.

Based on the above, the CPRT finds that there is reasonable assurance that the items in this CWC meet the significant, safety-related requirements of the October 1985 design.

4.9 ISAP VII.c - HVAC Ducts and Plenums

A total of 112 items, encompassing approximately 100,000 inspection points, was reinspected in this CWC. Additionally documentation reviews in this CWC covered approximately 1,200 review points. As a result of the reinspections and document reviews, approximately 99 percent of the inspection points and 89 percent of the review points were determined to be in conformance with the design requirements.

Quality documentation was used to support hardware adequacy conclusions for the attributes shown in Table 4.1 for this CWC.

Approximately 95 percent of the deviations identified during reinspections in this CWC were determined to be insignificant and had no impact on the structural integrity or ability of the HVAC duct system to provide air flow. There were several deviations that could result in minor duct leakage, such as missing bolts, loose or missing instrument test hole caps, and missing portions of gaskets. The ventilation systems that collect airborne radioactivity operate under a negative pressure and deliver the radioactive air under negative pressure to filtration units. Therefore, any leakage upstream from the filtration units is not a concern because the leakage is into the ductwork. Downstream of the filtration units, there is positive pressure in the ductwork, but any leakage would be filtered air. Therefore, minor leaks would be of no concern and would have negligible effect on the functioning of the ventilation system. None of the observed deviations would impact the ability to deliver design air flow.

The reinspection also identified deviations in the location, length, size and undercut of welding on the HVAC ducts and plenums. The majority of the deviations in the welding on the HVAC ducts and plenums

construction QA program regardless of valve type or reason for disassembly. Procedures were evaluated to determine if they were adequate to control the valve disassembly/reassembly process, and valves that were disassembled were evaluated to determine if they were properly reassembled and, if not, whether an improperly reassembled valve could result in a code violation or have a safety consequence.

The results of the above evaluation did not identify any construction deficiencies. In total, only four deviations were identified. In each case, a valve bonnet had been interchanged; however, no significant affect on valve operation or the valve pressure retaining capability would have resulted. In addition, the early procedures were reviewed and determined to provide adequate control requirements except in cases where large numbers of similar valves were simultaneously disassembled. The improvements made to the valve disassembly control process since 1983 provide an adequate control process. Based upon the above results, the CPRT concludes that the valves that have been disassembled and reassembled meet the significant, safety-related requirements of the applicable design.

4.13 ISAP V.e - Installation of Main Steam Pipes

This ISAP addressed a TRT concern that a Unit 1 main steam pipe had been installed incorrectly and had been forced into proper alignment after flushing operations, and a related concern that specifications and procedures for the fabrication and installation of temporary supports and the temporary supporting of piping and equipment in general were inadequate.

The CPRT performed stress analyses of main steam piping inside containment, reviewed records of ultrasonic testing (UT) examinations and hydrotests and reexamined the main steam pipe welds in the regions of highest predicted stresses. No deviation or deficiency was identified.

The potential for other piping systems sustaining adverse effects during the temporary supporting process and for residual pipe stresses that might result from springing were investigated. No adverse effect was identified.

Procedures and specifications associated with the use of temporary supports were reviewed, and it was determined that uncontrolled springing to achieve fitup was not permitted and controlled springing was not a common practice. Several changes were identified, and incorporated, that would strengthen the existing procedures associated with the use of temporary supports.

Based on the above, the CPRT concludes that the main steam piping installation meets the significant, safety-related requirements of the applicable design, and that the procedures for the use of temporary supports are adequate.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

4.14 ISAP VI.a - Gap Between Reactor Pressure Vessel Reflective Insulation (RPVRI) and the Biological Shield Wall

This ISAP addressed the TRT concern that the cooling flow in the annulus between the RPVRI at the biological shield wall was inadequate for reactor vessel cooling. It was determined that the flow restriction occurred because of the existence of an inadequately sized annulus gap and because of the presence of construction debris in the gap. This was treated as an unclassified deviation. The annulus gap was determined to be less than that specified by design. It was concluded that the cause of the problem was inadequate communication between Westinghouse and Gibbs & Hill during the development of the original insulation design. Corrective action included removal of the debris and drilling of holes in the support ring to allow adequate flow. Tests conducted on Unit 1 subsequent to the implementation of the corrective action have demonstrated the effectiveness of the corrective action.

The ISAP also addressed the TRT concerns related to design changes made to NNS items that might adversely affect safety-related systems and to the collection of debris in critical spaces. The process used at CPSES to identify and resolve interactions between NNS items and safety-related items was evaluated through a sampling program. While the process was considered to be adequate from a programmatic perspective, weaknesses were identified in individual program elements. A new set of policies and procedures has been established within the Nuclear Engineering and Operations Department to correct these weaknesses.

On inspection, debris was found to exist in critical spaces within the plant. In addressing the issue, these critical spaces were identified, cleaned and inspected. An Operations program was established to maintain the list of critical spaces, provide for inspection of these spaces during turnover from construction to Operations, and provide for maintenance of the cleanliness of these spaces. The existing procedures provide adequate control over the plant critical spaces.

Based on the above, the CPRT concludes that, upon completion of the required corrective actions, there will be reasonable assurance that the items examined under this ISAP will meet the significant, safety-related requirements of the applicable design.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 4.1 Mechanical Discipline ISAP VII.c
Documentation Review Attributes

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
Large-Bore Piping Configuration	None
Small-Bore Piping Configuration	None
Piping Bend Fabrication	Pipe Bending Machine Qualification
	Minimum Wall Thickness Verification
Piping System Bolted Joints	Bolt, Stud, Cap Screw & Nut Material Traceability
	Alignment of Pipe Flanges Prior to Bolt-Up
Pipe Welds and Materials	Base Material Traceability*
	Weld Material Traceability
	Weld Procedure Application
	Weld Procedure Qualification
	Welder Qualification
	QC Acceptance at Hold Points
	Pressure Test Completion
Tubing Welds and Material	Base Material Traceability*
	Weld Material Traceability
	Weld Procedure Application
	Weld Procedure Qualification
	Welder Qualification
	QC Acceptance at Hold Points
	Pressure Test Completion

* Quality Documentation was supplemented by field verification to support hardware adequacy conclusions.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 4.1 Mechanical Discipline ISAP VII.c
Documentation Review Attributes
(Cont'd)

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
Field-Fabricated Tanks	Dimensional Verification
	Hydrostatic Testing
	Record Drawings
	Welding Materials
	Procedural Approval
	Welder and Welding Operator Qualifications
	Nondestructive Examinations (NDE)
	NDE Personnel Certification
	Seismic Restraint As-Built Dimensions*
	Material Verification
HVAC Ducts and Plenums	Pressure Test
	Duct Section Fabrication Inspection*
	Weld Procedure Application*
	Welder Qualification
	Material Traceability
	Welding Inspection*
	Touch-up Galvanizing Inspection*
HVAC Equipment Installation	None
Mechanical Equipment Installation	None

* Quality Documentation was supplemented by field verification to support hardware adequacy conclusions.

to determine if additional provisions are necessary to prevent iron embedments and the establishment of a program to limit iron embedment contamination by all future contractors.

Based on the above, the CPRT concludes that upon completion of this corrective action, there will be reasonable assurance that the items in this CWC will meet the significant, safety-related requirements of the October 1985 design.

5.8 ISAP VII.c - Fuel Pool Liner

A total of 90 items, encompassing approximately 250 inspection points, was reinspected in this CWC. Additionally, approximately 1000 review points were subject to documentation reviews. As a result of the reinspections and documentation reviews, approximately 96 percent of the inspection points and approximately 97 percent of the review points were found to be in conformance with design requirements.

Quality documentation was used to support hardware adequacy conclusions for the attributes shown in Table 5.1 for this CWC.

Approximately 90 percent of the deviations identified by the reinspections of items in this CWC were insignificant and had no effect on the integrity or function of the fuel pool liner. All these deviations concerned localized concentrations of scattered rust that was present on the weld seam and weld-affected areas. CPRT determined the rust to be superficial and inactive. Thus these deviations were determined to be insignificant.

Approximately 79 percent of the deviations identified during documentation reviews for this CWC were determined to be insignificant. Approximately 25 percent of the deviations involved filler material records that did not meet procedural requirements. These deviations are similar to those identified for this attribute during implementation of ISAP VII.a.8 and are part of the implementation of the corrective action for ISAP VII.a.8. Approximately 40 percent of the deviations involved missing stud welding records. Ultrasonic testing performed by Project QC determined that the studs existed.

No construction deficiency, adverse trend or unclassified trend was identified in this CWC.

Consequently, CPRT concludes that there is reasonable assurance that the items in this CWC meet the significant, safety-related requirements of the October 1985 design.

5.9 ISAP II.a - Reinforcing Steel in the Reactor Cavity

This ISAP addressed the TRT concern that analyses had not been performed to evaluate whether rebar omitted from the Unit 1 reactor cavity wall affected structural integrity. The investigation included an evaluation of the reactor cavity and of the circumstances that led to the omission of the rebar. It was concluded that the structural integrity of the wall was not affected and that the documentation of the circumstances regarding the omitted rebar was consistent with Project procedures.

In order to evaluate other rebar placement activities for adequacy, a review was conducted of all documented cases of rebar omission, pour cards were reviewed for rebar placement, installation records for major embedments were reviewed and rebar exposed through construction activities and ISAP II.b activities were assessed. Although some rebar elements identified were not in accordance with design, none of these affected structural integrity and no adverse trends were identified.

Based on the above, the CPRT concludes that there is reasonable assurance that hardware areas addressed by this ISAP meet the significant, safety-related requirements of the applicable design.

5.10 ISAP II.b - Concrete Compression Strength

Testing was performed under ISAP II.b to resolve the issue of possible falsification of concrete compressive strength tests. A random sample of concrete pours in each of two populations was subjected to Schmidt Hammer tests in order to measure surface hardness, an indirect indicator of concrete compressive strength. The first population consisted of the concrete poured during the period between January 1976 and February 1977 when TU Electric is alleged to have falsified the results of the compressive strength tests. The second population consisted of the concrete pours for the six months following this period. Two hundred fifty one Schmidt Hammer strength tests were analyzed. The results show no evidence of systematic falsification of the concrete compressive strengths.

5.11 ISAP II.c - Maintenance of Air Gap Between Concrete Structures

This ISAP addressed the TRT concern that an adequate air gap between buildings had not been maintained.

Inspections were performed, documentation was reviewed and FSAR commitments were evaluated to determine the need for corrective actions. The inspections identified debris, sealing materials and other components in the seismic gaps. Three separate findings involving unclassified deviations were identified. The design calculations were reviewed to determine the minimum gap allowable, and a determination was made by the Project to remove all accessible debris. Where debris is determined to be inaccessible for removal, an engineering evaluation/calculation will be performed to assure that the seismic separation is not compromised.

Based on the above, the CPRT concludes that upon completion of these corrective actions, there will be reasonable assurance that the seismic gaps will meet the significant, safety-related requirements of the applicable design.

5.12 ISAP II.e - Rebar in the Fuel Handling Building

This ISAP addressed the TRT concern that, in a specific case where the first layer of rebar in the Fuel Handling Building base mat was authorized to be cut while drilling holes for the insertion of Hilti bolts, the third layer of rebar may have been cut, had the holes been drilled deeper than the required 6 inches, thus possibly affecting the structural integrity of the base mat.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 5.1 Structural Discipline ISAP VII.c
Documentation Review Attributes

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
Concrete Placement	Batch Plant Operations
	Concrete Preplacement Activities*
	Placement of Reinforcing Steel
	Cadwelds and Lap Splices
	Anchor Bolts and Embedded Plates*
	Depositing and Consolidating
	In-Process Concrete Test
	Curing Records*
	Compressive Strength Tests
Structural Steel	Inspection Drawing Identification*
	Inspection of Welding
	Concrete Expansion Anchors**
	Inspection of Structural Bolting
	Inspection of Stud Welding
	Material Traceability Documentation
Fill and Backfill Placement	Inspector's Daily Report Notations (for Safe Shutdown Impoundment Dam Fill)
	Test Results (for Safe Shutdown Impoundment Dam Fill)
	Inspection Checklist Notations (for Backfill - Brown & Root Inspection)

* Quality Documentation was supplemented by field verification to support hardware adequacy conclusions.
** Addressed in ISAP VII.b.4 Results Report.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 5.1 Structural Discipline ISAP VII.c
Documentation Review Attributes
(Cont'd)

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
Fill and Backfill Placement	Test Results (for Backfill - Brown & Root Inspection)
	Inspection Report Notations (for Backfill - TU Electric Inspection)
	Test Results (for Backfill - TU Electric Inspection)
Cement Grout	Surfaces are Clean
	Area is Vibration Free*
	Concrete Surfaces are Prewetted*
	Grout Properly Mixed
	Grout Placement and Consolidation
	Surface Temperature
	Grout Curing*
	Compressive Strength
Epoxy Grout	Gap Size*
	Placement Hole Location*
	Surfaces Clean and Dry
	Surface Temperature
	Grout Properly Mixed
	Grout Placement Continuous
	Grout Curing Time
	Compressive Strength

* Quality Documentation was supplemented by field verification to support hardware adequacy conclusions.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 5.1 Structural Discipline ISAP XII.c
Documentation Review Attributes
(Cont'd)

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
Containment Liners and Stainless Steel Tank Liners	Weld Joint and Welder Identification
	Material Traceability
	Welding
	Welder and Welding Operator Qualification
	Nondestructive Examination (NDE) of Welds
Fuel Pool Liners	Liner Material Traceability
	Welding, Procedures, Filler Material and Welder Symbol
	Welder Qualification
	Non-Destructive Examination (NDE) of Welds*
	Stud Welding*

* Quality Documentation was supplemented by field verification to support hardware adequacy conclusions.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

6.0 SUPPORTS

This section presents the CPRT's evaluation of the quality of construction in the supports discipline.

6.1 Summary of Results from Supports Discipline

6.1.1 ISAP VII.c - Quality of Construction

The support discipline consists of eight CWCs and a total of 93 attributes. The CWCs are:

- Large-Bore Rigid Pipe Supports
- Large-Bore Non-Rigid Pipe Supports
- Small Bore Pipe Supports
- Instrument Tube Supports
- Pipe Whip Restraints
- Equipment Supports
- HVAC Duct Supports
- Conduit Supports

CPRT reinspections in the supports discipline encompassed approximately 193,000 inspection points and 769 items. Additionally, the CPRT documentation review encompassed approximately 54,400 points.

As shown in Table 2.4, the reinspections in the support discipline ranged from 70 to 155 items for those CWCs that were subject to reinspection. As discussed previously, this number of inspections is sufficient to draw conclusions regarding the quality of construction of items within each CWC with a high degree of confidence.

The reinspections verified that a high degree of conformance exists between the design and the as-built support items. Approximately 98 percent of the inspection points were determined to be in compliance with the applicable design requirements. More than 98 percent of the documentation review points were found to be conforming.

Of the deviations that were identified by the CPRT, few had any significance. There were 18 construction deficiencies and nine adverse trends or unclassified trends (not including HVAC Duct Supports). As discussed in Part II, separate evaluations are being performed by the Project. Preliminary indications are that few, if any, of the construction deficiencies in the supports discipline, had they remained uncorrected, would have precluded achieving or maintaining a safe plant condition.

As explained in the subsections below, appropriate corrective action has been taken for areas which had findings. Thus, the CPRT concludes that,

upon completion of this corrective action, there will be reasonable assurance that supports at CPSES will meet the significant, safety-related requirements of the October 1985 design.

6.1.2 Support Discipline Hardware-Related ISAPs for TRT Issues

There is a total of five support discipline hardware-related TRT ISAPs. These ISAPs are:

- V.a - Inspections for Certain Types of Skewed Welds in NF Supports
- V.b - Improper Shortening of Anchor Bolts in Steam Generator Upper Lateral Supports
- V.d - Plug Welds
- VII.b.1 - On-site Fabrication
- VII.b.3 - Pipe Support Inspections

As a result of the ISAPs, the CPRT found a relatively high rate of conformance between the design and the as-built support items.

For ISAP V.a, the CPRT performed a reinspection of a random sample of 60 pipe supports with Type 2 ASME Code III, Subsection NF welds. Twelve of the 60 supports contained undersized welds, but these deviations were within the ASME Code allowable stress limitations and therefore were not significant.

For ISAP V.b, the CPRT confirmed that there had been improper shortening of anchor bolts for the steam generator upper lateral (SGUL) supports. Inspections of other populations of bolted connections in this ISAP as well as ISAP VII.c (i.e., Richmond inserts and drill and tap blind connections) identified an unclassified trend of inadequate thread engagement in Richmond inserts. Corrective actions for the finding include a program to determine the adequacy of the inserts (see Section 7.1 of Part III).

For ISAP V.d, the CPRT reinspected pipe and cable tray supports to identify whether there were any uncontrolled plug weld repairs to holes existing in critically loaded supports or base plates that could affect their structural integrity and their intended safety function. Although some deviations involving undocumented plug welds were identified, all of the deviations satisfied the criteria in AWS D1.1 for visual examination.

For ISAP VII.b.1, TRT concerns regarding onsite fabrication shop activities were investigated by the CPRT. Thirty-two deviation reports and two QA/QC program deviation reports were issued to document deviations identified through implementation of the ISAP. These deviations were evaluated and determined to have no safety-significant hardware effect on the component support systems.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

For ISAP VII.b.3, the CPRT performed reinspections of 220 pipe supports for purposes of investigating the TRT concerns and assessing the impact of these concerns on construction quality. Additionally, more than 300 pipe supports were reinspected under ISAP VII.c for the purpose of assessing construction quality. Many of the TRT concerns were substantiated. Corrective actions for identified deficiencies were implemented by TU Electric, as described in Section 6.2.

Based on the above, the CPRT concludes that upon completion of the required corrective actions, there will be reasonable assurance that hardware areas addressed by the ISAPs for TRT issues will meet the significant, safety-related requirements of the applicable design.

6.2 ISAP VII.c - Large-Bore Rigid Pipe Supports; Large-Bore Non-Rigid Pipe Supports; and Small Bore Pipe Supports

A total of 251 items, encompassing approximately 65,000 inspection points, was reinspected in these CWCs. Additionally, documentation reviews covered approximately 20,000 review points. Approximately 99 percent of the inspection points and more than 99 percent of the review points were determined to be in conformance with the design.

Quality documentation was used to support hardware adequacy conclusions for the attributes shown in Table 6.1 for this CWC.

Approximately 63 percent of the reinspection deviations were insignificant and did not affect the capability of the pipe supports to transfer applied loads to the supporting structure or to maintain its structural integrity. For example, 15 percent of the deviations identified in the reinspections involved various defects in welding for size, location, length, profile and undercut. Evaluation of these deviations determined that there was sufficient design margin such that effects of the deviations were minimal. These deviations were determined to be insignificant.

All of the deviations identified by the documentation reviews in these CWCs were insignificant and did not affect the function or integrity of the installed pipe supports. For instance, 93 percent of the deviations identified in the documentation review involved material traceability. Evaluation of these deviations determined that the deviations were the result of documentation errors (both recording and omission) and all material was traceable by other documentation to its origin. These deviations were determined to be insignificant.

Fourteen construction deficiencies and two adverse trends were identified by the reinspection in these CWCs. Four construction deficiencies involved missing or incorrectly installed locking devices for bolting material that resulted from inadequate engineering instructions. Among the corrective actions taken for these construction deficiencies is the installation of suitable locking devices on non-high strength (ASME Code) bolting and on high strength bolting that is not torqued.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 6.1 Supports Discipline ISAP VII.c
Documentation Review Attributes

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
Large-Bore Rigid Pipe Supports; Large-Bore Non-Rigid Pipe Supports; and Small-Bore Pipe Supports	Documentation of Inspection Drawings
	ASME Welding Documentation
	Concrete Expansion Anchor Installation Documentation*
	ASME Material Traceability Documentation
	Vendor-Supplied Component Installation Documentation
Instrumentation Tube Supports	Material Traceability
	Concrete Expansion Anchors*
	Drawing Revision
	Stud Welding
Pipe Whip Restraints	Traveler Package Completeness
	Fit-up, Preheat, Stress Relief and Non-Destructive Examination of Welds
	Torque for Bolted Connections
	Tightness of Concrete Inserts and Nuts for Embedded Bolts
	Torque and Rework for Concrete Expansion Anchors*
	Material Traceability
	Hot Gap Between Pipe and Restraint
	Weld Procedure Qualification and Application
	Welder Qualification

* Addressed in ISAP VII.b.4 Results Report.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 6.1 Supports Discipline ISAP VII.c
Documentation Review Attributes
(Cont'd)

CONSTRUCTION WORK CATEGORY	DOCUMENTATION REVIEW ATTRIBUTES
Equipment Supports	Documentation of Operations Traveler
	Welding Documentation
	Concrete Expansion Anchor Documentation*
	Bolting Documentation
	Material Traceability
HVAC Duct Supports	Weld Procedure Application
	Welder Certification
	Concrete Expansion Anchor Inspection*
	Inspection of Bolt Installations into Concrete Inserts
	Material Traceability
Conduit Supports	Concrete Expansion Anchors*
	Stud Welding
	Welding
	Drawing Revision
	Structural Bolting
	Junction Box Support Capacity

* Addressed in ISAP VII.b.4 Results Report.

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7.0 PROPORTIONALLY SAMPLED ATTRIBUTES FROM ISAP VII.c

A number of attributes occurred in two or more CWCs in ISAP VII.c where the work processes were similar. Where 60 items with such an attribute was not obtained in one or more of these CWCs, the CPRT elected to use proportional sampling to combine reinspection data from multiple CWCs to assess the quality of construction relative to such an attribute for these CWCs. The results of the proportional sampling for these attributes are discussed below.

7.1 Concrete Insert Thread Engagement

Concrete insert thread engagement addressed the engagement length of threaded rods or bolts into threaded concrete (Richmond) inserts. These inserts were utilized in the installation of safety-related components for the following CWCs:

- Structural Steel
- Pipe Whip Restraints
- Large-Bore Rigid Pipe Supports
- Large-Bore Non-Rigid Pipe Supports
- Small-Bore Pipe Supports

Two hundred seven items, encompassing approximately 323 inspection points, were reinspected in this category. Over 86 percent of the inspection points were determined to be in conformance with the design. No documentation review was performed.

Approximately 30 percent of the deviations identified by reinspections were insignificant and did not affect the capability of the inserts to perform their intended function.

An unclassified trend was identified for concrete insert thread engagement. Among the corrective actions taken for this unclassified trend were 1) the performance of a test program to establish the allowable loadings for bolting in concrete inserts with less than full thread engagement; 2) a demonstration of the adequacy of field installations of Richmond inserts through a margin analysis on those construction work categories with most heavily loaded Richmond inserts; and 3) the repair of those installations, if any, that require it.

Based on the above, the CPRT concludes that, upon completion of the corrective action, there will be reasonable assurance that thread engagement in concrete inserts at CPSES will meet the significant, safety-related requirements of the October 1985 design.

7.2 AISC Bolting

AISC bolting is comprised of bolting that was installed in accordance with similar specifications and procedures for the following CWCs:

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- Structural Steel
- Pipe Whip Restraints
- Equipment Supports

The reinspection or documentation review deviations identified for AISC bolting were analyzed for safety significance along with the deviations for the other attributes for the respective CWCs. The AISC bolting deviations were then combined from the three CWCs and analyzed for the presence of trends beyond those already identified in these CWCs. As a result of the evaluation, corrective actions regarding locking devices and bolt tightness for structural steel and pipe whip restraints were extended to equipment supports.

Based on the above, the CPRT concludes that, upon completion of the corrective actions, there will be reasonable assurance that AISC bolting in the three CWCs listed above will meet the significant, safety-related requirements of the October 1985 design.

7.3 Brown & Root AWS D1.1 Welding

AWS welding is comprised of welding that was performed in accordance with the American Welding Society Structural Welding Code, AWS D1.1 in the installation of equipment and structures in the following CWCs:

- Cable Tray
- Structural Steel
- Instrumentation Tube Supports
- Equipment Supports
- Pipe Whip Restraints
- Conduit Supports

The reinspection and documentation review deviations identified for AWS welding were analyzed for safety significance along with the deviations for the other attributes for the respective CWCs. The AWS welding deviations were then combined from the six CWCs and analyzed for the presence of trends. As a result of this evaluation of AWS welding reinspection and documentation review deviations, no additional trend was identified.

At the time that this combined evaluation of AWS D1.1 welding reinspection and documentation review results was completed, it was recognized that one remaining issue required further evaluation. As stated in the ISAP VII.c Results Report, Appendix 35, many of the items that were reinspected were covered with protective coatings. These protective coatings typically were not removed prior to reinspection of the welds. The weld geometry-related characteristics of location, size and profile, and length can be inspected reliably through protective coatings. However, uncertainty exists regarding how reliably the weld

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the findings were identified through ISAP VII.c, and the fifth was identified through ISAP II.c, which was developed to address specific TRT issues.

Examples of procedure omissions that were considered in this area include the following:

- One finding involved gaps between members of structural steel frames. The specification required that all such gaps be closed, but that requirement was not included in either the construction or the inspection procedure.

- One finding involved the presence of rust on stainless steel tanks and liners. The procedures did not include cleanliness requirements or the proper controls over grinding tools that are typically applicable to stainless steel fabrication.

For the four findings identified through a sample reinspection, the deviation rates ranged from approximately 12 to 86 percent. These rates are sufficiently high that detection by the sample screen was assured.

A corrective action program was established for each of the five individual findings, that includes sufficient reinspections to ensure detection of other similar deviations and procedure revisions to prevent recurrence of the specific problems.

Clarity of Installation Criteria

The CPRT identified nine findings that involved ambiguous installation criteria as a causal factor; seven of these were identified through ISAP VII.c sample reinspections and two were TRT issues addressed in issue specific ISAPs. Installation criteria are unclear or ambiguous when users of the criteria (construction and QC) understand and implement something other than what the preparer (engineering) intended. These findings involve criteria in construction and inspection procedures that remained ambiguous throughout the construction cycle. In cases where procedures were clarified, a review should have been performed for work completed in accordance with earlier revisions of the procedures; any failure to do so would fall in the area of backfit of procedure changes (discussed in category four) rather than in this area.

Examples of installation criteria that were considered ambiguous include the following:

- the requirements for slack at free-air cable transitions were specified in a manner that did not prescribe the method of measurement;

- the criteria for piping clearances were 1) inconsistently stated among several specifications, 2) incomplete in addressing both non-piping components and allowable insulation notching, 3) based on post-insulating clearances yet applicable to decisions made prior to insulating, and 4) written to permit later insulation material substitution without engineering approval; and

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

- design documents did not adequately specify how construction tolerances were to be applied in constructing walls to obtain the two inch air gap for seismic separation of buildings.

For the seven findings identified through a sample reinspection, the deviation rates ranged from approximately 6 to 100 percent. These rates are sufficiently high that detection by the sample screen was assured.

A corrective action program was established for each of the nine individual findings that includes sufficient reinspections to ensure detection of other similar deviations and procedure revisions to prevent recurrence of the specific problems.

Collective Evaluation for Construction and Inspection Procedures

The preceding discussion addressed fourteen findings. In each case, the corrective actions include adequate inspections and procedure revisions to resolve the specific problem identified. Only two of the findings were evaluated to be construction deficiencies. Nevertheless, an evaluation was performed to determine whether additional corrective action was warranted.

The need for additional hardware corrective action was evaluated by the CPRT. The existence of a significant procedure omission (of criteria or guidance) or ambiguity is very likely to result in a high deviation rate, because the personnel implementing the procedures do not have adequate instructions. Thus, detection of such procedure weaknesses through sampling is very likely.

To test this expectation, the evidence collected through the sampling program (ISAP VII.c) was reviewed for each finding. Each of the ISAP VII.c findings in this category was concluded to have been readily detectable by the sample screen as implemented: each occurred at a frequency almost certain to be detected, given the screen parameters. The identified deviation rates for the eleven findings from ISAP VII.c ranged from approximately 6 to 100 percent. The CPRT concludes that there is reasonable assurance that potentially significant instances of procedure omissions and ambiguous criteria have been identified through the CPRT sampling process.

Furthermore, to the extent that the Project's separate evaluations, as discussed in Part II, conclude that the construction deficiencies in this category would not have precluded achieving or maintaining a safe plant condition, there will be additional confidence that further remedial corrective action is not warranted.

The need for additional preventive action was also evaluated. The CPRT has developed additional information in this area in the assessments of 10CFR50, Criterion V, "Instructions, Procedures and Drawings," and Criterion X, "Inspection." Those assessments identified the following historic program areas of concern:

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There were five additional findings impacting supervision only. It was found that, for these findings and the eight mentioned above, preventive actions regarding supervision were not consistently recommended for each finding. The following preventive action is recommended:

> Ensure that a comprehensive program has been established and implemented for CPSES (including TU Electric and major contractors) for ensuring craft supervisory awareness of its responsibility for the assurance of construction quality and of the actions it is expected to take in carrying out this responsibility. Retrain supervisory personnel, as necessary, in the performance of their assigned tasks.

In each area, the CPRT considered whether further hardware corrective action was necessary. For the first two areas, the CPRT concludes that safety-significant manifestations have been detected and corrected. The third area consisted of unrelated cases of inattention to detail or isolated construction errors that were not indicative of an overall programmatic problem. Only seven of the twenty-five findings in this category were evaluated to be construction deficiencies using the conservative approach adopted by the CPRT. Based on the above, the CPRT concludes that no additional corrective action is warranted for existing hardware.

Furthermore, to the extent that the Project's separate evaluations, as discussed in Part II, conclude that the construction deficiencies in this category would not have precluded achieving or maintaining a safe plant condition, there will be additional confidence that further corrective action is not warranted.

8.4 Finding Category Four: Construction Configuration Control

The category of "construction configuration control" includes those findings whose root causes relate to the assurance that design changes are implemented in the field. The elements of a configuration control program that are applicable to construction include: 1) control and distribution of design documents and design changes to appropriate personnel; 2) review of design documents and changes to determine if work is required; 3) preparation of work-initiating documents and tracking them to completion; and 4) verification that completed hardware is in accordance with design documents.

CPRT identified nine hardware findings in the category of "construction configuration control". Three of the findings involve configuration control for design changes to specific safety-related equipment. Another two involve the backfit of generic hardware design changes to completed installations. The final four involve the backfit of work process or inspection (procedure) changes. Table 8.4 identifies the findings in each of these areas. Four of these findings were evaluated to be construction deficiencies using the conservative approach adopted by the CPRT. As discussed in Part II, separate evaluations are being performed by the Project. Preliminary indications are that few, if any, of the construction deficiencies in the construction configuration

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

control category, had they remained uncorrected, would have precluded achieving or maintaining a safe plant condition. The findings and the collective evaluation in each area are discussed below.

Collective Evaluation for Configuration Control of Design Changes

Three of the findings relate to deviations involving construction configuration control. Each finding is applicable to a single hardware item: the Unit 1 pressurizer platform had eight jam nuts omitted from a steel structure; a specific circuit for one safety train had cable terminal points that were not switched to incorporate a post-testing design change; and a large-bore piping expansion joint had a temporary tie rod installation.

Control and distribution of design documents was investigated in ISAP II.a ("Reinforcing Steel in the Reactor Cavity", Section 5.6), in the root cause evaluation for the expansion joint finding (ISAP VII.c, Appendix 8) and in ISAP VII.a.3 ("Document Control"). These investigations identified a Project document control procedure (currently DCP-3) that required controlled distribution of design changes to affected construction discipline supervisors (element 1 of configuration control). Review of design changes by the disciplines to determine work impacts was also mandated by the procedure (element 2), though no provision was made for tracking or recording dispositions. This step in the process was thus required but not controlled, a process weakness that is likely to have contributed to two of the three findings.

A corrective action program was established for the individual findings in the configuration control area. The corrective action was broadened to address all structural steel design change documents, all wiring design changes, and specialty hardware items analogous to the expansion joints. Further, the Project has established a paper flow group charged with tracking the entire configuration control process to ensure that each step is properly implemented. This approach to configuration control is consistent with contemporary industry practice, obviating the need for additional preventive corrective action.

The CPRT concludes that two of the three findings did not reflect the prevailing configuration control practice, but were instead attributable to exceptional circumstances: the way that the termination design change was issued was an important factor in the resulting finding (i.e., the multi-purpose drawing revision obscured the design change); the circumstances in the tie rod installation were unique (involving an unmarked temporary installation, a lost traveler replaced incorrectly, and ambiguity as to which craft were responsible). The remaining finding in structural steel is attributed to an oversight by the responsible discipline engineer; the finding involved locking devices that were found generically to require corrective action at CPSES. Thus, the three findings described here do not demonstrate a generic problem with configuration control.

affords additional assurance that any undetected significant deviation resulting from a prior failure to address the need to backfit a generic design change will be corrected. The CPRT concludes that no additional corrective action is required in this area.

Collective Evaluation for Backfit of Work Process Changes

Four hardware findings and three QA/QC program deficiencies involve changes to installation or inspection instructions that were not applied to previously completed work. In the characterizations of the findings that follow, the adjective "evolutionary" is used to distinguish changes that either better describe an ongoing work process or clarify how criteria are to be applied as distinct from more substantive changes that add a new inspection attribute or prohibit a practice that had been widely used. Evolutionary changes often serve primarily to cue a work process that has already been established through training and experience; the evolutionary changes would be expected to have less impact on the actual hardware than would the more substantive changes that must be disseminated and applied to effect the intended modification of the work process.

The findings involving evolutionary changes and the corresponding corrective actions include:

- Two findings in the structural steel population for member substitutions and welds on a particular fitting involve installations performed prior to a requirement for a documented inspection, issued in June, 1981 (change in form but not in criteria). Neither finding involved deviations that were evaluated to be safety significant; however, all steel structures without a documented inspection will be reinspected per current procedure requirements.

- Initial installations of heat shrinkable cable insulation sleeves were performed prior to incorporation of detailed instructions from the manufacturer into the inspection procedure. Neither of the two found deviations was safety-significant; however, reinspection of sleeves in harsh environments will be performed.

- A drawing was revised in 1984 to include directions for measurement of flexible conduit slack in shake spaces; however no evidence could be found of a formal program to reinspect existing installations or of a documented basis for not doing so. The single deviation found by CPRT was acceptable as-found, but reinspections will be performed to ensure adequate slack, particularly at higher elevations where predicted seismic movements are larger.

The findings involving more substantive changes and the corresponding corrective actions include:

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- Welding inspection criteria for electrical equipment supports were upgraded in a procedure revision issued in January, 1983. A separate instruction was prepared in this instance to address "Reverification of Seismic Electrical equipment mounting" details; however, CPRT checks of the corresponding equipment files led to a conclusion that the reverification program was not consistently implemented (PDR-81). The corrective action program will investigate and address the adequacy of inspections for this equipment.

- Similar upgrades were made in inspection criteria for cable tray welds (PDR-80).

- The use of rectorseal for instrument installations was banned after January, 1981, but no documentation of a program to ensure removal could be found. The CPRT classified the problem as a QA/QC program deficiency because of the scope of effort anticipated to be necessary to determine whether any of the material remained in use even though there were no specific deviations identified. Corrective action will involve such a determination.

Following review of the findings above, CPRT decided to focus further attention on backfitting of changes in inspection procedures. This decision was based upon two considerations. First, in general, the findings discussed above involved a failure to backfit changes in inspection procedures. Second, since inspection procedures identify the hardware attributes that are thought to be significant at the time of installation, any significant change in the installation process would be reflected in the corresponding inspection procedure.

The CPRT investigated the administrative requirements and the history pertinent to the backfit of inspection process changes. CPRT did not identify an administrative procedure that historically required evaluation of the need to backfit inspection procedure changes. However, a problem with the adequacy of inspection procedures was identified in an audit addressing the renewal of Brown and Root's code stamp in late 1981. TU Electric took immediate corrective action, replacing key management personnel, upgrading the ASME program, and extending the lessons learned to the ongoing non-ASME programs. TU Electric also decided to employ "sweeps" at the time of turnover, rather than apply item-by-item backfits of the new inspection criteria that were developed when the problems with inspection criteria were corrected. This decision explains the lack of specific backfit documentation for each individual procedure upgrade. The CPRT was unable to find documented evidence, however, that these sweeps were completely and consistently implemented.

The QA collective evaluation concludes that TU Electric has implemented effective prospective corrective action to ensure future adequate response to backfitting issues raised by inspection procedure upgrades. The likely impact of past practice on the adequacy of the installed hardware remains to be addressed, however.

The CPRT concludes that these three findings were attributable to limited and unrelated process weaknesses, were addressed by appropriate corrective action in each instance, and were not indicative of any programmatic problems warranting additional corrective action.

Collective Evaluation for Subsequent Changes

The CPRT collectively evaluated the findings in this category, together with the related evidence. The findings in this category indicate that, in some areas, the task of maintaining and modifying the plant has not always been accomplished successfully. Nevertheless, as discussed in the areas above, the findings in this category are either sufficiently bounded or isolated, such that they are adequately addressed by existing corrective actions. Furthermore, to the extent that the Project's separate evaluations, as discussed in Part II, conclude that the construction deficiencies in this category would not have precluded achieving or maintaining a safe plant condition, there will be additional confidence that further remedial corrective action is not required.

The CPRT concludes that there is reasonable assurance that significant manifestations in the as-built plant of the generic implications from this finding category are addressed by the corrective actions that are being taken by the Project.

8.6 Finding Category Six: Design Information (Engineering)

The category of "design information (engineering)" includes those findings whose root causes involve various engineering outputs (e.g., drawings, specifications or design evaluations) that were part of the applicable design for the ISAP investigations. In the situations that resulted in these findings, construction personnel typically did as they were told (or not told) by the designers. Thus, the findings involve the adequacy of design information that is within the scope of the Project's design review activities, and do not involve the quality of construction. Other findings where design information as reflected in installation procedures was ambiguous (as distinct from missing or wrong) were included in category two; other findings where design information was corrected during the construction cycle, but not applied to completed work, were included in category four and evaluated as instances of failure to backfit.

CPRT identified eleven hardware findings in this category, with three involving design products that did not ensure adequate installation and eight involving engineering evaluations that did not ensure correction of a noted problem with an as-built condition. Table 8.6 identifies the findings in each of these areas. Seven of these findings were evaluated to be construction deficiencies using the conservative approach adopted by the CPRT. As discussed in Part II, separate evaluations are being performed by the Project. Preliminary indications are that few, if any, of the construction deficiencies in the design information (engineering) category, had they remained uncorrected, would have precluded achieving or maintaining a safe plant condition. The collective evaluation of the findings is discussed below.

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Collective Evaluation

The Project has initiated extensive remedial programs to ensure that the design of CPSES is adequate. The programs include the Specification Procedure and Drawing Update (SPADU) program to ensure appropriate specification of installation requirements, re-examination of the technical validity of the disposition of nonconformance reports, and a design validation. These programs have been developed to detect and correct the types of problems identified by CPRT in the actual findings in Table 8.6. Once design problems are detected, the Post Construction Hardware Validation Program will identify differences between the as-built plant and the corrected design and institute corrective actions for the hardware. Therefore, the Project's programs are designed to address generic implications of the findings in the design information category.

8.7 Finding Category Seven: Documented Evidence of Hardware Quality

Through ISAP VII.c, the CPRT evaluated the quality of construction by examination of a set of attributes for each hardware installation that was sufficient to ensure performance of the hardware safety function. In most cases, attributes were either reinspected or quality documentation was reviewed to determine the quality of construction. Inspection documentation was reviewed for those safety-related attributes that were non-recreatable or inaccessible for all sample items. Examples of such attributes include situations where in-process inspection is part of the process to control the quality of work (e.g., witnessing the pouring of concrete, the pulling of cable) and where completed work is not accessible (e.g., rebar embedded in concrete).

Documentation that was determined to provide the desired evidence of hardware quality was relied upon in developing the CPRT quality of construction conclusions.

In the situations in which the CPRT relies upon quality control (QC) documentation as the basis for hardware acceptability, the documentation was determined to be adequate for that purpose based on the following factors:

1. An acceptable inspection report or other acceptable inspection documentation exists.

2. The inspection was performed by a capable inspector.

3. The acceptance criteria for inspection were sufficiently comprehensive and detailed to verify that the as-built attribute is acceptable.

4. A review of the available evidence does not reveal factors adverse to acceptable inspector performance.

Each of these factors is discussed below. For each factor, the instances, if any, are identified where the documentation was not adequate to support conclusions regarding the quality of construction. In these cases the affected documentation was not relied upon. With

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In summary, CPRT relied on inspection documentation as evidence of the quality of construction only in those cases where the inspector was qualified or was determined to be capable of conducting the required inspections.

Adequacy of Inspection Acceptance Criteria

The validity of a signed QC inspection report depends, in part, on whether the inspector determined that the correct attribute acceptance criteria were met. There was a number of specific findings from ISAP VII.c and other ISAPs whose root causes were less-than-adequate inspection procedures. These weaknesses in the inspection procedures resulted in inspection reports that did not reflect the actual condition of the hardware. In cases determined to be findings, corrective action will bring the affected hardware, within the sample and in the uninspected population, into conformance with the design.

In finding category four, the CPRT addressed potential weaknesses in historical inspection procedures with a corrective action recommendation that these procedures be reviewed to identify attributes not subject to an adequate inspection. Affected attributes that are not already being reinspected under PCHVP for other reasons will be evaluated to verify installation adequacy; if necessary, reinspections will be performed to complete the evaluations.

In summary, CPRT will be relying on inspection documentation to establish the quality of construction only in those cases where the applicable inspection procedure had adequate acceptance criteria.

Inspector Performance

Reinspection results were reviewed for evidence on inspector performance. As has been previously noted, the overall agreement rate for reinspections exceeded 98 percent. This confirms a generally acceptable level of inspector performance.

Additionally, the observed deviations from requirements were evaluated to determine if adverse inspector performance was a significant factor in the CPRT findings. Deviations could result from several factors including:

- the inspector was not qualified to perform the inspection (this is discussed above);
- the inspection procedures were not sufficient (this is discussed above);
- changes may have been made to the hardware after the inspection was completed (this is discussed in Section 8.5);
- the inspector inadvertently erred or was insufficiently attentive during the inspection (this is discussed below); and

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- the inspector knowingly erred as a result of harassment or any other reason (this is discussed below).

The root causes for deviations that resulted in findings were reviewed to identify those that were attributed in whole or in part to inspector error. Conservatively, this review identified those findings whose root causes were classified as indeterminate but had the possibility for inspector error to be the cause. Additionally, this review included those findings whose secondary or contributing root causes (not the primary root cause) were attributed to inspector error. A total of 200 deviations related to twelve findings fell into this category. This indicates that inspector errors (excluding Bahnson) which led to findings represent only 2.8 percent of all deviations.* When expressed as a fraction of the total reinspection points the inspector error rate which led to findings was 0.04 percent. These rates are sufficiently small to be within the range expected for a properly functioning QA program.

The findings attributable to inspector error were also reviewed to identify any instances of potential inspector intimidation. In all but two cases, causes other than intimidation or harassment were identified to explain why the inspector error occurred, and no positive indication of harassment or intimidation was identified. In two cases, harassment or intimidation, while not likely, could not be ruled out. These cases were referred to TU Electric SAFETEAM. SAFETEAM had no information in its possession that would indicate that either harassment or intimidation was a factor in these two cases. The CPRT concludes that harassment and intimidation, if any occurred, did not have a significant effect on the adequacy of inspections at CPSES.

In summary, inspector errors which led to findings were less than three percent of the deviations identified by the CPRT, and the performance of inspectors at CPSES was generally acceptable. Therefore, the CPRT concludes that inspection documentation was, in general, accurately and properly prepared by the inspectors.

Evaluation for Material Traceability

ISAP VII.a.1 assessed the adequacy of the material traceability and control systems implemented during construction at CPSES. All material traceability deviations recorded during CPRT reinspections were collectively evaluated to reach an overall conclusion for this attribute.

The ISAP VII.a.1 results report concluded that the material control/traceability program is in accordance with TU Electric commitments in the FSAR. The implementation of this program, even though some procedures were considered to have weak controls, has been generally adequate.

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* The 200 deviations represent 9.6 percent of all deviations associated with VII.c findings. But, the measure of interest is the impact of inspector error on the hardware, i.e., those inspector errors that contributed to CPRT findings as a fraction of total deviations.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Conclusion

The CPRT has only relied upon documentation to evaluate the quality of construction in those cases where (1) the CPRT could locate the documentation, (2) the inspector preparing the documentation was qualified or determined to be capable of performing the inspection, and (3) the procedures governing the inspection contained adequate acceptance criteria. Additionally, the CPRT has determined that the performance of inspectors was generally acceptable. Therefore, the CPRT concludes that, in those cases where it has relied upon documentation, the documentation is an accurate indicator of the quality of construction of the items that are the subject of that documentation.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.1 Findings Considered in Collective Evaluation of Construction Programs

AREA	FINDING NUMBER ISAP REFERENCE	FINDING [1] DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY [2] IN SAMPLE, %
HVAC Construction Programs	S-HVDS-01 VII.c Appendix 31	Duct-to-Support Attachments	Two Construction Deficiencies	59
	S-HVDS-02 VII.c Appendix 31	Widespread Deviations	Unclassified Trend	74 (3)
	M-DUPL-01 VII.c Appendix 15	Installation Design Details	Unclassified Trend	5.6 (4)
	Q-I.d.1-04 ISAP I.d.1 PDR-45	Certifications	QA/QC (6) Program Deficiency	N/A (5)
	S-HVDS-03 VII.c Appendix 31 PDR-37 and PDR-57	Documentation for Richmond Inserts and Welding	Two QA/QC Program Deficiencies (6)	28 and 15
Pipe Whip Restraints	S-PWRE-01 VII.c Appendix 29	Stiffeners	Adverse Trend	4.1

(1) See Appendix C for a more detailed "finding description" for Tables 8.1 - 8.7
(2) Number of items with significant deviations divided by total items inspected for the affected attributes for Tables 8.1 - 8.7
(3) This number is approximate because reinspection was suspended due to widespread deviations
(4) Includes first sample items only
(5) Not statistically sampled
(6) Not a hardware finding

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Table 8.1 Findings Considered in Collective Evaluation of Construction Programs (Cont'd)

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Pipe Whip Restraints (Continued)	S-PWRE-03 VII.c Appendix 29	Shim Welds	Construction Deficiency	1.0
	S-PWRE-07 VII.c Appendix 29	Welds	Adverse Trend	1.6
	S-PWRE-02 VII.c Appendix 29	Levelness and Plumbness	Construction Deficiency	1.0
Lighting System	E-LITG-01 VII.c Appendix 3	Widespread Deviations	Unclassified Trend	100 (1)
	E-CDUT-04 VII.c Appendix 1	Bushings	Adverse Trend	3.0
Installation Interactions	E-CDUT-03 VII.c Appendix 1	Electrical Separation	Adverse Trend	12
	E-CATY-02 VII.c Appendix 2	Electrical Separation	Adverse Trend	6.1

(1) Reinspection only

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.1 Findings Considered in Collective Evaluation of Construction Programs (Cont'd)

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Installation Interactions (Continued)	E-I.b.4-01 ISAP I.b.4	Electrical Separation	203 Unclassified Deviations	N/A (1)
	E-CABL-02 VII.c Appendix 3	Separation Barrier Material	Adverse Trend	29
	M-LBCO-02 VII.c Appendix 8	Piping Clearance	Unclassified Trend	24
	M-SBCO-02 VII.c Appendix 9	Piping Clearance	Unclassified Trend	39
	C-VII.b.4-01 ISAP VII.b.4	Hilti Bolt Spacing	Unclassified Trend	8.5 (2)

(1) Not statistically sampled
(2) Proportional sampling

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.2 Findings Considered in Collective Evaluation of Construction and Inspection Procedures

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Sufficient Criteria and Guidance	C-STEL-08 VII.c Appendix 19	Gaps Between Connected Plies	Two Construction Deficiencies	12 (2)
	C-LINR-01 VII.c Appendix 23	Presence of Rust	Unclassified Trend	79 (1)
	S-PWRE-06 VII.c Appendix 29	Joint Tightness	Adverse Trend	43
	S-INSP-01 VII.c Appendix 28	Bolt Torque and Nut Alignment	Construction Deficiency	32 and 86 (3)
	C-II.c-01 ISAP II.c	Debris in Seismic Air Gap	Unclassified Deviation	N/A (1)
Clarity of Installation Criteria	E-CABL-01 VII.c Appendix 3	Flexible Conduit Slack	Adverse Trend	22
	E-CABL-06 VII.c Appendix 3	Power Cable Spacing	Unclassified Trend	100

(1) Not statistically sampled
(2) A combined evaluation was performed for C-STEL-02 and C-STEL-08.
(3) A combined evaluation was performed for S-INSP-01 and S-INSP-02.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.2 Findings Considered in Collective Evaluation of Construction and Inspection Procedures (Cont'd)

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Clarity of Installation Criteria (Continued)	E-CDUT-03 VII.c Appendix 1	Electrical Separation	Adverse Trend	12
	E-CATY-02 VII.c Appendix 2	Cable Tray Separation	Adverse Trend	6.1
	M-LBCO-02 VII.c Appendix 8	Piping Clearance	Unclassified Trend	24
	M-SBCO-02 VII.c Appendix 9	Piping Clearance	Unclassified Trend	39
	M-PBFA-01 VII.c Appendix 10	Minimum Wall Thickness	Unclassified Trend	70
	M-VI.a.-01 ISAP VI.a	Insulation/Shield Wall Gap	Unclassified Deviation	N/A (1)
	C-II.c-02 ISAP II.c	Seismic Air Gap Width	Unclassified Deviation	N/A (1)

(1) Not statistically sampled

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.3 Findings Considered in Collective Evaluation of Construction Implementation

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Training or Supervision	S-LBSR-02 VII.c Appendix 25	Incorrect Gaps	Adverse Trend	23
	S-SBPS-01 VII.c Appendix 27	Incorrect Gaps	Adverse Trend	31
	S-VII.b.3-08 ISAP VII.b.3	Incorrect Gaps	Unclassified Deviation	N/A (1)
	S-VII.b.3-02 ISAP VII.b.3	Incorrect Gaps	Construction Deficiency	N/A (1)
	S-LBSR-04 VII.c Appendix 25	Incorrect Pipe Clamp Spacers	Construction Deficiency	11
	M-PBFA-01 VII.c Appendix 10	Lack of Wall Thickness Data	Unclassified Trend	70
	C-RICH-01 VII.c. Appendix 33	Thread Engagement	Unclassified Trend	10

(1) Not statistically sampled

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.3 Findings Considered in Collective Evaluation of Construction Implementation (Cont'd)

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Training or Supervision (Continued)	S-INSP-03 VII.c Appendix 28	Incorrect Installation Tube Restraint Clamps	Unclassified Trend	3.8
Supervision Only	E-ININ-02 VII.c Appendix 7	Misaligned Hoses and Missing Anti-Torque Indicator Lines	Construction Deficiency	30
	S-INSP-02 VII.c Appendix 28	Loose Non-Unistrut Spring Nut Bolts	Construction Deficiency	86 (2)
	S-INSP-04 VII.c Appendix 28	Thread Engagement on Unistrut Spring Bolts	Unclassified Trend	18
	C-STEL-07 VII.c Appendix 19	Undersized Welds	Unclassified Trend	35
	C-STEL-03 VII.c Appendix 19	Missing Welds	Adverse Trend	5.6
Inattention to Detail	C-VII.b.4-03 ISAP VII.b.4	Bottomed-Out-Nuts	Unclassified Trend	N/A (1)

(1) Not statistically sampled
(2) A combined evaluation was performed for S-INSP-01 and S-INSP-02.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.5 Findings Considered in Co[illegible]e Evaluation of Subsequent Changes (Cont'd)

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Fasteners (Retaining Devices) (Continued)	S-VII.b.3-03 ISAP VII.b.3	Locknut on Pipe Clamp	Construction Deficiency	N/A (1)
Other Findings	S-PWRE-04 VII.c Appendix 29	Cold Gaps Between Pipes and Restraints	Unclassified Trend	47
	E-CABL-09 VII.c Appendix 3	Terminal Block Screw	Construction Deficiency	Out-of-Scope (2)
	E-EEIN-01 VII.c Appendix 6	Cracked Insulator	Construction Deficiency	1.0

(1) Not statistically sampled
(2) Not statistically based

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.6 Findings Considered in Collective Evaluation of Design Information (Engineering)

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Design Process	E-EEIN-03 VII.c Appendix 6	Fuse Size	Two Construction Deficiencies	2.0
	S-V.b-01 ISAP V.b	Component Installation Steam Generator Upper Lateral Supports	Unclassified Deviations	N/A (1)
	C-STEL-02 VII.c Appendix 19	Gaps Between Connected Plies	Construction Deficiency	12 (3)
Engineering Evaluations	S-LBSR-03 VII.c Appendix 25	Locking Devices On Threaded Fasteners - Vendor Components	Construction Deficiency	93 (2)
	S-LBSN-02 VII.c Appendix 26	Locking Devices On Threaded Fasteners - Vendor Components	Construction Deficiency	93 (2)
	S-SBPS-02 VII.c Appendix 27	Locking Devices On Threaded Fasteners - Vendor Components	Construction Deficiency	93 (2)

(1) Not statistically sampled
(2) A combined evaluation was performed for S-LBSR-03, S-LBSN-02 and S-SBPS-02
(3) A combined evaluation was performed for C-STEL-02 and C-STEL-08.

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.6 Findings Considered in Collective Evaluation of Design Information (Engineering) (Cont'd)

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE, %
Engineering Evaluations (Continued)	S-VII.b.3-01 ISAP VII.b.3	Locking Devices - Vendor Components	Construction Deficiency	N/A (1)
	S-PWRE-05 VII.c Appendix 29	Locking Device Installation	Adverse Trend	78
	E-CDUT-02 VII.c Appendix 1	Insufficient Slack	Adverse Trend	1.3
	C-II.c-03 ISAP II.c	Disposition of NCR C-83-01067	Unclassified Deviation	N/A (1)
	M-MEIN-01 VII.c Appendix 17	Broken Bolts	Construction Deficiency	1.5 (2)

(1) Not statistically sampled
(2) Includes first sample items only

Part III - QUALITY OF CONSTRUCTION COLLECTIVE EVALUATION (Cont'd)

Table 8.7 Findings Considered in Collective Evaluation of Documented Evidence of Hardware Quality

AREA	FINDING NUMBER ISAP REFERENCE	FINDING DESCRIPTION	FINDING CLASSIFICATION	FREQUENCY IN SAMPLE %
Missing/Inconclusive Documentation	C-STEL-05 VII.c Appendix 19	Missing Documentation	Unclassified Trend	49
	C-VII.b.4-04 ISAP VII.b.4	Missing/Inconclusive Documentation	Unclassified Trend	N/A (1)
Inadequate Inspections/ Procedures	E-CABL-03 VII.c Appendix 3	Inadequate Inspection/ Removal of 6.9 kv Cable Jacket and Insulation	Unclassified Trend	11
	Q-I.d.1-05 ISAP I.d.1	Inadequate Inspector Certification Procedures	Unclassified Trend	N/A (1)
	Q-I.d.1-04 ISAP I.d.1 PDR-45	Certification Discrepancies	QA/QC (2) Program Deficiency	N/A (1)

(1) Not statistically sampled
(2) Not a hardware finding

Part IV - QA PROGRAM COLLECTIVE EVALUATION (Cont'd)

and surveillance procedures and reports, reviews of nonconformance and corrective action procedures and documentation, reviews of QA records, and reviews of the results of extensive reinspections that were conducted by the CPRT. These reinspections included work inspected by QC inspectors with questionable qualifications, a sample of procured equipment and material biased toward problem vendors, reinspections of areas of concern such as electrical butt-splices and electrical separation, and the ISAP VII.c reinspections/document reviews of samples of construction work that included about 1.4% of the total safety-related items in the plant.

Part IV - QA PROGRAM COLLECTIVE EVALUATION (Cont'd)

3.0 COLLECTIVE EVALUATION

The following sections contain the results of the collective evaluations for each of the applicable 10CFR50 Appendix B Criteria. Under each Criterion, the CPSES QA program is evaluated for compliance with the program elements set forth for that Criterion in the CPSES FSAR and the NRC Standard Review Plan (SRP), as applicable. Within each section, the text of the applicable Appendix B Criterion is quoted, and the current TU Electric and Brown & Root QA programs are evaluated, followed by an evaluation of the historical QA programs of TU Electric, Brown & Root, and major subcontractors. Each section concludes with CPRT's overall assessment of the adequacy of the CPSES QA program under the Criterion at issue.

3.1 Evaluation of QA Program under 10CFR50, Criterion I, Organization

Criterion I of 10CFR50, Appendix B, contains the following requirements:

"The applicant shall be responsible for the establishment and execution of the quality assurance program. The applicant may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the quality assurance program, or any part thereof, but shall retain responsibility therefor. The authority and duties of persons and organizations performing activities affecting the safety-related functions of structures, systems, and components shall be clearly established and delineated in writing. These activities include both the performing functions of attaining quality objectives and quality assurance functions. The quality assurance functions are those of (a) assuring that an appropriate quality assurance program is established and effectively executed and (b) verifying, such as checking, auditing, and inspection, that activities affecting the safety-related functions have been correctly performed. The persons and organizations performing quality assurance functions shall have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions. Such persons and organizations performing quality assurance functions shall report to a management level such that this required authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations, are provided. Because of the many variables involved, such as the number of personnel, the type of activity being performed, and the location or locations where activities are performed, the organizational structure for executing the quality assurance program may take various forms provided that the persons and organizations assigned the quality assurance functions have this required authority and organizational freedom. Irrespective of the organizational structure, the individual(s) assigned the responsibility for assuring effective execution of any portion of the quality assurance program at any location where activities subject to this appendix are being performed shall have direct access to such levels of management as may be necessary to perform this function."

The CPRT evaluated the current and historical TU Electric, Brown & Root, and major subcontractors' QA programs for compliance with the applicable requirements of Criterion I as described in Section 17.1.1 of the FSAR

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and Section 17.1.II.1 of the SRP. The primary sources of information utilized for the evaluation were the results of reviews of the CPSES FSAR, the TU Electric QA program manual and CPSES QA plan, the Brown & Root QA manual, and the QA manuals of the major subcontractors. In addition, qualifications of key personnel from TU Electric, Brown & Root, and the major subcontractors were examined.

3.1.1 Current QA Program

During the CPRT evaluation of the current TU Electric and Brown & Root QA programs for compliance with Criterion I requirements, the determinations listed below were made.

- TU Electric clearly retains the responsibility for the overall CPSES QA program, as stated in the FSAR.

- TU Electric has identified and described, in the FSAR and various program documents, the major delegation of work involved in establishing and implementing parts of the QA program to other organizations, i.e., Brown & Root, Westinghouse, and the Engineering Services Contractors. In addition, TU Electric describes how responsibility for the overall program is maintained, how the performance of work by delegated organizations is evaluated, and identifies who within the TU Electric organization is responsible for the quality of delegated work. Clear management controls and lines of communication exist between TU Electric and its principal contractors.

- Organization charts for TU Electric and Brown & Root are included in the FSAR and other program documents that identify the "onsite" and "offsite" organizational elements that function under the cognizance of the QA program. The QA responsibilities of the organizational elements on the chart are described in applicable program documents.

- The TU Electric Director, Quality Assurance and the Brown & Root Quality Assurance Manager are identified in the respective QA program documents as the managers that retain overall authority for the TU Electric and Brown & Root QA programs respectively. These positions are at an appropriate level in the respective organizations to allow effective communication with other senior managers, i.e., the TU Electric Director, Quality Assurance reports to the TU Electric Vice-President, Nuclear Engineering, and the Brown & Root Quality Assurance Manager reports to the Brown & Root Vice-President Design Technology in the Central Engineering Department. They both have responsibility for approval of QA program documents, and they do not have other duties or responsibilities unrelated to QA that would detract from their QA responsibilities.

- Based on the organizational descriptions discussed above, individuals within the TU Electric and Brown & Root QA

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organizations that verify conformance to established requirements do not have responsibility for performing the work being verified. The QA manuals state that the QA organizations have the ability to identify quality problems; initiate, recommend, or provide solutions; and verify implementation of solutions. The personnel within the QA organizations with the authority to carry out these actions are identified and the methods of carrying out these actions are described. Personnel within the QA organizations are sufficiently free from direct pressures for cost and schedule, and specific personnel with stop work authority are identified. Provisions are established for the resolution of disputes involving quality-related between the QA organizations and other organizations.

- The CPRT has observed that personnel from the respective QA organizations are involved in day-to-day safety-related plant activities.

- Both TU Electric and Brown & Root have written policies, established at the Corporate President and Executive Vice President level, which establish the respective QA programs, define responsibilities for their development and implementation, and require compliance with their requirements.

- The position descriptions for the TU Electric Director, Quality Assurance and the Brown & Root Quality Assurance Manager provide them with sufficient authority to implement their responsibilities effectively. The qualifications of these persons are at least equivalent to those specified in the FSAR.

- The TU Electric Manager, Quality Control and the Brown & Root Site QA Manager, who have the primary responsibilities for directing the site construction QA program for TU Electric and Brown & Root respectively, have appropriate organizational positions, responsibilities, and authority described in respective program documents to exercise proper control over the site QA program. They are free from non-QA duties and give full attention to assuring that the site QA program is being effectively implemented.

Based upon the above, the CPRT concludes that the current TU Electric and Brown & Root QA programs under Criterion I adequately address the applicable program elements set forth in the FSAR and SRP.

3.1.2 Historical QA Program

TU Electric - General Assessment

During the CPRT evaluation of the historical TU Electric QA program for compliance with Criterion I requirements, the determinations listed

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certifications up to date and documented; however, as described below, there were specific problems in the area of inspector qualification and certification.

- Most inspection procedures were adequate, in that they appropriately identified characteristics and activities to be inspected, inspection methods, individuals or groups responsible for performance of inspections, acceptance and rejection criteria, required documentation, personnel and methods for recording inspection data, and the necessary measuring and test equipment, including accuracy requirements. However, as described below, there were deficiencies in some inspection procedures.

- In general, procedures adequately identified mandatory hold points; however, one CPRT finding (E-I.a.2-01) related to hold points for inspection of cable butt splices was issued. Evaluations of hold points in other areas revealed that hold points had been properly identified and implemented.

- Inspection results were generally properly documented and evaluated. Voluminous documentation exists showing that inspections were conducted, discrepancies were identified as a result of inspections, and these discrepancies were corrected and appropriate reinspections performed. However, as set forth below, there were a number of specific problems in this area.

- ISAP VII.c results demonstrate that approximately 98% of the reinspection points for TU Electric-inspected work were determined to be acceptable.

Based upon the above, CPRT concludes that the historical TU Electric QA inspection program was generally adequate. However, as described below, there were a number of specific problems in this program which required correction.

TU Electric - Specific Problems and Corrective Action

Specific problems identified in the historical TU Electric QA inspection program and the action taken to correct them and to preclude their recurrence, are described below.

- There were four CPRT findings in the electrical area (E-CABL-02, E-CABL-04, E-CATY-02, E-CDUT-03) relating to failure to follow or implement inspection procedure requirements properly. Finding E-CABL-04 concerned cable tiedowns and improperly spaced mounting holes. Further analysis indicated that five deviations occurred out of 1600 inspection points. This represents a very low (0.3%) rate of occurrence that is not indicative of excessive errors or of a generic problem. The remaining three findings (E-CABL-02,

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E-CATY-02 and E-CDUT-03) involved inspection of items to assure that electrical separation criteria had been met. These findings resulted from deferral of electrical separation criteria considerations until work was complete, which resulted in complex installations and a large number of separation discrepancies. Also, inspections for separation criteria were conducted by room or work area, rather than by system, which contributed to some discrepancies being overlooked during inspections. Based on these facts, and the fact that significant findings related to failure to follow inspection procedures were not identified in other areas, CPRT concludes that this problem was limited. As discussed in Part III of this report, appropriate corrective action has been taken for the problems in the electrical separation program.

- There were four findings (C-STEL-01, E-I.a.1-01, E-CATY-04, E-ININ-01) that had secondary or contributing root causes of failure to reinspect work after new inspection requirements for that work were specified. These items, for which backfits were not performed, are being corrected or analyzed to show that no additional work is needed. Current TU procedures require that an analysis be conducted to determine the necessity for backfit inspections on previously inspected work when new or different inspection requirements are specified. The possible hardware implications are discussed in Section 8.4 of Part III of this report.

- Prior to 1985, the TU Electric inspector qualification program did not comply with FSAR requirements. Since August 1985, the inspector qualification program, as written and implemented, has complied with those requirements. Two findings concerning inspector qualifications were identified during ISAP I.d.1. First, CPRT was unable to determine the capability of five inspectors to conduct cable installation inspections (Q-I.d.1-05) and second, finding Q-I.d.1-01 involved a suspected unqualified inspector. TU Electric has formulated corrective actions for these problems that include the re-evaluation of previously identified suspect inspectors. However, the results of ISAP I.d.1, which included reinspections of work inspected by personnel determined not to have been properly certified, demonstrate that the work inspected by these personnel had an approximately 97% rate of conformance with design requirements. Thus, the program was successful in training and certifying inspectors who were capable of adequately performing required inspections.

- There were inadequacies in TU Electric inspection procedures for certain inspection attributes. These inadequacies were determined to be secondary root causes of 24 of the CPRT findings.

C-II.c-01	E-CABL-01
C-II.c-02	E-CABL-03
C-VII.b.4-01	E-CABL-05

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regarding the inspection program, primarily related to procedures, are discussed below.

- Organizational responsibilities for inspections were adequately defined and assured that inspection personnel had appropriate independence. QC inspectors were part of the QA organization, which was independent of the construction organization. Questions raised by external sources regarding the independence of inspection personnel were not substantiated by the TRT. CPRT did not find any evidence of conflict of interest during their evaluations.

- Programs existed for qualification and certification of inspectors and in maintaining qualifications and certifications up to date and documented. ISAP I.d.1 determined that the Brown & Root inspector qualification program and its implementation were adequate, with one exception described below.

- Most Brown & Root QC inspection procedures were adequate, in that they appropriately identified characteristics and activities to be inspected, inspection methods, individuals or groups responsible for the performance of inspections, acceptance and rejection criteria, required documentation, personnel and methods for recording inspection data, and necessary measuring and test equipment including accuracy requirements. However, as described below, there were specific deficiencies in some inspection procedures.

- Procedures adequately identified mandatory hold points.

- Inspection results were generally properly documented and evaluated. Voluminous documentation exists demonstrating that inspections were performed, discrepancies were identified, and appropriate corrective actions were taken and reinspections performed.

- ISAP VII.c results demonstrate that approximately 98% of the reinspection points for Brown & Root-inspected work were determined to be acceptable upon reinspection by CPRT.

Based upon the above, CPRT concludes that the historical Brown & Root QC inspection program was generally adequate. However, as described below, there were a number of specific problems in this program which required correction.

Brown & Root - Specific Problems and Corrective Action

Specific problems were identified in the historical Brown & Root inspection program. These problems, and action taken to correct them and preclude their recurrence, are described below.

- The problem regarding failure to backfit inspection requirements (discussed with respect to TU Electric above)

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also applied to Brown & Root, although there was only one CPRT finding (M-PIWM-01), and this was attributed as a contributing cause. Possible hardware implications of this problem along with a recommendation for additional action are addressed in Section 8.4 of Part III of this report. Brown & Root's current program requires an evaluation of the need for backfit inspections when new or different specifications are provided.

- Four findings (S-VII.b.3-02, S-VII.b.3-08, S-LBSR-02, S-SBPS-01) in the pipe support area were identified for which less-than-adequate training of QC inspection personnel was determined to be a secondary root cause. The findings all involved gaps between pipes and supports. The same QC inspection procedure governed the inspections for all four findings. Possible hardware implications of these findings are evaluated in Part III of this report. Deviations associated with these findings were probably caused by less-than-adequate training regarding the importance of properly inspecting this attribute. Brown & Root has instituted additional training for pipe support inspections and is reinspecting pipe supports for this and other attributes. These findings, all related to the same procedure and inspection requirement, are together considered to be an isolated case of inadequate QC inspector training.

- An additional 11 findings that were attributed to the failure to conduct inspections after rework were identified in the ASME support area. These findings are:

S-VII.b.3-03	S-LBSN-03
S-VII.b.3-04	S-LBSN-04
S-VII.b.3-05	S-LBSR-05
S-VII.b.3-06	S-LBSR-06
S-VII.b.3-07	S-SBPS-03
S-LBSN-01	

Work on the supports had been completed by Brown & Root and they had been turned over to TU Electric. TU Electric Operations conducted tests that resulted in adjustments being made to the supports. No QC inspections were conducted after these adjustments. The findings, involving misaligned and bent struts, loose nuts, and broken and missing cotter pins, were likely a result of these adjustments and remained undetected because no inspections were conducted. This problem is not attributable to weaknesses in the Brown & Root inspection program. TU Electric has taken corrective action that includes adding the requirement to conduct inspections after rework. In addition, ASME supports are being reinspected to identify and correct problems remaining in the hardware.

- A finding, Q-I.d.1-01, from ISAP I.d.1 involved concerns regarding proper resolution of problems involving inspectors

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- Test results are documented, evaluated, and acceptability determined by appropriate management or the Joint Test Group as specified in applicable procedures.

Based upon the above, CPRT concludes that the current TU Electric and Brown & Root test control programs under Criterion XI adequately address the applicable program elements set forth in the FSAR and SRP.

3.11.2 Historical QA Test Control Program

TU Electric

The historical TU Electric test control program exhibited the characteristics described in subsection 3.11.1 above. The prerequisite and preoperational test program was evaluated under the CPRT Testing ISAPs and the results are reported in Part V of this report. A review of the ISAP VII.c results indicated that construction testing attributes were satisfactory in the areas of TU Electric responsibility. Based on these evaluations, the CPRT concludes that the historic TU Electric testing program under Criterion XI adequately addressed the applicable program elements set forth in the FSAR and SRP.

Brown & Root

The historical Brown & Root testing program also exhibited the characteristics described in subsection 3.11.1 above. A review of ISAP VII.c results indicated that applicable construction proof testing activities were performed and documented. Based on the above, CPRT concludes that the historic Brown & Root testing program under Criterion XI adequately addressed the applicable program elements set forth in the FSAR and SRP.

Bahnson Service Company

Bahnson was responsible for performance of pressure testing of HVAC ducts and plenums. Test procedures were adequate, but it was determined that Bahnson failed to repeat tests after modifications to the duct systems. Bahnson has been terminated from further work at CPSES, and TU Electric has initiated a program to assess and correct inadequacies in completed Bahnson work.

Chicago Bridge & Iron

Chicago Bridge & Iron was responsible for performance of leak testing of field-fabricated tanks. The results of ISAP VII.c demonstrated that this activity was completed in a satisfactory manner. Therefore Chicago Bridge and Iron met the requirements of Criterion XI.

R.W. Hunt, Mason-Johnston, Freese and Nichols

The scope of work for Freese and Nichols did not include activities subject to the requirements of Criterion XI. Review of ISAP VII.c results indicated that R. W. Hunt had satisfactorily conducted concrete strength testing and that Mason-Johnston test records for fill and

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backfill were adequate. Based on these results it is concluded that R. W. Hunt and Mason-Johnston complied with Criterion XI requirements.

3.11.3 Conclusion

Based on its evaluation of the current and historical test control program, CPRT concludes that the historical and current programs (except for Bahnson) are adequate under 10CFR50, Appendix B, Criterion XI. Bahnson has been terminated and its work is being reinspected.

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3.12 Evaluation of QA Program under 10CFR50, Criterion XII, Control of Measuring and Test Equipment

Criterion XII of 10CFR50. Appendix B, contains the following requirements:

"Measures shall be established to assure that tools, gages, instruments, and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits."

The CPRT evaluated the current and historical TU Electric, Brown & Root, and major subcontractors' QA programs for compliance with the applicable requirements of Criterion XII as described in Section 17.1.12 of the FSAR and Section 17.1.II.12 of the SRP. The results of ISAP VII.c provided information relating to measuring and test equipment (M&TE), such as torque wrenches, from which portions of the Criterion could be evaluated. Additionally, CPRT has conducted reviews of QA manuals and procedures relating to control of M&TE, a review of the results of audits and surveillances, and a review of calibration records.

3.12.1 Current QA Program for Control of Measuring and Test Equipment

CPRT evaluated the current TU Electric and Brown & Root QA programs for control of M&TE. This evaluation included reviews of current TU Electric and Brown & Root procedures, review of recent audits and surveillances, and review of current calibration records. During the construction phase, TU Electric utilizes Brown & Root calibrated M&TE to conduct activities where calibrated M&TE is required. Therefore not all elements of this Criterion are directly applicable to TU Electric. It was determined that the TU Electric program adequately addressed the interface with Brown & Root. The determinations listed below were made by the CPRT:

- Effective calibration control programs have been implemented by TU Electric and Brown & Root that describe the type of equipment to be controlled.

- Responsibilities of participating organizations, including QA, are described in applicable TU Electric and Brown & Root procedures for the establishing, implementing, and assuring the effectiveness of the calibration program.

- Brown & Root M&TE is identified, is traceable to the calibration test data, and is labeled, tagged, or specifically controlled to indicate the next calibration due date.

- Procedures are established by Brown & Root that describe calibration frequencies and techniques, and describe the maintenance and control of instruments, tools, gages, fixtures, reference and transfer standards, and nondestructive test equipment that is used in the measurement, inspection, and monitoring of structures, systems, and components. These procedures, which are reviewed and approved in accordance with

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applicable requirements, describe the organizations responsible for performing these functions.

- Brown & Root M&TE is calibrated at intervals that are based on the required accuracy, purpose, degree of usage, stability characteristics, and other conditions that may affect the measurement. When possible, the calibration standards have an accuracy of at least four times the required accuracy of the equipment being calibrated. When not possible, they have an accuracy that assures that the equipment being calibrated will be within required tolerances. In the latter case, the basis of acceptance is documented.

- Brown & Root calibrating standards have greater accuracy than the standards being calibrated except in those cases where it is documented that calibrating standards with the same accuracy are adequate for the specific requirements.

- Brown & Root reference and transfer standards are traceable to nationally recognized standards.

- When an item of M&TE is found to be out of calibration, TU Electric and Brown & Root procedures require that actions be taken, including the repeating of inspections or tests when necessary, to validate previous inspections or tests performed with that equipment since the previous calibration date.

Based upon the above, CPRT concludes that the current TU Electric and Brown & Root QA programs for control of M&TE under Criterion XII adequately address the applicable program elements set forth in the FSAR and SRP.

3.12.2 Historical QA Program for Control of Measuring and Test Equipment

TU Electric

The historical TU Electric program for control of M&TE also exhibited the applicable characteristics described in subsection 3.12.1 above. CPRT review of historical TU Electric procedures confirmed that they adequately addressed the interface with Brown & Root for use of Brown & Root M&TE and that they adequately addressed applicable Criterion elements. Review of audit and surveillance reports covering applicable elements of calibration activities from 1975 through mid-1986 did not identify any major problems as having occurred. Based upon the above, CPRT concludes that the TU Electric historical program for control of M&TE was adequate under Criterion XII.

Brown & Root

The historical Brown & Root program for control of M&TE also exhibited the applicable characteristics described in subsection 3.12.1 above.

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Brown & Root assumed responsibility for the calibration program from their subcontractor, R.W. Hunt, in July 1978. A review of procedures by CPRT indicated that the written Brown & Root program adequately addressed Criterion XII requirements. A review of TU Electric audits and surveillances of Brown & Root calibration activities conducted between 1975 and 1986 was performed by CPRT, and it was determined that, although specific problems were identified from time to time, appropriate corrective action was taken. ISAP VII.c results provided evidence that M&TE was labeled with identification numbers and calibration due dates. A CPRT review of calibration records provided evidence that M&TE was calibrated at specified intervals to required levels of accuracy, that calibration standards had adequate accuracy levels and were traceable to the National Bureau of Standards (NBS), and that inspection and test results were evaluated when damaged or out-of-calibration M&TE was identified. Based upon the above, CPRT concludes that the historical Brown & Root program for control of M&TE under Criterion XII adequately addressed the applicable program elements set forth in the FSAR and SRP.

R.W. Hunt

R.W. Hunt, as a Brown & Root subcontractor, operated a field calibration laboratory from 1975 until July 1978, when Brown & Root assumed calibration responsibility. The CPRT reviewed the R.W. Hunt QA manual, selected calibration procedures, calibration records, and results of TU Electric surveillances and determined that the R.W. Hunt program for control of M&TE exhibited the characteristics described in subsection 3.12.1 above. Based upon the above, CPRT concludes that the R.W. Hunt program for control of M&TE under Criterion XII adequately addressed the applicable program elements set forth in the FSAR and SRP.

Mason-Johnston

Mason-Johnston was responsible for calibrating their own M&TE during their activities on site from 1974 through 1977. The CPRT reviewed the Mason-Johnston corporate QA manual, calibration procedures, Measuring and Testing Calibration Manual, and results of surveillances performed by TU Electric. No calibration records were on site for review, and although test reports included identification of M&TE, they did not include calibration status. Although the procedures required that calibration standards be traceable to the NBS, verification could not be obtained from Mason-Johnston records or surveillance reports. Recorded TU Electric audits and surveillances over the Mason-Johnston activities were limited. There was evidence that minor problems had been identified and satisfactorily corrected.

As a means of obtaining further information concerning the calibration program, an in-depth interview was conducted with the Vice-President of Mason-Johnston. Subjects discussed included their calibration services vendor, traceability of calibration standards to the NBS, and evaluation of out-of-calibration M&TE. Based on this interview, outstanding questions addressing the above-mentioned subjects were satisfactorily resolved. Based upon the above, CPRT concludes that the Mason-Johnston program for control of M&TE under Criterion XII adequately addressed the applicable program elements set forth in the FSAR and SRP.

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Chicago Bridge & Iron

Chicago Bridge & Iron implemented a calibration program that included pressure gages, dial thermometers, NDE equipment, and ammeters for checking welding equipment. The CPRT reviewed the CB&I QA Manual, applicable procedures, and the results of one audit performed by TU Electric. The audit report indicated that CB&I calibration-related activities were satisfactory. No M&TE records were available for review on site, but test reports identified pressure gages that were utilized and their calibration due dates.

As a means of obtaining additional information, an in-depth interview was conducted with the CB&I QA supervisor. Subjects addressed included calibration frequency, traceability of calibration standards to the NBS, and evaluations of out-of-calibration M&TE. Based on this interview, outstanding questions addressing the above-mentioned subjects were satisfactorily resolved. Based upon the above, CPRT concludes that the Chicago Bridge & Iron program for control of M&TE under Criterion XII adequately addressed the applicable program elements set forth in the FSAR and SRP.

Bahnson Service Company

Bahnson utilized the services of the Brown & Root calibration facility for M&TE such as manometers, barometers, and temperature measuring devices. In addition, they utilized Brown & Root calibrated devices such as torque wrenches and dial thermometers. The CPRT reviewed Bahnson procedures related to calibration activities as well as TU Electric audit reports. CPRT identified one improperly closed audit finding involving an interface problem between Brown & Root and Bahnson, that in turn resulted in a failure to reevaluate items when M&TE was found to be out of calibration. Bahnson has been terminated and an extensive reevaluation of the completed Bahnson work is being conducted by TU Electric. This corrective action program will resolve CPRT concerns regarding the improperly closed audit finding as well as other problems identified in hardware installed by Bahnson.

Freese and Nichols

The scope of this subcontractor's work did not require a calibration program, therefore Criterion XII is not applicable to its work.

3.12.3 Conclusion

Based on its evaluation of the current and historical program for control of measuring and test equipment at CPSES, CPRT concludes that current and historical QA programs for control of measuring and test equipment were adequate under 10CFR50, Appendix B, Criterion XII.

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3.14 Evaluation of QA Program under 10CFR50, Criterion XIV, Inspection, Test, and Operating Status

Criterion XIV of 10CFR50, Appendix B, contains the following requirements:

"Measures shall be established to indicate, by the use of markings such as stamps, tags, labels, routing cards, or other suitable means, the status of inspections and tests performed upon individual items of the nuclear power plant or fuel reprocessing plant. These measures shall provide for the identification of items which have satisfactorily passed required inspections and tests, where necessary to preclude inadvertent bypassing of such inspections and tests. Measures shall also be established for indicating the operating status of structures, systems, and components of the nuclear power plant or fuel reprocessing plant, such as by tagging valves and switches, to prevent inadvertent operation."

The CPRT evaluated the current and historical TU Electric, Brown & Root, and major subcontractors' QA programs for compliance with the applicable requirements of Criterion XIV as described in Section 17.1.14 of the FSAR and Section 17.1.II.14 of the SRP. The primary sources of information utilized for the evaluation were the results of ISAP VII.c and an evaluation by CPRT of the applicable current and historical TU Electric and Brown & Root program documents and procedures.

3.14.1 Current QA Program for Inspection, Test, and Operating Status

CPRT evaluated the current TU Electric and Brown & Root programs addressing inspection, test, and operating status. The determinations listed below were made for each program.

- The CPSES QA Plan, TU Electric Startup QA Plan, and TU Electric and Brown & Root implementing procedures describe the methods to provide the inspection, test, and operating status of structures, systems, and components throughout fabrication, installation, and test, including temporary modifications, and to control the application and removal of these status indicators, which include tags, labels, markings, stamps, etc.

- Construction and Startup procedures, as well as procedures governing the preparation and use of travelers, provide controls for altering the sequence of required tests, inspections, or other operations important to safety. Procedure revisions are controlled as required.

- Construction, inspection and Startup procedures require that the status of nonconforming, inoperative, or malfunctioning items be documented and identified to prevent inadvertent use. The applicable personnel responsible for this function (e.g., QC, System Test Engineer Group Leader, NCR Group Supervisor) are identified.

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- System completeness and acceptance prior to fuel load are determined by records review in accordance with the records management program, and visual examination by walkdowns.

- Turnover to TU Electric Operations is accomplished after completion of signoffs by TU Electric Startup; completion of prerequisite and preoperational testing; assurance of control of outstanding deficiencies through use of the Master Data Base; and review of outstanding deficiencies to ensure there is no adverse impact on safety, plant operations, maintainability, and licensing.

Based on the above, CPRT concludes that the current TU Electric and Brown & Root programs for inspection, test, and operating status under Criterion XIV adequately address the applicable program elements set forth in the FSAR and SRP.

3.14.2 Historical QA Program for Inspection, Test and Operating Status

TU Electric

The historical TU Electric program and procedures for inspection, test, and operating status also exhibited the characteristics described in subsection 3.14.1 above. Implementation of these requirements was evidenced by the results of CPRT activities, including ISAPs VII.c and III.c, wherein it was determined that status indicators such as NCR tags, receipt inspection tags, equipment status, and safety tags had been utilized and controlled as required. There was also evidence that activities pertaining to turnover from B&R to TU Electric occurred such as walkdowns prior to, during , and following turnover; review of the master data base to assure control of outstanding deficiencies; and review of outstanding deficiencies to ensure there is no adverse impact on safety, plant operations, maintainability, or licensing. Testing activities and sequencing were properly controlled by procedures. No findings were identified concerning TU Electric activities pertaining to inspection, test, and operating status. Based on the above, CPRT concludes that the historical TU Electric program for inspection, test, and operating status under Criterion XIV adequately addressed the applicable program elements set forth in the FSAR and SRP.

Brown & Root

The historical Brown & Root program and procedures for inspection, test, and operating status also exhibited the characteristics described in subsection 3.14.1 above. Implementation of these requirements was evidenced primarily by the results of ISAP VII.c, wherein it was determined that status indicators such as NCR tags, receipt inspection tags, mandatory hold points in process control documents (travelers) and completion indications for NDE examinations had been utilized as required. It was also determined that construction procedures and travelers provided the necessary controls to govern the sequence of construction activities, including construction proof testing. Brown &

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Brown & Root procedures were reviewed and were generally adequate to define the implementation of QA records activities.

- Where applicable, inspection and test records contain a description of the type of observation; the date and the results of the inspection or test; information related to conditions adverse to quality; the identification of the inspector or data recorder; evidence as to the acceptability of the results; and actions taken to resolve any discrepancies noted. Previous problems in this area have been corrected.

- The TU Electric Record Center and the Permanent Plant Records Vault meet the requirements of ANSI N45.2.9 for record storage facilities as committed to in the FSAR.

Based on the above, CPRT concludes that the current TU Electric and Brown & Root programs for quality assurance records under Criterion XVII adequately address the applicable program elements set forth in the FSAR and SRP.

3.17.2 Historical QA Program for Quality Assurance Records

TU Electric

A review of past TU Electric and outside organization audits related to QA records was conducted by the CPRT. Although some problems had been identified in these audits, the problems were adequately resolved.

The review of the CPRT results of ISAPs identified three findings (C-VII.b.4-04, C-STEL-05, and C-STEL-07) concerning QA records in two categories: 1) missing records, and 2) incomplete or missing record entries. The primary cause for these findings was determined to be inadequate inspection procedures that, in particular cases, did not provide sufficient instructions to cause records to be properly completed, rather than inadequacies in the records program. The hardware implications of this problem are discussed in Part III of this report. Except for these particular cases, records were generally found to have been prepared correctly. Because the CPRT has determined, through the results of the hardware inspections, that there is reasonable assurance that the required inspections were performed and that the installed hardware is acceptable, the missing data and/or records have been determined not to be critical. Corrective actions for the identified findings will resolve remaining concerns with the records program.

The specific findings are being resolved through the respective ISAPs listed above. The CPRT concludes that, except for the problems identified above, the historical quality assurance records program adequately addressed the applicable program elements set forth in the FSAR and SRP.

Part IV - QA PROGRAM COLLECTIVE EVALUATION (Cont'd)

Brown & Root

The historical Brown & Root program for quality assurance records also exhibited the characteristics described in subsection 3.17.1 above. However, in some cases, inadequate inspection procedures existed which led to some records not being generated or properly completed (finding M-PBFA-01). As with TU Electric, this problem is not really attributable to the records program. The hardware implications of this problem are discussed in Section 8.2 of Part III of this report. Except for these particular cases, records were generally found to have been prepared correctly. Based on the above, CPRT concludes that the historical Brown & Root program for quality assurance records was adequate under Criterion XVII.

Bahnson Service Company

The review of ISAP VII.c findings determined that more than 12 percent of required Bahnson records could not be located (finding S-HVDS-03). Bahnson has been terminated and TU ELectric is performing an extensive reevaluation of completed Bahnson work, including inspection and, where necessary, correction of noted hardware deviations.

Freese and Nichols, Mason-Johnston, R.W. Hunt, Chicago Bridge & Iron

A review of the results of ISAPs I.d.1 and VII.c determined that, although deviations were identified in some records of these contractors, sufficient records are maintained and that the records are adequate.

3.17.3 Conclusion

Based upon its evaluation of the current and historical quality assurance records programs at CPSES, CPRT concludes the following:

- Current quality assurance records programs are adequate under 10CFR50, Appendix B, Criterion XVII.

- Historical quality assurance records programs, with the exception of the Bahnson program, were adequate, but there were problems in specific areas.

- Corrective action is in process to correct the problems that caused the failure to generate and/or properly complete quality assurance records. The missing records have been determined to have no adverse effect on the installed hardware.

Part IV - QA PROGRAM COLLECTIVE EVALUATION (Cont'd)

3.18 Evaluation of QA Program under 10CFR50, Criterion XVIII, Audits

Criterion XVIII of 10CFR50, Appendix B, contains the following requirements:

"A comprehensive system of planned and periodic audits shall be carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. Audits shall be performed in accordance with the written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited. Audit results shall be documented and reviewed by management having responsibility in the area audited. Follow-up action, including reaudit of deficient areas, shall be taken where indicated."

The CPRT evaluated the current and historical TU Electric, Brown & Root, and major subcontractors' QA programs for compliance with the applicable requirements of Criterion XVIII as described in Section 17.1.18 of the FSAR and Section 17.1.II.18 of the SRP. The primary sources of information utilized for the evaluation were the results of ISAP VII.a.4, which assessed the adequacy of the historical TU Electric audit program, and the results of ISAPs VII.c and I.d.1, whose findings and root cause analyses provided information that was utilized as a measure of the effectiveness of the TU Electric and Brown & Root audit programs. CPRT's review included applicable CPSES QA program documents and procedures, as well as audit reports and other records. The current TU Electric and Brown & Root audit programs were evaluated by CPRT during collective evaluation.

3.18.1 Current QA Audit Programs

CPRT evaluated the current TU Electric and Brown & Root QA Audit Programs. It was determined for each program that:

- Procedures state that audits are required to be performed by the QA organization to provide a comprehensive independent verification and evaluation of quality-related procedures and activities and to verify and evaluate the QA programs, procedures and activities of suppliers.

- Audit plans are prepared identifying audits to be performed, their frequencies, and schedules, which are based upon the status and safety importance of the activities being performed and are initiated early enough to assure effective QA during design, procurement, manufacturing, construction, installation, inspection, and testing.

- Audits are required to include an objective evaluation of quality-related practices, procedures, instructions; activities and items; and review of documents and records to ensure that the QA programs are effective and properly implemented.

Part IV - QA PROGRAM COLLECTIVE EVALUATION (Cont'd)

- Provisions have been established requiring that audits be performed in all areas where the requirements of 10CFR50, Appendix B are applicable, including areas often neglected in the industry associated with indoctrination and training programs; interface control between TU Electric and its principal contractors; corrective action, calibration, and nonconformance control systems; FSAR commitments; and activities associated with computer codes.

- Audit results are analyzed by the QA organization, and reports indicating quality problems, the effectiveness of the QA program and the need for reaudit of deficient areas are reported to appropriate management for review and assessment.

- Audits are performed in accordance with pre-established written procedures or checklists and are conducted by trained personnel having no direct responsibilities in the areas being audited.

- The programs comply with the applicable regulatory positions in Regulatory Guide 1.144, Auditing of Quality Assurance Programs for Nuclear Power Plants, and Regulatory Guide 1.146, Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants.

The TU Electric audit program was evaluated in detail in ISAP VII.a.4. CPRT determined that the current audit program is adequate and that earlier problems have been corrected.

Based upon the above, CPRT concludes that the current TU Electric and Brown & Root audit programs under Criterion XVIII adequately address the applicable program elements set forth in the FSAR and SRP.

3.18.2 Historical QA Audit Program

TU Electric - General Assessment

With respect to the historical TU Electric QA Audit program, the determinations listed below were made.

- Audits were performed by the QA organization to provide a comprehensive independent verification and evaluation of quality-related procedures and activities and to verify and evaluate the QA programs, procedures and activities of suppliers; however, as described below, there were specific problems in the area of procedure evaluation and evaluations of suppliers.

- Audit plans were prepared identifying audits to be performed, their frequencies, and schedules; were based on the status and safety importance of the activities; and, in general, were initiated early enough to assure effective quality assurance.

Part V - COLLECTIVE EVALUATION OF TESTING AND OTHER ACTIVITIES UNDER THE JURISDICTION OF STARTUP

1.0 INTRODUCTION AND BACKGROUND

The CPSES Initial Test Program (hereinafter referred to as the CPSES test program) is conducted by the TU Electric Startup organization, which obtains jurisdiction over plant equipment at the time it is released by construction for testing.

The CPSES test program was established to conform to the requirements set forth in 10CFR50, relevant regulatory guides, and industry standards. The CPSES test program was accepted by the NRC in the Safety Evaluation Report, which stated that the program, as described in the FSAR, meets the acceptance criteria of the Standard Review Plan. Additionally, the NRC TRT presented a favorable review of the CPSES test program and its implementation in Supplement No. 7 to the CPSES Safety Evaluation Report (SSER-7).

Concerns were raised by the TRT and, separately, the Atomic Safety and Licensing Board (ASLB) regarding the implementation of various parts of the CPSES test program. CPRT investigated these concerns and reported its results in eight ISAP Results Reports. Additionally, CPRT evaluated particular findings identified in other ISAP Results Reports pertaining to equipment under the jurisdiction of the TU Electric Startup organization, as well as External Source Issues related to testing.

Part V - COLLECTIVE EVALUATION OF TESTING AND OTHER ACTIVITIES UNDER THE JURISDICTION OF STARTUP (Cont'd)

2.0 METHODOLOGY AND SOURCES OF INPUT

The CPRT collectively evaluated the relevant information in the Results Reports identified in Section 1.0 to determine if this information, as a whole, indicates a deficiency in the CPSES test program or other activities under the jurisdiction of the TU Electric Startup organization that warrants corrective action.

2.1 Testing ISAPs

As discussed above, eight ISAPs were implemented in response to concerns regarding the CPSES test program. The results of these ISAPs are summarized below.

2.1.1 ISAP III.a.1 - Hot Functional Testing (HFT)

The TRT expressed a concern over the adequacy of retests specified by the TU Electric Startup organization and approved by the TU Electric Joint Test Group (JTG) after the original test.

To evaluate this concern, the CPRT performed a review of the Startup Administrative Procedures, an evaluation of the TRT concerns, a review of the JTG's disposition of the Test Deficiency Reports issued to document its reevaluation effort, and a random sampling program that examined the implementation of the Test Deficiency Report (TDR) and the Test Procedure Deviation (TPD) processes. In particular, the CPRT performed a random sample of 95 TDRs and 60 TPDs and found that, in each case, these reports were properly dispositioned by the Joint Test Group.

Based upon the results of these investigations, the CPRT concluded there are no programmatic problems with the implementation of the TDR and TPD processes, and that there is reasonable assurance that the objectives of the Preoperational Test Program have been met, and will continue to be met.

2.1.2 ISAP III.a.2 - JTG Approval of Test Data

The TRT expressed a concern that the JTG's approval of completed hot functional test data was not obtained until after cooldown from the test. These tests are not considered complete until this approval is obtained. Approval of the deferred preoperational tests is required prior to proceeding to initial criticality. TRT could not identify any document that described a TU Electric commitment that the JTG (or a similarly qualified group) would approve results for post-fuel-load hot functional testing prior to proceeding to initial criticality. Therefore, the TRT requested such a commitment from TU Electric.

The CPRT found that such a commitment was implicit in the language of the CPSES FSAR at the time of the TRT review, and that an explicit clarification of that commitment was made subsequent to the TRT review in FSAR Amendment 54. Furthermore, in reviewing CPSES station procedures, the CPRT determined that procedures contained a requirement

Part VI - OVERALL CONCLUSIONS (Cont'd)

In addition, the areas of construction that are related to these weaknesses are being reinspected or re-evaluated and, where required, corrected. Due to the extensive corrective action taken for the specific weaknesses identified, the CPRT concludes that no additional actions are warranted when the problem areas are considered collectively.

3.0 TESTING PROGRAM COLLECTIVE EVALUATION CONCLUSIONS

Eight ISAPs were initiated by the CPRT that related to various parts of the CPSES testing program. In each case, it was determined that the CPSES testing program was adequate and was being properly implemented. Although findings related to activities under the jurisdiction of Startup were identified in other ISAPs, these findings were limited in nature and had unrelated root causes. Furthermore, corrective action was taken for each of the findings, including action to prevent recurrence. Therefore, the CPRT concludes that the CPSES testing program and other activities under the jurisdiction of Startup are generally adequate and that no additional corrective action is necessary beyond that which has been taken for the individual findings identified by the CPRT.

4.0 OVERALL COLLECTIVE EVALUATION CONCLUSIONS

Upon completion of all the corrective actions recommended by the CPRT, including those resulting from collective evaluation, there will be reasonable assurance that the systems, structures and components of CPSES meet the significant, safety-related requirements of the October 1985 design (or later applicable design).

COLLECTIVE EVALUATION REPORT

APPENDIX A (Cont'd)

List of Acronyms and Abbreviations

JTG	Joint Test Group
M & TE	Measuring & Test Equipment
N/A	Not Applicable
NCR	Nonconformance Report
NDE	Non Destructive Examination
NIS	Nuclear Instrument System
NRC	Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
PCHVP	Post Construction Hardware Validation Program
QA/QC	Quality Assurance/Quality Control
QOC	Quality of Construction
SAR	Safety Analysis Report
SBM	Separation Barrier Material
SRP	Standard Review Plan
SRT	Senior Review Team
SSER	Supplemental Safety Evaluation Report
STE	System Test Engineer
SWEC	Stone & Webster Engineering Corporation
TAP	Technical Audit Program
TDR	Test Deficiency Report
TDDR	TU Electric's Design Deficiency Report
TRT	Technical Review Team
TU	Texas Utilities
UT	Unclassified Trend

COLLECTIVE EVALUATION REPORT

APPENDIX C (Cont'd)

CPRT Finding List (Cont'd)

Finding Number	ISAP or Construction Work Category	Finding Description	Finding Classification
M-PIWM-01	Pipe Welds and Materials	Radial weld shrinkage	Special Case
M-PIWM-02	Pipe Welds and Materials	Base material reduction	Unclassified Trend
M-DUPL-01	HVAC Ducts and Plenums	Hardware installed without approved design details	Unclassified Trend
M-MEIN-01	Mechanical Equipment Installation	Configuration - broken bolts	Construction Deficiency
M-MEIN-02	Mechanical Equipment Installation	Configuration - manway covers with insufficiently tightened bolted connections	Special Case
M-VI.a-01	ISAP VI.a	Debris in critical spaces	Unclassified Deviation
M-VI.b-01	ISAP VI.b	Lack of design calculations and other design problems associated with the polar crane support system components (7 unclassified deviations)	Unclassified Deviation
C-CONC-01	Concrete Placement	Unsound mortar	Unclassified Trend
C-STEL-01	Structural Steel	Lack of bolt jam nuts	Construction Deficiency
C-STEL-02	Structural Steel	Caps between connected plies - seismic wall angles	Construction Deficiency
C-STEL-03	Structural Steel	Missing welds	Adverse Trend
C-STEL-04	Structural Steel	Substitution of smaller member	Unclassified Trend
C-STEL-05	Structural Steel	Missing documentation	Unclassified Trend

COLLECTIVE EVALUATION REPORT

APPENDIX C (Cont'd)

CPRT Finding List (Cont'd)

Finding Number	ISAP or Construction Work Category	Finding Description	Finding Classification
C-STEL-06	Structural Steel	Substitution of smaller diameter structural bolts	Special Case
C-STEL-07	Structural Steel	Undersize welds	Unclassified Trend
C-STEL-08	Structural Steel	Bolt tightening - gaps between connected plies (2 CDs - rotating platform and sump structure)	Construction Deficiency
C-LINR-01	Containment Liners and Stainless Steel Tank Liners	Presence of rust	Unclassified Trend
C-II.c-01	ISAP II.c	Debris in seismic air gap	Unclassified Deviation
C-II.c-02	ISAP II.c	Less-than-design air gap width	Unclassified Deviation
C-II.c-03	ISAP II.c	Technically incorrect disposition of NCR C-83-01067	Unclassified Deviation
C-VII.b.4-01	ISAP VII.b.4	Spacing violations	Unclassified Trend
C-VII.b.4-02	ISAP VII.b.4	Bottomed-out nuts and unacceptable bolt torque on rotating equipment	Unclassified Trend
C-VII.b.4-03	ISAP VII.b.4	Bottomed-out nuts	Unclassified Trend
C-VII.b.4-04	ISAP VII.b.4	Unacceptable bolt torque (including cases of missing or inconclusive documentation)	Unclassified Trend
S-LBSR-01	Large-Bore Rigid Pipe Supports	Incorrect components: bolt size smaller than hole	Construction Deficiency

COLLECTIVE EVALUATION REPORT

APPENDIX D

External Source Issues Summary

1.0 INTRODUCTION

The external source issues (ESI) matrix for construction contains issues and concerns identified by NRC-TRT, NRC-Region IV, NRC-ASLB, NRC Special Teams, CYGNA and independent consultants that made construction assessments at CPSES. Worker allegations, including those sponsored by CASE and GAP, are contained within the NRC-TRT reports.

The majority of ESIs are comprised of the worker allegations contained in the NRC-TRT reports, SSERs 7, 8, 10 and 11. The TRT investigations are described and TRT conclusions are stated in these reports. These issues were substantiated or not substantiated by the TRT. Each substantiated issue was evaluated for safety-significance by the TRT. In some cases the TRT evaluated unsubstantiated issues for safety-significance as if they were true. Issues that were not potentially safety-significant were closed by TRT. The majority of unsubstantiated issues also provided a TRT justification for closure.

Appendix P in SSER-11 contains a report of NRC-TRT considerations of the generic QA/QC aspects of all issues. The overall assessments of NRC-TRT made in Appendix P are included in the ESI matrix. The basic worker allegations discussed in Appendix P are also included in other sections of the SSERs. In many cases, NRC-TRT closed the specific allegation but deferred consideration of generic implications, which was considered in Appendix P. If Appendix P indicated that a specific issue did not have generic implications, the issue was treated as closed by CPRT.

The resolution of open NRC-TRT issues that were within the CPRT scope of investigation are reported in the attached portion of the matrix. Issues that were closed by the NRC-TRT were also included in the ESI matrix and considered in the trend analysis and overall conclusions reached by the CPRT. This portion of the matrix will be included in the CPRT files.

The ESIs from sources other than NRC-TRT were also considered in the trend analysis and the overall conclusions reached by CPRT. These portions of the ESI matrix for construction will also be included in the files.

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EXTERNAL SOURCE ISSUES MATRIX

ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
SSER: 07 ALLEG: AQE-12 ITEM: 07.01	FAILURE TO FOLLOW PROCEDURES, SPECIFICATIONS AND DWGS. (AQE-25, AQE-40, AND PART OF AQE-12). REF. PG. J-49.	TRT --- BASED ON REVIEWS OF PERTINENT DOCUMENTATION, EXAMINATION OF NCRs, AND INFORMATION OBTAINED FROM INTERVIEWS, TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ALLEGATIONS. THE FINAL ACCEPTABILITY OF THIS ITEM BY TRT WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE PROGRAMMATIC REVIEW OF QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND QA/QC CATEGORY 6, QC INSPECTION.	CPRT ---- CPRT RESOLUTION OF CONCERNS RELATED TO NONCONFORMANCE REPORTS IS SUMMARIZED UNDER ITEM 11.84E, TRT-P5. CPRT RESOLUTION OF CONCERNS RELATED TO QC INSPECTION IS SUMMARIZED UNDER ITEM 11.84F, TRT-P6.
SSER: 07 ALLEG: AQE-12 ITEM: 07.01A	CABLE TERMINATIONS NOT IN CONFORMANCE WITH DRAWINGS WERE ACCEPTED BY QUALITY CONTROL (QC) PERSONNEL. REF. PG J-27	TRT --- TRT INSPECTED 1600 TERMINATIONS AND FOUND SIX CABLES, FIVE OF WHICH WERE SAFETY-RELATED, NOT TERMINATED IN ACCORDANCE WITH CURRENT DRAWINGS. TRT CONCLUDED THAT CONCERNS EXISTED ABOUT SAFETY RELATED TERMINATIONS NOT BEING IN CONFORMANCE WITH CURRENT DRAWINGS. ACTION REQUIRED --- TU ELECTRIC SHALL REINSPECT ALL SAFETY-RELATED AND ASSOCIATED TERMINATIONS IN THE CONTROL ROOM AND IN THE TERMINATION CABINETS IN THE CABLE SPREADING ROOM TO VERIFY THAT THEIR LOCATIONS ARE IN ACCORDANCE WITH ALL CURRENT DESIGN DOCUMENTS. SHOULD THE RESULTS OF THIS REINSPECTION REVEAL AN UNACCEPTABLE LEVEL OF NONCONFORMANCE TO DESIGN DOCUMENTS, THE SCOPE OF THIS REINSPECTION EFFORT SHALL BE EXPANDED TO INCLUDE ALL SAFETY-RELATED AND ASSOCIATED TERMINATIONS AT COMANCHE PEAK STEAM ELECTRIC STATION (CPSES). TU ELECTRIC SHALL EVALUATE THE ADEQUACY OF THE QC INSPECTOR PROGRAM AS RELATED TO THE DEFICIENCIES IDENTIFIED TO ESTABLISH ROOT CAUSES AND APPROPRIATE CORRECTIVE ACTIONS. THESE ACTIONS SHALL BE INTEGRATED WITH OTHER ACTIONS ADDRESSED UNDER QA/QC CATEGORY 8, AS BUILT.	CPRT ---- ISAP I.A.4 WAS IMPLEMENTED TO CHECK THAT SAFETY-RELATED AND ASSOCIATED CABLE TERMINATIONS IN THE CONTROL ROOM AND CABLE SPREADING ROOM WERE IN ACCORDANCE WITH DESIGN DOCUMENTS. CPRT INSPECTED 356 RANDOMLY SELECTED SAFE-SHUTDOWN TERMINATIONS UNDER ISAP I.A.4 AND FOUND ALL TO BE FUNCTIONALLY IN ACCORDANCE WITH APPLICABLE DESIGN DOCUMENTS. CPRT REVIEWED THE SIX CABLES FOUND BY TRT AS NOT TERMINATED IN ACCORDANCE WITH CURRENT DRAWINGS. NONE OF THE SIX WAS FOUND TO BE IN FUNCTIONAL DISAGREEMENT WITH DESIGN REQUIREMENTS. CPRT ALSO ASSURED THE FUNCTIONAL CORRECTNESS OF AN ADDITIONAL 500 TO 600 TERMINATIONS IN CARRYING OUT BUTT SPLICE INSPECTIONS UNDER ISAP I.A.2. (ISAP I.A.4 RESULTS REPORT PG 15) CPRT UNDER ISAP VII.C, APPENDIX 3, REINSPECTED A SAMPLE OF SAFETY-RELATED CABLE TERMINATIONS TO VERIFY CORRECT INSTALLATION. IN 645 TERMINATIONS, NO DEVIATIONS WERE REPORTED WHERE TERMINATIONS WERE NOT IN ACCORDANCE WITH DRAWINGS. HOWEVER, ONE OUT-OF-SCOPE OBSERVATION RELATED TO TERMINATIONS WAS IDENTIFIED, THAT INVOLVED A CABLE NOT TERMINATED ON CORRECT TERMINAL BLOCK POINTS. CPRT EVALUATED THIS PROBLEM TO BE A CONSTRUCTION DEFICIENCY. THE ROOT CAUSE WAS DETERMINED TO BE A DESIGN CHANGE THAT HAD NOT BEEN IMPLEMENTED, THEREBY CAUSING THE DIFFERENCE BETWEEN THE DRAWINGS AND ACTUAL INSTALLATION. (ISAP VII.C RESULTS REPORT, APPENDIX 3, PG 19-22). THE CPRT RESOLUTION OF ISSUES RELATED TO THE QC INSPECTOR PROGRAM IS SUMMARIZED IN ITEM 11.83D. THE CPRT RESOLUTION OF ISSUES

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EXTERNAL SOURCE ISSUES MATRIX

ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
			RELATED TO AS BUILTS IS SUMMARIZED IN ITEM 11.83L. THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 07 ALLEG: AQE-12 ITEM: 07.01B	SOME ELECTRICAL TERMINATIONS WERE ACCEPTED BY INADEQUATELY QUALIFIED INSPECTORS. REF. PG J-55	SEE ITEM 7.07A, AQE-08.	
SSER: 07 ALLEG: AE-15 ITEM: 07.02A	INSTALLED SAFETY RELATED CABLE AND CONDUITS IN THE REACTOR CONTROL PANEL IN THE CONTROL ROOM DID NOT CONFORM TO SEPARATION CRITERIA. REF. PG J-37.	TRT --- TRT CONCLUDED THAT THE INSTALLATIONS REVIEWED, IN GENERAL, MET ESTABLISHED SEPARATION REQUIREMENTS, EXCEPT FOR CERTAIN SAFETY-RELATED CABLES AND FLEXIBLE CONDUITS INSIDE CONTROL ROOM PANELS WHICH DID NOT MEET MINIMUM SEPARATION REQUIREMENTS. TRT FOUND NO EVIDENCE THAT THE LACK OF SEPARATION WAS JUSTIFIED BY ANALYSIS. THE LACK OF ANALYSIS TO SUBSTANTIATE THE ADEQUACY OF SEPARATION MAY BE AN INDICATION OF WEAKNESS IN THE QA/QC PROGRAM CONCERNING DESIGN CONTROL. THIS AREA IS ADDRESSED IN QA/QC CATEGORY 1, DESIGN PROCESS. ACTIONS REQUIRED --------------- TU ELECTRIC SHALL: 1. EVALUATE THE ADEQUACY OF THE QA/QC PROGRAM AS RELATED TO THE DEFICIENCIES IDENTIFIED ABOVE TO ESTABLISH ROOT CAUSES AND APPROPRIATE CORRECTIVE ACTIONS. THESE ACTIONS SHALL BE INTEGRATED WITH OTHER ACTIONS ADDRESSED UNDER ELECTRICAL AND INSTRUMENTATION CATEGORY 6, ELECTRICAL QC INSPECTOR TRAINING AND QUALIFICATIONS, QA/QC CATEGORY 8, AS BUILT, AND QA/QC CATEGORY I, DESIGN PROCESS. 2. TAKE CORRECTIVE MEASURES TO PROVIDE A BARRIER IN AUXILIARY FEEDWATER PANEL CP1-EC-PRCB-09 SEPARATING REDUNDANT FLOW AND PRESSURE INSTRUMENTS. 3. TAKE CORRECTIVE ACTION TO ENSURE THAT THE REQUIRED MINIMUM SEPARATION OF THE REDUNDANT FIELD WIRING IDENTIFIED INSIDE PANEL CP1-EC-PRCB-03 IS MAINTAINED EITHER BY DISTANCE OR BY AN ACCEPTABLE BARRIER.	CPRT ---- CPRT, UNDER ISAP I.B.1, DETERMINED THE MINIMUM ACCEPTABLE SEPARATION DISTANCE BETWEEN CABLES OF REDUNDANT TRAINS ENCLOSED BY SERVICAIR FLEX AND DETERMINED IF SITUATIONS EXISTED WHERE THE SEPARATION CRITERIA ESTABLISHED BY TU ELECTRIC FOR CPSES WAS VIOLATED. INSPECTIONS OF CONTROL ROOM CONTROL BOARDS, VERTICAL VENTILATION PANELS, AND OTHER MULTI-TRAIN PANELS DID NOT IDENTIFY ANY VIOLATIONS. (ISAP I.B.1 RESULTS REPORT PG 29 AND 30). CPRT, UNDER ISAP I.B.2, DETERMINED THE MINIMUM ACCEPTABLE SEPARATION DISTANCE BETWEEN A CABLE ENCLOSED BY SERVICAIR FLEX AND AN EXPOSED REDUNDANT CABLE AND IDENTIFIED SITUATIONS IN PANELS WHERE THE SEPARATION CRITERIA ESTABLISHED BY TU ELECTRIC FOR CPSES WAS VIOLATED. TWENTY-FIVE VIOLATIONS WERE IDENTIFIED. THESE VIOLATIONS WERE CATEGORIZED AS UNCLASSIFIED DEVIATIONS REQUIRING A ROOT CAUSE, GENERIC IMPLICATION, AND CORRECTIVE ACTION DETERMINATION. THE VIOLATIONS ARE INCLUDED IN THE DISCUSSION UNDER ISAP I.B.4 BELOW. (ISAP I.B.2 RESULTS REPORT PG 32 AND 33). CPRT, UNDER ISAP I.B.4, EVALUATED ALL IDENTIFIED SEPARATION VIOLATIONS IN CONTROL BOARDS AND PANELS INCLUDING THOSE IDENTIFIED IN ISAP I.B.2. THE NUMBER OF VIOLATIONS IN CONTROL ROOM CONTROL BOARDS AND VERTICAL VENTILATION PANELS WAS 142, AND THE NUMBER IN OTHER MULTI-TRAIN PANELS WAS 61. THESE VIOLATIONS INCLUDED SERVICAIR TO CABLE, CABLE TO DEVICE, CABLE TO CABLE, CABLE TO CONDUIT, CABLE TO BARRIER, CABLE TO WIREWAY, AND SERVICAIR TO CONDUIT SEPARATIONS. THE VIOLATIONS WERE CATEGORIZED AS UNCLASSIFIED DEVIATIONS. THE ROOT CAUSES WERE ATTRIBUTED TO INADEQUATE CRAFT, QC, STARTUP, AND OPERATIONS PROCEDURES; LACK OF EFFECTIVE CRAFT AND QC TRAINING; AND INSUFFICIENT SUPERVISORY EMPHASIS. GENERIC IMPLICATIONS EXTENDED THE CONCERN ABOUT SEPARATION VIOLATIONS TO ALL MULTI-TRAIN PANELS AND RAISED THE POSSIBILITY THAT ELECTRICAL SEPARATION PROBLEMS MIGHT EXIST IN

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		4. REINSPECT ALL PANELS AT COMANCHE PEAK STEAM ELECTRIC STATION, IN ADDITION TO THOSE IN THE MAIN CONTROL ROOM FOR UNITS 1 AND 2, THAT CONTAIN (1) REDUNDANT SAFETY-RELATED CONDUITS, OR (2) SAFETY-AND NONSAFETY-RELATED CONDUITS. TU ELECTRIC SHALL EITHER CORRECT EACH VIOLATION OF THE SEPARATION CRITERIA OR DEMONSTRATE BY ANALYSIS THE ACCEPTABILITY OF THE CONDUIT AS A BARRIER FOR EACH CASE WHERE THE MINIMUM SEPARATION IS NOT MET. THIS ANALYSIS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN SECTION 5.6.2 OF IEEE STANDARD 384-1974. FURTHERMORE, IN THE EVENT THAT THE ACCEPTABILITY OF THE CONDUIT AS A BARRIER CANNOT BE DEMONSTRATED, TU ELECTRIC SHALL CORRECT THE ENGINEERING DRAWINGS AND RELATED DOCUMENTS TO INDICATE THE REVISED MINIMUM SEPARATION OF CONDUITS INSIDE THE PANEL FOR EACH CASE. 5. EITHER CORRECT EACH OF THE VIOLATIONS OF SEPARATION CRITERIA CONCERNING SEPARATE CABLES AND CABLES WITHIN FLEXIBLE CONDUITS FOUND IN CONTACT WITH EACH OTHER INSIDE MAIN CONTROL ROOM PANELS OR DEMONSTRATE BY ANALYSIS THE ADEQUACY OF THE FLEXIBLE CONDUIT AS A BARRIER. TU ELECTRIC SHALL ALSO REINSPECT ALL REMAINING PANELS IN THE CONTROL ROOM AND OTHER AREAS OF THE PLANT CONTAINING SEPARATE CABLES AND CABLES WITHIN FLEXIBLE CONDUIT AND SHALL MAINTAIN SEPARATION CRITERIA OR DEMONSTRATE BY ANALYSIS THE ADEQUACY OF THE FLEXIBLE CONDUIT AS A BARRIER. THIS ANALYSIS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SECTION 5.6.2 OF IEEE STANDARD 384-1974. IN THE EVENT THAT THE ACCEPTABILITY OF THE CONDUIT AS A BARRIER CANNOT BE DEMONSTRATED, TU ELECTRIC SHALL SEPARATE CABLES AND CABLES WITHIN FLEXIBLE CONDUITS BY A MINIMUM DISTANCE OF 6 INCHES, AS REQUIRED BY SECTION 5.6.2 OF IEEE STANDARD 384. FURTHERMORE, TU ELECTRIC SHALL CORRECT ALL APPROPRIATE DRAWINGS AND DOCUMENTS TO INDICATE THE REVISED MINIMUM SEPARATION.	OTHER AREAS OF THE PLANT BEING INVESTIGATED UNDER ISAP VII.C. CORRECTIVE ACTIONS INCLUDED UPDATING PROCEDURES, INSTITUTING A SPECIAL TRAINING PROGRAM, PERFORMING BASELINE INSPECTIONS AND CONTROLLING ACCESS TO PANELS. (ISAP I.B.4 RESULTS REPORT PG 8, 10, 18, AND 19). CPRT, UNDER ISAP VII.C, REINSPECTED A SAMPLE OF CONDUIT AND CABLE TRAY. ONE OF THE ATTRIBUTES REINSPECTED FOR WAS ELECTRICAL SEPARATION. TEN SEPARATION VIOLATIONS WERE IDENTIFIED IN THE 84 CONDUIT ITEMS REINSPECTED. SIX SEPARATION VIOLATIONS WERE IDENTIFIED IN THE 98 CABLE TRAY ITEMS REINSPECTED. THESE VIOLATIONS INVOLVED CONDUIT TO CONDUIT, CONDUIT TO CABLE, CONDUIT TO CABLE TRAY, AND CABLE TRAY TO CABLE TRAY SEPARATIONS. ALTHOUGH EXCESSIVE TEMPERATURES WOULD NOT HAVE OCCURRED IN REDUNDANT CABLE FROM FAULTS WITH THESE VIOLATIONS, A LIKELIHOOD EXISTS THAT EXCESSIVE TEMPERATURES COULD OCCUR IF SIMILAR VIOLATIONS EXISTED IN THE UNINSPECTED PORTION OF CONDUIT AND CABLE TRAY. THEREFORE, THESE VIOLATIONS WERE CATEGORIZED AS ADVERSE TRENDS. GENERIC IMPLICATIONS EXTENDED THE CONCERN ABOUT SEPARATION VIOLATIONS TO THE CABLE POPULATION. HOWEVER, NO CABLE TO CABLE SEPARATION VIOLATIONS WERE IDENTIFIED OUTSIDE OF CONTROL BOARDS AND PANELS. CORRECTIVE ACTIONS INCLUDED VERIFYING THAT THE SEPARATION BETWEEN CONDUIT, CABLE TRAY, AND CABLES IS ADEQUATE AND CORRECTING AS NECESSARY. (ISAP VII.C RESULTS REPORT, APPENDIX 1, PG 9, 10, 11, 19, AND 20-22 AND APPENDIX 2, PG 16, 17, 23-26, AND 27). CPRT, THEREFORE, SUBSTANTIATED THE CONCERN. AFTER SATISFACTORY IMPLEMENTATION OF THE APPLICABLE RECOMMENDATIONS PROVIDED BY THE ISAP I.B.4, ISAP VII.C APPENDICES 1 AND 2, AND ISAP I.D.1 RESULTS REPORTS, THERE WILL BE REASONABLE ASSURANCE THAT ELECTRICAL SEPARATION MEETS DESIGN CRITERIA. (ISAP I.B.4 RESULTS REPORT PG 23, ISAP VII.C RESULTS REPORT, APPENDIX 1, PG 23, AND APPENDIX 2, PG 28). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 07 ALLEG: AE-20 ITEM: 07.02B-1	SEPARATION REQUIREMENTS IN ELEC ERECT SPEC FOR CABLE SPREAD RM WERE INCONSISTENT W/RQMTS OF REG GUIDE (RG) 1.75. INSTAL OF INDEP SAFETY-RELATED CABLE TRYS	TRT --- TRT FOUND NO EVIDENCE THAT THE EXISTING GIBBS & HILL (G&H) ANALYSIS FOR ESTABLISHING THE CRITERIA FOR A 1-INCH SEPARATION BETWEEN RIGID CONDUIT AND CABLE	CPRT ---- G&H BASED RACEWAY SEPARATION CRITERIA ON THEIR INTERPRETATION OF IEEE 384-1974 AND REGULATORY GUIDE 1.75, REVISION 1. SUPPORTING DOCUMENTATION WAS NOT SUBMITTED TO THE NRC STAFF FOR REVIEW

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	& CONDUIT BTWN SAFETY-RELATED & NON SAFETY-RELATED RACEWAY DIDNT CONFORM W/R.G. 1.75. REF PG J-37.	TRAYS, AS STATED IN CPSES ELECTRICAL ERECTION SPECIFICATION 2323-ES-100, HAD BEEN EVALUATED BY THE NRC STAFF FOR COMANCHE PEAK. THIS ANALYSIS SHOULD HAVE BEEN REFERENCED IN THE FSAR. ACTION REQUIRED --- TU ELECTRIC SHALL SUBMIT TO THE NRC THE ANALYSIS SUBSTANTIATING THE ACCEPTABILITY OF THE CRITERIA STATED IN G&H ELECTRICAL ERECTION SPECIFICATION GOVERNING THE SEPARATION BETWEEN SEPARATE CONDUITS AND CABLE TRAYS. THIS ANALYSIS SHALL BE SUPPORTED WITH THE NECESSARY DOCUMENTATION IN SUFFICIENT DETAIL TO PERFORM AN INDEPENDENT EVALUATION OF HOW THESE CRITERIA WERE ESTABLISHED BASED ON THE ANALYSIS.	BECAUSE THE CRITERIA WAS NOT CONSIDERED A DEVIATION FROM REQUIREMENTS. G&H PREPARED A REPORT COMPILING RACEWAY SEPARATION CRITERIA AND SUPPORTING ANALYSIS. CPRT, UNDER ISAP I.B.3, REVIEWED THE REPORT AND ANALYSIS AND CONCLUDED THAT THE DOCUMENTS PROVIDED ADEQUATE JUSTIFICATION FOR THE EXISTING CRITERIA. (ISAP I.B.3 RESULTS REPORT PG 6 AND 13). TU ELECTRIC SUBMITTED THE FSAR CHANGE REQUEST WITH THE ESTABLISHED CONDUIT TO CABLE TRAY SEPARATION CRITERIA TO NRC FOR EVALUATION. THAT CHANGE HAS BEEN ENTERED IN THE FSAR UNDER AMENDMENT 60. THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG: AE-20 ITEM: 07.02B-2	SEPARATION CRITERIA BETWEEN REDUNDANT CABLE TRAYS AND CONDUITS IN THE CABLE SPREADING ROOM WERE NOT CONSISTENT WITH THE REQUIREMENTS OF THE IN-PROCESS INSPECTION PROCEDURES FOR VERIFYING ELECTRICAL SEPARATION. REF. PG. J-63.	TRT --- BASED ON THE REVIEW OF PROCEDURES FOR IN-PROCESS, POST-CONSTRUCTION AND TURNOVER INSPECTIONS, TRT CONCLUDED THAT NO SIGNIFICANT CONCERNS EXISTED WITH ELECTRICAL PROCEDURES. HOWEVER, EQUIPMENT INSTALLATION PROBLEMS, AS RELATED TO NONCONFORMANCE WITH PROCEDURES, ARE BEING ADDRESSED IN THE HARDWARE-RELATED ELECTRICAL AND INSTRUMENTATION CATEGORIES. TRT, THEREFORE, CONCLUDED THAT THESE ELECTRICAL PROCEDURE-RELATED ALLEGATIONS COULD NOT BE SUBSTANTIATED. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING THE POST-CONSTRUCTION VERIFICATION PROGRAM ADDRESSED UNDER QA/QC CATEGORY 8, AS BUILT. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE OVERALL PROGRAMMATIC REVIEW ON THIS SUBJECT.	CPRT ---- SEE ITEM 11.83L.
SSER: 07 ALLEG: AQE-06 ITEM: 07.02C-1	ELECTRICAL INSPECTORS WERE DIRECTED BY A QC SUPERVISOR TO VIOLATE INSPECTION PROCEDURES.	TRT --- TRT FOUND THAT THE LACK OF SEPARATION IN THE	CPRT ---- THE CPRT RESOLUTION OF ISSUES RELATED TO ELECTRICAL AND

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	REF. PG. J-37.	INSTALLATION OF CERTAIN CABLES AND FLEXIBLE CONDUITS WAS INCONSISTENT WITH TU ELECTRIC's ENGINEERING DRAWINGS AND DOCUMENTS. ACTIONS REQUIRED --- TU ELECTRIC SHALL EVALUATE THE ADEQUACY OF THE QA/QC PROGRAM AS RELATED TO THE DEFICIENCIES IDENTIFIED ABOVE TO ESTABLISH ROOT CAUSES AND APPROPRIATE CORRECTIVE ACTIONS. THESE ACTIONS SHALL BE INTEGRATED WITH OTHER ACTIONS ADDRESSED UNDER ELECTRICAL AND INSTRUMENTATION CATEGORY 6, ELECTRICAL QC INSPECTOR TRAINING AND QUALIFICATIONS, QA/QC CATEGORY 8, AS BUILT, AND QA/QC CATEGORY I, DESIGN PROCESS.	INSTRUMENTATION CATEGORY 6, ELECTRICAL QC INSPECTOR TRAINING AND QUALIFICATION, QA/QC CATEGORY 8, AS-BUILT AND QA/QC CATEGORY 1, DESIGN PROCESS IS SUMMARIZED UNDER ITEMS 11.84C, 11.83L AND 11.84A, RESPECTIVELY.
SSER: 07 ALLEG: AQE-06 ITEM: 07.02C-2	ELECTRICAL INSPECTORS WERE DIRECTED BY A QC SUPERVISOR NOT TO FOLLOW INSPECTION PROCEDURES. REF. PG. J-63.	TRT --- BASED ON THE REVIEW OF PROCEDURES FOR IN-PROCESS, POST-CONSTRUCTION, AND TURNOVER INSPECTIONS, TRT CONCLUDED THAT NO SIGNIFICANT CONCERNS EXISTED WITH ELECTRICAL PROCEDURES. HOWEVER, EQUIPMENT INSTALLATION PROBLEMS, AS RELATED TO NON-CONFORMANCE WITH PROCEDURES, ARE BEING ADDRESSED IN THE HARDWARE-RELATED ELECTRICAL AND INSTRUMENTATION CATEGORIES. TRT, THEREFORE, CONCLUDED THAT THESE ELECTRICAL PROCEDURE-RELATED ALLEGATIONS COULD NOT BE SUBSTANTIATED. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING THE POST-CONSTRUCTION VERIFICATION PROGRAM ADDRESSED UNDER QA/QC, CATEGORY 8, AS BUILT. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE OVERALL PROGRAMMATIC REVIEW ON THIS SUBJECT.	CPRT ---- SEE ITEM 11.83L.
SSER: 07 ALLEG: AE-51 ITEM: 07.02F	A CONDUIT WAS ABOUT 3 FEET BELOW A CABLE TRAY IN THE CONTROL ROOM BUILDING, PERHAPS VIOLATING SEPARATION CRITERIA. REF. PG. J-37	TRT --- REQUIREMENTS IN CPSES SPECIFICATION 2323-ES-100 WERE ALLEGED TO BE INCONSISTENT WITH THE CRITERIA IN IEEE STANDARD 384-1974 AS AUGMENTED BY RG 1.75 PARTICULARLY REGARDING THE SEPARATION OF CABLE TRAY AND CONDUIT. TRT FOUND A REQUIREMENT IN THE SPECIFICATION THAT PERMITTED NONSAFETY-RELATED RIGID CONDUITS TO HAVE A	CPRT ---- CPRT, UNDER ISAP I.B.3, REVIEWED THE G&H REPORT THAT COMPILED RACEWAY SEPARATION CRITERIA AND SUPPORTING ANALYSES. CPRT CONCLUDED THAT THE DOCUMENTS PROVIDE ADEQUATE JUSTIFICATION FOR THE EXISTING CRITERIA. (ISAP I.B.3 RESULTS REPORT PG 6 AND 13). TU ELECTRIC SUBMITTED THE FSAR CHANGE REQUEST WITH THE ESTABLISHED

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		MINIMUM SEPARATION OF ONE INCH FROM THE TOP OF OPEN SAFETY-RELATED TRAYS. THIS REQUIREMENT APPEARED TO BE INCONSISTENT WITH IEEE STANDARD 384-1974 AND RG 1.75. TRT DETERMINED THAT NO INFORMATION WAS INCLUDED IN THE FSAR THAT SUPPORTED THE ONE INCH SEPARATION BETWEEN CABLE TRAYS AND CONDUITS. TRT DID, HOWEVER, REVIEW AN EXISTING GIBBS & HILL (G&H) ANALYSIS, INCLUDING TEST RESULTS, THAT WAS USED TO ESTABLISH THE REQUIREMENT IN SPECIFICATION 2323-ES-100 FOR THE ONE INCH SEPARATION. THE ANALYSIS CONCLUDED THAT RIGID CONDUITS CONSTITUTED AN ACCEPTABLE BARRIER BETWEEN CABLES INSIDE CONDUIT AND CABLES INSIDE LADDER OR OPEN-TYPE TRAYS. TRT FOUND NO EVIDENCE THAT THE EXISTING G&H ANALYSIS HAD BEEN EVALUATED BY THE NRC STAFF FOR COMANCHE PEAK. THE ANALYSIS SHOULD HAVE BEEN REFERENCED IN THE FSAR.	CONDUIT TO CABLE TRAY SEPARATION CRITERIA TO NRC FOR EVALUATION. THAT CHANGE HAS BEEN ENTERED IN THE FSAR UNDER AMENDMENT 60. THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG: AQE-54 ITEM: 07.02H	LADDER TYPE CABLE TRAYS SHOULD NOT QUALIFY AS BARRIERS. THEREFORE, THE 1-INCH SEPARATION CRITERIA BETWEEN LADDER-TYPE TRAYS AND CONDUITS ROUTED UNDER THE TRAYS SHOULD NOT APPLY. REF. PG. J-37.	TRT --- REQUIREMENTS IN CPSES SPECIFICATION 2323-ES-100 WERE ALLEGED TO BE INCONSISTENT WITH THE CRITERIA IN IEEE STANDARD 384-1974 AS AUGMENTED BY RG 1.75 PARTICULARLY REGARDING THE SEPARATION OF CABLE TRAY AND CONDUIT. TRT FOUND A REQUIREMENT IN THE SPECIFICATION THAT PERMITTED NONSAFETY-RELATED RIGID CONDUITS TO HAVE A MINIMUM SEPARATION OF ONE INCH FROM THE TOP OF OPEN SAFETY-RELATED TRAYS. THIS REQUIREMENT APPEARED TO BE INCONSISTENT WITH IEEE STANDARD 384-1974 AND RG 1.75. TRT DETERMINED THAT NO INFORMATION WAS INCLUDED IN THE FSAR THAT SUPPORTED THE ONE INCH SEPARATION BETWEEN CABLE TRAYS AND CONDUITS. TRT DID, HOWEVER, REVIEW AN EXISTING GIBBS & HILL (G&H) ANALYSIS, INCLUDING TEST RESULTS, THAT WAS USED TO ESTABLISH THE REQUIREMENT IN SPECIFICATION 2323-ES-100 FOR THE ONE INCH SEPARATION. THE ANALYSIS CONCLUDED THAT RIGID CONDUITS CONSTITUTED AN ACCEPTABLE BARRIER BETWEEN CABLES INSIDE CONDUIT AND CABLES INSIDE LADDER OR OPEN-TYPE TRAYS. TRT FOUND NO EVIDENCE THAT THE EXISTING G&H ANALYSIS HAD BEEN EVALUATED BY THE NRC STAFF FOR COMANCHE PEAK.	CPRT ---- CPRT, UNDER ISAP I.B.3, REVIEWED THE G&H REPORT THAT COMPILED RACEWAY SEPARATION CRITERIA AND SUPPORTING ANALYSES. CPRT CONCLUDED THAT THE DOCUMENTS PROVIDE ADEQUATE JUSTIFICATION FOR THE EXISTING CRITERIA. (ISAP I.B.3 RESULTS REPORT PG 6 AND 13). TU ELECTRIC SUBMITTED THE FSAR CHANGE REQUEST WITH THE ESTABLISHED CONDUIT TO CABLE TRAY SEPARATION CRITERIA TO NRC FOR EVALUATION. THAT CHANGE HAS BEEN ENTERED IN THE FSAR UNDER AMENDMENT 60. THE CPRT RESULTS RESOLVE THIS ISSUE.

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		THE ANALYSIS SHOULD HAVE BEEN REFERENCED IN THE FSAR.	
SSER: 07 ALLEG: AQE-36 ITEM: 07.03A	VENDOR INSTALLED TERMINAL LUGS IN GE MOTOR CONTROL CENTERS WERE EXCESSIVELY BENT, AND THE RESULTING NCR'S HAD NOT BEEN PROPERLY DISPOSITIONED. REF. PG. J-27.	TRT --- TRT DISCOVERED 16 NONCONFORMANCE REPORTS (NCRs) THAT ADDRESSED THE ALLEGATION REGARDING EXCESSIVELY BENT VENDOR-INSTALLED APC TERMINAL LUGS IN ITE GOULD-BROWN BOVERI 6.9KV SWITCHGEAR. MANY OF THE DISPOSITIONS OF THE NCRs DID NOT INDICATE THAT AN ENGINEERING EVALUATION HAD TAKEN PLACE, AND NEITHER MECHANICAL STRENGTH NOR ELECTRICAL CHARACTERISTICS WERE ADDRESSED FOR TWISTED LUGS. TRT CONCLUDED THAT CONCERNS EXISTED ABOUT THE ACCEPTABILITY OF VENDOR-INSTALLED TERMINAL LUGS IN ITE GOULD-BROWN BOVERI SWITCHGEAR. ACTIONS REQUIRED --- TU ELECTRIC SHALL REEVALUATE AND REDISPOSITION ALL NCRs RELATED TO VENDOR-INSTALLED TERMINAL LUGS IN ITE GOULD-BROWN BOVERI SWITCHGEAR, TAKING INTO CONSIDERATION THE EFFECTS OF TWISTED AS WELL AS BENT LUGS, AND PERFORM AND DOCUMENT THE RESULTS OF ENGINEERING ANALYSES TO JUSTIFY ANY RESULTING USE-AS-IS-DISPOSITIONS.	CPRT --- UNDER ISAP I.A.5, CPRT CONFIRMED THAT THE ORIGINAL DISPOSITIONING OF NCRs BY TU ELECTRIC WAS TECHNICALLY ACCEPTABLE. (ISAP I.A.5 RESULTS REPORT PG 9). CPRT REVIEWED THE VENDOR EVALUATION REPORT AND METALLURGICAL ANALYSIS AND CONFIRMED THAT THE ORIGINAL QUALIFICATION OF THE TERMINAL LUGS BY TU ELECTRIC WAS SUPPORTED BY THE VENDOR FOR LUGS THAT WERE BENT TO NINETY DEGREES OR TWISTED TO FORTY-FIVE DEGREES. CPRT ALSO REINSPECTED THE LUGS COVERED BY THE REDISPOSITIONED NONCONFORMANCE REPORTS AND FOUND THAT THE LUGS MET THE ESTABLISHED CRITERIA. (ISAP I.A.5 RESULTS REPORT PG.7, 8, AND 9). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG: AE-13 ITEM: 07.04A-2	IMPROPER CABLE SPLICES EXISTED WITHIN VARIOUS PANELS. REF. PG J-27	TRT --- THE ALLEGATION INVOLVED THE USE OF IMPROPER SIZE AND TYPE OF TERMINAL LUGS FOR CABLES IN VARIOUS PANELS AND THE USE OF BUTT SPLICES IN PANELS THAT COULD BE IN VIOLATION OF REGULATORY REQUIREMENTS AND SITE PROCEDURES. THE CONCERN ABOUT TERMINAL LUGS WAS NOT SUBSTANTIATED. THE CONCERN ABOUT BUTT SPLICES IS DISCUSSED BELOW. NRC STAFF REVIEWED TU ELECTRIC'S JUSTIFICATION FOR PERMITTING BUTT SPLICES IN PANELS AND CONCLUDED THAT THE PRACTICE WAS ACCEPTABLE ON A LIMITED BASIS PROVIDED OPERABILITY OF CIRCUITS IS VERIFIED, WIRE SPLICES ARE QUALIFIED, AND SPLICES ARE STAGGERED. TRT INSPECTED BUTT SPLICES IN SAFETY RELATED PANELS AND FOUND THE SPLICES TO BE IN CONFORMANCE WITH TU	CPRT --- CPRT, UNDER ISAP I.A.2, CONDUCTED A REVIEW OF INSPECTION REPORTS FOR SPLICES AND AN INSPECTION OF THOSE SPLICES. CPRT CONCLUDED THAT FIFTEEN TO TWENTY PERCENT OF THE SPLICE POPULATION HAD NOT BEEN WITNESSED BY QC AND MANY INADEQUATE SPLICE INSTALLATIONS EXISTED. SPLICES WERE ALSO FOUND NOT TO BE STAGGERED, BECAUSE STAGGERING OF SPLICES WAS NOT REQUIRED BY PROCEDURE. THE CAUSES OF THE PROBLEMS WERE INADEQUATE INSTALLATION AND INSPECTION PROCEDURES AND QC SUPERVISION. ALL KNOWN AMP PIES SPLICES WEREOR WILL BE, REINSPECTED. HARDWARE, DOCUMENTATION, AND STAGGERING PROBLEMS IDENTIFIED BY THESE INSPECTIONS WILL BE CORRECTED AS PART OF THE DISPOSITIONING OF ASSOCIATED NCRs. (ISAP I.A.2 RESULTS REPORT PG.9,17,26-29,31, AND 32). CPRT, UNDER ISAP I.A.3, REVIEWED INSTALLATION AND QC PROCEDURES THAT HAD BEEN REVISED TO INCLUDE CONTINUITY CHECKS AND STAGGERING

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		ELECTRIC'S PROCEDURAL REQUIREMENTS, EXCEPT THAT HEAT-SHRINKABLE CABLE INSULATION SLEEVES WERE NOT INSTALLED AS REQUIRED ON 600 VOLT CONTROL AND INSTRUMENTATION CONNECTIONS. THE CONCERN ABOUT HEAT-SHRINKABLE SLEEVES IS DISCUSSED UNDER ITEM 07.04C-3. PROCEDURES DID NOT REQUIRE CHECKS FOR OPERABILITY, QUALIFICATION OF SPLICES, AND STAGGERING OF SPLICES. A REVIEW OF QC INSPECTION REPORTS SHOWED THAT THE WITNESSING OF SPLICES HAD NOT BEEN DOCUMENTED IN ALL CASES AS REQUIRED. THE ASPECT OF THIS CONCERN RELATED TO INSPECTOR PERFORMANCE IS DISCUSSED UNDER ITEM 7.07A.	OF SPLICES. CPRT FOUND THE PROCEDURES ADEQUATE. CPRT ALSO REVIEWED THE QUALIFICATION DATA PACKAGES FOR AMP PIES SPLICES AND CONCLUDED THAT THE SPLICES WERE QUALIFIED FOR ALL EXPECTED SERVICE CONDITIONS AT CPSES. (ISAP I.A.3 RESULTS REPORT PG.8). CPRT, UNDER ISAP VII.C, CHECKED 95 CABLE SAMPLES FOR UNDOCUMENTED SPLICES THAT WERE NOT PREINSULATED. NONE WERE IDENTIFIED. CPRT ALSO REVIEWED QC DOCUMENTS FOR NINETY BOLTED CONNECTIONS. TWO INSIGNIFICANT PROBLEMS WERE NOTED. ONE PROBLEM WAS A MISSING TERMINATION INSPECTION REPORT. THE OTHER PROBLEM INVOLVED USING A POST INSTALLATION INSPECTION FORM INSTEAD OF AN IN-PROCESS FORM. BOTH OF THESE PROBLEMS DO NOT AFFECT THE EXISTING CONDITION OF THE CONNECTIONS AS SUBSEQUENT REWORK AND TESTING HAS OCCURRED. (ISAP VII.C RESULTS REPORT, APPENDIX 3, PG. 18, 24, AND 25). CPRT, THEREFORE, SUBSTANTIATED TRT CONCERNS ABOUT PREINSULATED BUTT SPLICES. THE CPSES PROJECT DEMONSTRATED THAT SPLICES WITH THE WORST DEVIATIONS NOTED DURING REINSPECTIONS WOULD STILL WITHSTAND THE MAXIMUM PULLOUT FORCE ENCOUNTERED DURING THE WORST-CASE DESIGN BASIS SEISMIC ACTIVITY. THEREFORE,CPRT CONCLUDED THAT THERE IS REASONABLE ASSURANCE THAT AMP PIES SPLICE INSTALLATIONS ARE CAPABLE OF PERFORMING THEIR INTENDED SAFETY FUNCTION. (ISAP I.A.2 RESULTS REPORT PG 23). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 07 ALLEG: 4E-18 ITEM: 07.04B-1	CABLES WERE BUTT SPLICED INSIDE PANELS IN VIOLATION OF PROCEDURES. REF. PG. J-27.	TRT --- THE ALLEGATION INVOLVED BUTT SPLICES IN PANELS THAT COULD BE IN VIOLATION OF REGULATORY REQUIREMENTS AND SITE PROCEDURES. AMENDMENT 44 TO THE FSAR ALLOWED BUTT SPLICES IN PANELS ON A LIMITED BASIS. THE NRC STAFF REVIEWED TU ELECTRIC'S JUSTIFICATION FOR PERMITTING BUTT SPLICES IN PANELS AND CONCLUDED THAT THE PRACTICE IS ACCEPTABLE ON A LIMITED BASIS PROVIDED THE OPERABILITY OF THE CIRCUITS IS VERIFIED, SPLICES ARE QUALIFIED, AND SPLICES ARE STAGGERED WITHIN PANELS. ACTIONS REQUIRED --- TU ELECTRIC SHALL DEVELOP ADEQUATE INSTALLATION AND INSPECTION PROCEDURES TO REINSPECT ALL EXISTING BUTT SPLICE TO ENSURE (1) THE OPERABILITY OF THOSE CIRCUITS	CPRT --- IN 1982 AND 1983, WORK IN CONTROL PANELS RESULTED IN SOME CONDUCTORS BEING TOO SHORT TO BE PROPERLY TERMINATED AT DESIGNATED POINTS. INSTEAD OF REPULLING CABLES OR REDESIGNING THE INTERNALS OF CABINETS, WHICH WOULD INVOLVE SIGNIFICANT DISASSEMBLY AND REWORK, THE CPSES PROJECT ELECTED TO ADD EXTENSIONS TO CONDUCTORS BY USING AMP PRE-INSULATED ENVIRONMENTALLY SEALED (PIES) SPLICES. THE FSAR ORIGINALLY COMMITTED TO IEEE 420-1973, WHICH STATES THAT SPLICES ARE NOT ALLOWED WITHIN CONTROL SWITCHBOARDS. REGULATORY GUIDE 1.75, REV.1, STATES THAT SPLICES SHOULD BE PROHIBITED IN RACEWAYS. IEEE 383-1974 RECOGNIZES THE ACCEPTABILITY OF QUALIFIED FIELD SPLICES AND PROVIDES CRITERIA FOR QUALIFYING THESE SPLICES. IN JULY 1983, TU ELECTRIC CONTACTED THE NRC STAFF TO DISCUSS THE NEED TO REVISE THE FSAR TO COVER SPLICES. THE TRT INVESTIGATION OCCURRED IN JULY 1984. IN SEPTEMBER 1984, THE NRC STAFF APPROVED THE FSAR AMENDMENT PERMITTING THESE SPLICES PROVIDED THAT

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		THAT CONTAIN BUTT SPLICES IN PANELS, (2) THAT THE WIRE SPLICING MATERIALS AND METHODS USED ARE QUALIFIED FOR ANTICIPATED SERVICE CONDITIONS, AND (3) THAT SPLICES ARE STAGGERED WITHIN THE PANEL SO THAT THEY ARE NOT ADJACENT TO EACH OTHER IN THE SAME BUNDLE.	INSTALLATION PROCEDURES INCLUDED VERIFICATION OF THE OPERABILITY OF CIRCUITS INVOLVED, THE SPLICES USED WERE QUALIFIED FOR ANTICIPATED SERVICE CONDITIONS, AND SPLICES WERE STAGGERED WITHIN PANELS SO THAT THEY WERE NOT PRESSING AGAINST EACH OTHER. INSTALLATION AND QC PROCEDURES DID NOT CONTAIN DETAILED INSTRUCTIONS ON THE PROPER SELECTION, INSTALLATION, AND INSPECTION REQUIREMENTS, FOR AMP PIES SPLICES AND DID NOT REFERENCE THE DRAWING WITH TYPICAL DETAILS FOR SPLICE INSTALLATIONS. (ISAP I.A.2 RESULTS REPORT PG 2, 3, AND 27). CPRT REINSPECTED AMP PIES SPLICES USING DRAWINGS AND DESIGN CHANGE DOCUMENTS TO INDICATE WHERE THE SPLICES WERE LOCATED. NINETY-THREE SPLICES WERE IDENTIFIED THAT WERE NOT SHOWN ON DRAWINGS. SEVENTY-SEVEN OF THESE SPLICES HAD BEEN AUTHORIZED BY DESIGN CHANGE AUTHORIZATIONS (DCA's), BUT DRAWINGS HAD NOT BEEN REVISED TO SHOW THE SPLICES. IN 70 OF THE 77 CASES, THE DCA's HAD ACTUALLY BEEN REVISED LATER TO DELETE THE AUTHORIZATION FOR THE SPLICES. THESE SPLICES WERE REMOVED. THE REMAINING 16 OF THE 93 SPLICES THAT WERE FOUND HAD NOT BEEN AUTHORIZED BY ENGINEERING. IN 149 OTHER CASES, DRAWINGS INDICATED THAT SPLICES EXISTED, BUT REINSPECTIONS FOUND NO SPLICES. THE ROOT CAUSE OF THIS FAILURE TO MAINTAIN PROPER CONFIGURATION CONTROL WAS A BREAKDOWN IN THE INTERFACE BETWEEN ENGINEERING AND CONSTRUCTION. DESPITE THIS BREAKDOWN, TESTING AND ANALYSIS DEMONSTRATED THAT THE SPLICES REVIEWED WOULD HAVE BEEN ABLE TO PERFORM THEIR INTENDED FUNCTION. ALL KNOWN AMP PIES SPLICES HAVE BEEN OR WILL BE INSPECTED. CORRECTIVE ACTION HAS BEEN INITIATED FOR EACH OF THE FINDINGS. DRAWINGS HAVE BEEN UPDATED TO SHOW ALL KNOWN SPLICES. NO FURTHER IMPLICATIONS EXIST. (ISAP I.A.2 RESULTS REPORT PG 15, 16, 29, 30, AND 32). CPRT REINSPECTIONS OF SPLICES VERIFIED THAT THE SPLICES ARE PROPERLY STAGGERED. PREOPERATIONAL AND STARTUP TESTING VERIFIED THAT SPLICED CIRCUITS ARE FUNCTIONAL. CPRT REVIEWED THE QUALIFICATION DATA PACKAGE AND CONCLUDED THAT AMP PIES SPLICES ARE QUALIFIED FOR ALL EXPECTED SERVICE CONDITIONS AT CPSES. INSTALLATION AND QC PROCEDURES HAVE BEEN REVISED TO INCLUDE DETAILED INSTRUCTIONS ON THE PROPER SELECTION, INSTALLATION, AND INSPECTION REQUIREMENTS FOR AMP PIES SPLICES AND TO REQUIRE STAGGERING AND CONTINUITY CHECKS. (ISAP I.A.2 RESULTS REPORT PG 30 AND 32 AND ISAP I.A.3 RESULTS REPORT PG 2, 8, AND 10). CPRT, UNDER ISAP VII.C, ALSO CHECKED 95 CABLE SAMPLES FOR UNDOCUMENTED SPLICES THAT WERE NOT PREINSULATED. NONE WAS

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			IDENTIFIED. (ISAP VII.C RESULTS REPORT, APPENDIX 3, PG 18). CPRT, THEREFORE, SUBSTANTIATED THE CONCERN ABOUT THE AS-BUILT SPLICE CONFIGURATION NOT BEING IN AGREEMENT WITH DESIGN DOCUMENTS. DESIGN DOCUMENTS HAVE BEEN UPDATED TO REFLECT ALL KNOWN SPLICES. ADDITIONAL SPLICES THAT MIGHT BE IDENTIFIED BY FIELD WALKDOWNS UNDER CPE-FVM-EE-021 AND CPE-FVM-EE-022 WILL BE INCORPORATED IN DESIGN DOCUMENTS UNDER STIR-NRC-E-004. THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 07 ALLEG: AE-22 ITEM: 07.04C-1	CABLE BUTT SPLICES EXISTED IN PANELS WITHOUT AUTHORIZATION OR DOCUMENTATION ON DRAWINGS. REF. PG. J-27.	TRT --- THE ALLEGATION INVOLVED BUTT SPLICES IN PANELS THAT COULD HAVE BEEN INSTALLED WITHOUT AUTHORIZATION OR DOCUMENTATION ON DRAWINGS. AMENDMENT 44 TO THE FSAR ALLOWED BUTT SPLICES IN PANELS ON A LIMITED BASIS. THE NRC STAFF REVIEWED TU ELECTRIC'S JUSTIFICATION FOR PERMITTING BUTT SPLICES IN PANELS AND CONCLUDED THAT THE PRACTICE IS ACCEPTABLE ON A LIMITED BASIS PROVIDED THE OPERABILITY OF CIRCUITS IS VERIFIED, SPLICES ARE QUALIFIED, AND SPLICES ARE STAGGERED WITHIN PANELS.	CPRT ---- IN 1982 AND 1983, WORK IN CONTROL PANELS RESULTED IN SOME CONDUCTORS BEING TOO SHORT TO BE PROPERLY TERMINATED AT DESIGNATED POINTS. INSTEAD OF REPULLING CABLES OR REDESIGNING THE INTERNALS OF CABINETS WHICH WOULD INVOLVE SIGNIFICANT DISASSEMBLY AND REWORK, THE CPSES PROJECT ELECTED TO ADD EXTENSIONS TO CONDUCTORS BY USING AMP PRE-INSULATED ENVIRONMENTALLY SEALED (PIES) SPLICES. THE FSAR ORIGINALLY COMMITTED TO IEEE 420-1973, WHICH STATES THAT SPLICES ARE NOT ALLOWED WITHIN CONTROL SWITCHBOARDS. REGULATORY GUIDE 1.75, REV.1, STATES THAT SPLICES SHOULD BE PROHIBITED IN RACEWAYS. IEEE 383-1974 RECOGNIZES THE ACCEPTABILITY OF QUALIFIED FIELD SPLICES AND PROVIDES CRITERIA FOR QUALIFYING THESE SPLICES. IN JULY 1983,TU ELECTRIC CONTACTED THE NRC STAFF TO DISCUSS THE NEED TO REVISE THE FSAR TO COVER SPLICES. THE TRT INVESTIGATION OCCURRED IN JULY 1984. IN SEPTEMBER 1984, THE NRC STAFF APPROVED THE FSAR AMENDMENT PERMITTING THESE SPLICES PROVIDED THAT INSTALLATION PROCEDURES INCLUDED VERIFICATION OF THE OPERABILITY OF CIRCUITS INVOLVED, THE SPLICES USED WERE QUALIFIED FOR ANTICIPATED SERVICE CONDITIONS, AND SPLICES WERE STAGGERED WITHIN PANELS SO THAT THEY WERE NOT PRESSING AGAINST EACH OTHER. (ISAP I.A.2 RESULTS REPORT PG 2 AND 3). CPRT REINSPECTED AMP PIES SPLICES USING DRAWINGS AND DESIGN CHANGE DOCUMENTS TO INDICATE WHERE THE SPLICES WERE LOCATED. NINETY-THREE SPLICES WERE IDENTIFIED THAT WERE NOT SHOWN ON DRAWINGS. SEVENTY-SEVEN OF THESE SPLICES HAD BEEN AUTHORIZED BY DESIGN CHANGE AUTHORIZATIONS (DCA's), BUT DRAWINGS HAD NOT BEEN REVISED TO SHOW THE SPLICES. IN 70 OF THE 77 CASES, THE DCA's HAD ACTUALLY BEEN REVISED LATER TO DELETE THE AUTHORIZATION FOR THE SPLICES. THESE SPLICES WERE REMOVED. THE REMAINING 16 OF THE 93 SPLICES THAT WERE FOUND HAD NOT BEEN AUTHORIZED BY ENGINEERING. IN 149

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			OTHER CASES, DRAWINGS INDICATED THAT SPLICES EXISTED, BUT REINSPECTIONS FOUND NO SPLICES. DRAWINGS HAVE BEEN UPDATED TO SHOW ALL KNOWN SPLICES. THE ROOT CAUSE OF THIS FAILURE TO MAINTAIN PROPER CONFIGURATION CONTROL WAS A BREAKDOWN IN THE INTERFACE BETWEEN ENGINEERING AND CONSTRUCTION. NO FURTHER IMPLICATIONS EXIST. (ISAP I.A.2 RESULTS REPORT PG 15, 16, 29, 30 AND 32). CPRT, UNDER ISAP VII.C, ALSO CHECKED 95 CABLE SAMPLES FOR UNDOCUMENTED SPLICES THAT WERE NOT PREINSULATED. NONE WAS IDENTIFIED. (ISAP VII.C RESULTS REPORT, APPENDIX 3, PG 18) CPRT, THEREFORE, SUBSTANTIATED THE CONCERN ABOUT SPLICES EXISTING IN PANELS WITHOUT AUTHORIZATION. DRAWINGS HAVE BEEN UPDATED TO SHOW ALL KNOWN SPLICES. (ISAP I.A.2 RESULTS REPORT PG 32). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 07 ALLEG: AE-13 ITEM: 07.04C-3	ALL SPLICES INSPECTED WERE MISSING NUCLEAR HEAT-SHRINKABLE CABLE INS SLEEVES AS REQ. BY PROCEDURE FOR 600-V CONTRL & INSTR CONNECTIONS. REF.PG J-29	TRT --- IN THE PROCESS OF INVESTIGATING AE-13, AE-18, AND AE-22, TRT FOUND THAT SPLICES WERE MISSING HEAT-SHRINKABLE CABLE INSULATION SLEEVES WHICH WERE REQUIRED FOR 600 VOLT CONTROL AND INSTRUMENTATION CONNECTIONS. ACTION REQUIRED --- TU ELECTRIC SHALL PROVIDE ADDITIONAL QC INSPECTOR TRAINING WITH RESPECT TO THE AREAS IN WHICH NUCLEAR HEAT-SHRINKABLE SLEEVES ARE REQUIRED ON SPLICES AND ENSURE THAT (1) SUCH SLEEVES ARE INSTALLED WHERE REQUIRED, (2) ALL QC INSPECTIONS REQUIRING WITNESSING FOR SPLICES HAVE BEEN PERFORMED AND PROPERLY DOCUMENTED, AND (3) ALL BUTT SPLICES ARE PROPERLY IDENTIFIED ON THE APPROPRIATE DESIGN DRAWINGS AND ARE PHYSICALLY IDENTIFIED WITHIN THE APPROPRIATE PANELS.	CPRT --- BUTT SPLICES INSPECTED BY TRT WERE AMP PRE-INSULATED ENVIRONMENTALLY SEALED (PIES) SPLICES. HEAT-SHRINKABLE SLEEVES WERE NOT REQUIRED FOR AMP PIES SPLICES BECAUSE THOSE SPLICES WERE QUALIFIED FOR THEIR INTENDED USE WITHOUT SLEEVES. HOWEVER, THE QC PROCEDURE THAT COVERED THE INSPECTION OF SPLICES DID NOT EXCLUDE SLEEVES FROM AMP PIES SPLICES. THE TRT CONCERN ABOUT THE LACK OF SLEEVES, THEREFORE, WAS CAUSED BY A PROCEDURAL RATHER THAN A HARDWARE PROBLEM. (ISAP I.A.1 RESULTS REPORT PG 2). CPRT IMPLEMENTED ISAP I.A.1 TO ADDRESS THE TRT CONCERN ABOUT THE APPARENT LACK OF AWARENESS OF WHERE HEAT-SHRINKABLE INSULATION SLEEVES SHOULD BE INSTALLED. CPRT CONDUCTED A DOCUMENT REVIEW USING A SAMPLING APPROACH TO DETERMINE IF HEAT-SHRINKABLE INSULATION SLEEVES HAD BEEN INSTALLED WHERE REQUIRED. BASED ON THE DOCUMENT REVIEWS OF SOME 111 RANDOMLY SELECTED ITEMS AND ASSOCIATED REINSPECTIONS, CPRT CONCLUDED THAT THERE WAS REASONABLE ASSURANCE THAT HEAT-SHRINKABLE INSULATION SLEEVES HAD BEEN INSTALLED WHERE REQUIRED. (ISAP I.A.1 RESULTS REPORT PG 3 AND 26). REASONABLE ASSURANCE THAT ALL SLEEVES HAD BEEN INSPECTED COULD NOT, HOWEVER, BE GIVEN. ALSO, TWO OF THE FIVE SLEEVES THAT WERE REINSPECTED DID NOT CONFORM FULLY TO MANUFACTURER'S INSTRUCTIONS. ONE OF THE SLEEVES WAS NOT UNIFORMLY SHRUNK AROUND THE CABLE. THE OTHER SLEEVE DID NOT HAVE ADHESIVE FLOW AT THE UPPER END OF THE

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			SLEEVE. CPRT CONCLUDED THAT SIMILAR DEVIATIONS COULD REMAIN UNDETECTED AND THAT SUCH DEVIATIONS, IF OCCURRING IN A HARSH ENVIRONMENT, COULD COMPROMISE THE INTEGRITY OF THE ENVIRONMENTAL SEALS. CPRT RECOMMENDED THAT DOCUMENTATION FOR ALL HEAT-SHRINKABLE INSULATION SLEEVES BE REVIEWED TO DETERMINE IF SLEEVES HAD ADEQUATE QC INVOLVEMENT IN THE INSTALLATIONS AND THAT SLEEVES IN HARSH ENVIRONMENTS BE REINSPECTED TO ENSURE THEY CAN PERFORM THEIR INTENDED FUNCTION. (ISAP I.A.1 RESULTS REPORT PG 15, 20, AND 25). CPRT, UNDER ISAP VII.C, REINSPECTED RANDOMLY SELECTED CABLES, INCLUDING ANY INSTALLED HEAT-SHRINKABLE INSULATION SLEEVES. NO PROBLEMS WITH SLEEVES WERE IDENTIFIED. (ISAP VII.C RESULTS REPORT, APPENDIX 3, PG 18 AND 19-21). SEE ALSO ITEM 07.04C-1 FOR ADDITIONAL CPRT RESULTS RELATED TO THE ACTIONS REQUIRED BY TRT. THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 07 ALLEG: AQE-10 ITEM: 07.05A	CRAFTSMEN INSTALLING CONDUIT SUPPORTS WERE NOT PROPERLY TRAINED, THUS NECESSITATING EXTENSIVE REWORK. REF. PG. J-33.	TRT --- TRT CONCLUDED THAT THIS CONCERN MAY BE INDICATIVE OF POOR TRAINING IN THE AREA OF PROCEDURAL REQUIREMENTS. ACTIONS REQUIRED --- TU ELECTRIC SHALL EVALUATE THE ADEQUACY OF CRAFT PERSONNEL TRAINING IN THE USE OF INSTALLATION MANUALS TO ESTABLISH ROOT CAUSES AND APPROPRIATE CORRECTIVE ACTIONS. THIS ACTION SHALL BE INTEGRATED WITH OTHER ACTIONS CONCERNING CRAFT PERSONNEL TRAINING ADDRESSED UNDER QA/QC CATEGORY 8, AS BUILT.	CPRT ---- IN ISAP I.D.3, CPRT EVALUATED CRAFT TRAINING PROGRAMS (PAST AND PRESENT) THROUGH REVIEW OF CRAFT TRAINING PROCEDURES, INTERVIEWS WITH CRAFT PERSONNEL AND, FOR THE CURRENT PROGRAM, OBSERVATION OF TRAINING AND FIELD ACTIVITIES. CLASSROOM TRAINING USED LESSON PLANS, INSTRUCTORS WERE WELL PREPARED, AND PERFORMANCE TESTS WERE GIVEN. CRAFT PERSONNEL WERE FOUND TO BE KNOWLEDGEABLE, AND ON-THE-JOB TRAINING (OJT) WAS CREDITED AS AN IMPORTANT ASPECT OF DEVELOPMENT. A REVIEW OF PAST CORRECTIVE ACTION REQUESTS (CARS) INDICATED THAT CORRECTIVE MEASURES IN TRAINING WERE EFFECTIVE. PAST AND CURRENT PRACTICES USED FOR CRAFT SELECTION AND TRAINING WERE IN COMPLIANCE WITH ANSI N45.2-1971 AND WERE ADEQUATE. THE CRAFT SELECTION AND ASSIGNMENT PROCESS IS A PRACTICAL APPROACH WITH RESPONSIBLE CHECKS AND BALANCES. PROCEDURAL, ON-THE-JOB, CLASSROOM AND MOCKUP TRAINING PROGRAMS HAVE BEEN EFFECTIVE. (ISAP I.D.3 RESULTS REPORT PG 17, 18, AND 20). A FURTHER REVIEW OF CRAFT TRAINING WAS CONDUCTED DURING COLLECTIVE EVALUATION. INADEQUATE TRAINING WAS IDENTIFIED AS A ROOT CAUSE OR

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
			CONTRIBUTING CAUSE FOR EIGHT FINDINGS. RELATIVELY FEW PROBLEMS ATTRIBUTABLE TO TRAINING WERE IDENTIFIED, AND IN THESE CASES, DEVIATION RATES FOR AFFECTED AREAS GENERALLY RANGED ABOVE 5 PERCENT. EVEN FOR THESE TASKS, TRAINING WAS APPARENTLY ADEQUATE FOR MOST INSTALLATIONS. WHERE TRAINING WAS A KEY FACTOR IN THE FINDING, IT IS LIKELY THAT TRAINING PROGRAMS WERE ORIENTED TOWARD THE MORE-DIFFICULT-TO ACCOMPLISH TASKS AND IN CERTAIN AREAS NEGLECTED TO ADDRESS TASKS OF INTERMEDIATE DIFFICULTY ADEQUATELY. RECOMMENDATIONS FOR IMPROVEMENT IN CRAFT TRAINING WERE MADE IN EACH OF THESE AREAS. (CER, PART III, PG 104 AND 105). THESE ACTIONS WILL RESOLVE CONCERNS REGARDING THE BROWN & ROOT INDOCTRINATION AND TRAINING PROGRAM FOR CONSTRUCTION PERSONNEL AND WILL PRECLUDE RECURRENCES OF PROBLEMS CAUSED BY TRAINING. (CER, PART IV, PG 17). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 07 ALLEG: AE-17 ITEM: 07.06	FIELD RUN CONDUIT, DRYWALL, AND LIGHTING INSTALLED ABOVE CONTROL ROOM PANELS WERE CLASSIFIED NONSEISMIC AND INADEQUATELY SUPPORTED. REF. PG. J-45	TRT --- THE TRT DISCUSSION OF AE-17 IN SSER-8, PAGE K-83, HAS BEEN COMBINED WITH THIS ITEM. TRT INSPECTED THE CONDUIT INSTALLATION ABOVE THE CONTROL ROOM CEILING AND DETERMINED THAT SAFETY-RELATED CONDUIT WAS FASTENED BY SEISMIC CATEGORY I SUPPORTS TYPICAL OF THOSE IN OTHER AREAS OF THE PLANT. NONSAFETY-RELATED, CONDUIT, THAT WAS NOT GREATER THAN TWO INCHES IN DIAMETER, WAS NOT SUPPORTED BY SEISMIC CATEGORY I SUPPORTS AND DID NOT HAVE SEISMIC CATEGORY II CABLE RESTRAINTS. THIS INSTALLATION WAS CONSISTENT WITH OTHER SUCH NONSAFETY-RELATED CONDUIT IN THE PLANT. THE APPLICABLE DRAWING DID NOT REQUIRE SEISMIC CATEGORY II CABLE RESTRAINTS FOR THIS TYPE OF CONDUIT INSTALLATION. TRT FOUND THAT THE SUSPENDED CEILING ABOVE THE CENTRAL PART OF THE CONTROL ROOM WAS SUPPORTED BY A METAL FRAMEWORK ATTACHED TO PRIMARY BUILDING CONCRETE. THE FRAMEWORK WAS ALSO ATTACHED TO THE CONCRETE WITH A SYSTEM OF STEEL CABLES. THE CABLES WOULD HOLD THE	CPRT ---- THE SUPPORT OF CONDUIT THAT WAS TWO INCHES OR LESS IN DIAMETER WAS ASSUMED TO BE ADEQUATE BASED ON THE INHERENT CAPACITY OF THE ANCHORAGE AND SUPPORTS FOR THESE RELATIVELY LIGHTLY LOADED INSTALLATIONS. UNCONTROLLED CALCULATIONS WERE GENERATED IN SUPPORT OF THIS ASSUMPTION. HOWEVER, TRT FOUND THAT THE SUPPORT OF NONSAFETY-RELATED CONDUIT WAS INCONSISTENT WITH SEISMIC REQUIREMENTS AND NO EVIDENCE SUBSTANTIATED THE ADEQUACY OF THE INSTALLED SYSTEM. TU ELECTRIC CONDUCTED AN ANALYSIS OF SAMPLE RUNS AND FOUND AN APPROXIMATE TEN PERCENT FAILURE RATE OF THE SUPPORTS. THEREFORE, TU ELECTRIC IMPLEMENTED A COMPREHENSIVE SEISMIC QUALIFICATION PROGRAM THAT ENCOMPASSED ALL OF THE NONSAFETY-RELATED CONDUIT LESS THAN OR EQUAL TO TWO INCHES IN DIAMETER. CPRT, UNDER ISAP I.C, OVERVIEWED THE CPSES PROJECT'S SEISMIC QUALIFICATION PROGRAM FOR NONSAFETY-RELATED CONDUIT. THE OVERVIEW ASSESSED COMPLIANCE WITH THE FSAR AND RG 1.29 AND REVIEWED WALKDOWN AND SEISMIC QUALIFICATION PROCEDURES, SPECIAL STUDIES, TESTS, AND OVERALL PROGRAM METHODOLOGY. CPRT CONCLUDED THAT THE PROGRAM IS COMPREHENSIVE AND CAPABLE OF MEETING FSAR AND LICENSING COMMITMENTS AND RESOLVING KNOWN TECHNICAL ISSUES. THOSE ISSUES

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		WEIGHT OF THE FRAMING AND DRYWALL IF THE FRAMEWORK FAILED DURING A SEISMIC EVENT. TRT FOUND THAT LIGHTING FIXTURES WERE SUPPORTED FROM AN INTERMEDIATE SUBSTRUCTURE BY LIGHT-WEIGHT CONDUIT. THE SUBSTRUCTURE WAS ALSO SUPPORTED FROM THE PRIMARY BUILDING CEILING BY LIGHT-WEIGHT CONDUIT. PARALLEL WITH EACH SUPPORT CONDUIT WERE TWO STEEL CABLES WHICH WOULD ASSUME THE LOAD IF THE SUPPORT CONDUIT OR ITS ATTACHMENT WERE TO FAIL. TRT CONCLUDED THAT THE INSTALLATION OF NONSAFETY-RELATED CONDUIT IN THE CONTROL ROOM APPEARED TO BE INCONSISTENT WITH RG 1.29. THE ACCEPTABILITY OF THE SUSPENDED CEILING AND LIGHTING SUPPORTS WAS DEPENDENT ON THE ANALYSIS OF SEISMIC CATEGORY II RESTRAINTS TO BE PROVIDED BY TU ELECTRIC. ACTION REQUIRED --- TU ELECTRIC SHALL 1. PROVIDE TRT WITH ANALYSES THAT SUBSTANTIATE (1) THE ADEQUACY OF THE OVERALL SEISMIC SUPPORT SYSTEM INSTALLATION FOR ALL THE ITEMS LOCATED ABOVE THE CEILING IN THE CONTROL ROOM, INCLUDING NONSAFETY-RELATED CONDUIT, SUSPENDED CEILING, AND LIGHTING FIXTURES AND (2) THE ADEQUACY OF THE SEISMIC SUPPORT SYSTEM INSTALLATION FOR NONSAFETY-RELATED CONDUIT IN SEISMIC CATEGORY I AREAS OF THE PLANT OTHER THAN THE CONTROL ROOM. THIS ACTION SHALL BE INTEGRATED AS APPROPRIATE WITH OTHER ACTIONS ADDRESSED UNDER CIVIL AND STRUCTURAL CATEGORY 14, SEISMIC DESIGN OF CONTROL ROOM CEILING ELEMENTS. 2. EVALUATE THE ADEQUACY OF THE QA/QC PROGRAM RELATED TO THE DEFICIENCIES IDENTIFIED ABOVE TO ESTABLISH ROOT CAUSES AND APPROPRIATE ACTIONS. THESE ACTIONS SHOULD BE INTEGRATED WITH OTHER ACTIONS ADDRESSED UNDER THE QA/QC CATEGORY I, DESIGN PROCESS. (THE FOLLOWING ACTIONS ARE FROM SSER-8, PAGE K-85.) 3. PROVIDE THE RESULTS OF SEISMIC ANALYSIS THAT	INCLUDED HILTI BOLT FACTOR OF SAFETY, CONDUIT DAMPING, EDGE DISTANCE VIOLATION, SUPPORT SELF-WEIGHT, ANCHOR BOLT DESIGN, AND CLAMP USAGE. (ISAP I.C RESULTS REPORT PG 2-4, 25, 26, 34, AND 35). THE DESIGN OF THE ORIGINAL CEILING WAS BASED ON THE PREMISE THAT THE FAILURE OF ARCHITECTURAL FEATURES WITH SMALL MASSES WOULD NOT BE ADVERSE TO EQUIPMENT OR OCCUPANTS OF THE CONTROL ROOM. TRT REQUESTED THAT ANALYSES BE PROVIDED THAT DEMONSTRATED THAT THE CEILING AND LIGHTING FIXTURES MET THE REQUIREMENTS OF THE FSAR AND RG 1.29. AN ASSESSMENT OF THE CEILING DESIGN RESULTED IN THE CONCLUSION THAT AN EFFORT TO QUALIFY THE EXISTING CEILING WOULD BE TIME-CONSUMING. THE APPROACH SELECTED WAS TO ESTABLISH A DESIGN THAT COULD READILY BE QUALIFIED SEISMICALLY AND TO REPLACE THE CEILING USING THE NEW DESIGN. (ISAP II.D RESULTS REPORT PG 3-5 AND 8). CPRT, UNDER ISAP II.D, REVIEWED THE SEISMIC DESIGN OF THE NEW CEILING SYSTEM INCLUDING ATTACHED ARCHITECTURAL FEATURES, THE PROCESS FOR EVALUATING POTENTIAL SEISMIC INTERACTIONS BETWEEN COMPONENTS OR BETWEEN COMPONENTS AND THE CEILING, AND, AS A GENERIC IMPLICATION OF THE TRT ISSUE, THE PARTS OF THE DAMAGE STUDY PROGRAM THAT HAD ALREADY BEEN COMPLETED TO ASCERTAIN WHETHER THE PROGRAM HAD BEEN CARRIED OUT ADEQUATELY. (ISAP II.D RESULTS REPORT PG 8 AND 9). THE REVIEW OF THE NEW CEILING DESIGN AND THE PROCESS FOR EVALUATING POTENTIAL SEISMIC INTERACTIONS BETWEEN COMPONENTS INCLUDED THE DESIGN PROCEDURE FOR THE CEILING DESIGN CALCULATIONS AND EQUIVALENT STATIC ANALYSIS, THE RESPONSE SPECTRUM ANALYSIS, AND POTENTIAL INTERACTIONS OF COMMODITIES ATTACHED TO OR ABOVE THE CONTROL ROOM CEILING. CPRT CONCLUDED THAT THE NEW CEILING DESIGN IS IN CONFORMANCE WITH THE PROVISIONS OF THE FSAR AND RG 1.29 AND THAT METHODS HAVE BEEN IDENTIFIED THAT, WHEN IMPLEMENTED, WILL ASSURE THAT COMMODITIES ATTACHED TO OR ABOVE THE CEILING ALSO SATISFY THOSE PROVISIONS. (ISAP II.D RESULTS REPORT PG 16-20). THE REVIEW OF PARTS OF THE DAMAGE STUDY PROGRAM THAT HAD ALREADY BEEN COMPLETED INCLUDED THE EVALUATION OF THE POTENTIAL INTERACTION OF ARCHITECTURAL FEATURES THAT HAD NOT BEEN PREVIOUSLY IN THE PROGRAM, PROGRAM PROCEDURES AND CRITERIA, AND IMPLEMENTATION OF THE PROGRAM. CPRT ALSO IDENTIFIED INTERACTIONS IN PARTICULAR AREAS, ASSESSED THE INTERACTIONS, AND COMPARED RESULTS TO THE EXISTING DOCUMENTATION IN THE DAMAGE STUDY PROGRAM. CPRT CONCLUDED THAT WHEN THE SEVERAL ACTIONS IN RESPONSE TO

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		DEMONSTRATE THAT THE NONSEISMIC ITEMS IN THE CONTROL ROOM (OTHER THAN THE SLOPING SUSPENDED DRYWALL CEILING) SATISFY THE PROVISIONS OF REGULATORY GUIDE 1.29 AND FSAR SECTION 3.7B.2.8. 4. PROVIDE AN EVALUATION OF SEISMIC DESIGN ADEQUACY OF SUPPORT SYSTEMS FOR THE LIGHTING FIXTURES (SEISMIC CATEGORY II) AND THE SUSPENDED DRYWALL CEILING (NONSEISMIC ITEM WITH MODIFICATION) WHICH ACCOUNTS FOR PERTINENT FLOOR RESPONSE CHARACTERISTICS OF THE SYSTEMS. 5. VERIFY THAT THOSE ITEMS IN THE CONTROL ROOM CEILING NOT INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF REGULATORY GUIDE 1.29 SATISFY APPLICABLE DESIGN REQUIREMENTS. 6. PROVIDE THE RESULTS OF AN ANALYSIS THAT JUSTIFY THE ADEQUACY OF THE NONSAFETY-RELATED CONDUIT SUPPORT SYSTEM IN THE CONTROL ROOM FOR CONDUIT WHOSE DIAMETER IS TWO INCHES OR LESS. 7. PROVIDE THE RESULTS OF AN ANALYSIS THAT DEMONSTRATE THAT THE FOREGOING PROBLEMS ARE NOT APPLICABLE TO OTHER CATEGORY II AND NONSEISMIC STRUCTURES, SYSTEMS, AND COMPONENTS ELSEWHERE IN THE PLANT.	CONCERNS OF CPRT ARE IMPLEMENTED, THE DAMAGE STUDY PROGRAM WILL ASSURE THAT ALL POTENTIAL SEISMIC INTERACTIONS ARE IDENTIFIED AND RESOLVED CONSISTENT WITH THE FSAR AND RG 1.29. THE CPRT CONCERNS INVOLVED RELATIVE BUILDING MOTION, SMALL BORE PIPE MOTION, ARCHITECTURAL FEATURES, COMMODITIES ATTACHED TO AND ABOVE THE CONTROL ROOM CEILING, SUPPORT OF CLASS 5 NOMOGRAM PIPING, HORIZONTAL PIPE AND CONDUIT MOTIONS, SECONDARY WALL MOTIONS, AND ADEQUACY OF FRAME SUPPORTS FOR LIGHTING FIXTURES. (ISAP II.D RESULTS REPORT PG 21-32 AND APPENDIX 4). CPRT SUBSTANTIATED SEISMIC CONCERNS ABOUT CONDUIT AND LIGHTING. A NEW DESIGN ADDRESSED CONCERNS ABOUT THE CEILING IN THE CONTROL ROOM. THIS ALLEGATION WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 07 ALLEG: AQE-06 ITEM: 07.07A	SOME ELECTRICAL INSPECTORS WERE NOT ADEQUATELY QUALIFIED, WERE GIVEN HELP TO PASS THEIR CERTIFICATION TESTS, AND HAD INCORRECT DESCRIPTIONS OF PRIOR ELECTRICAL OR INSPECTION EXPERIENCE ON THEIR EMPLOYMENT APPLICATIONS. REF. PG. J-55.	TRT --- BASED ON A REVIEW OF PERTINENT DOCUMENTATION AND INTERVIEWS, TRT CONCLUDED THAT EVIDENCE INDICATED THAT THE ELECTRICAL QC INSPECTOR QUALIFICATION PROGRAM LACKED PROGRAMMATIC CONTROLS. LACK OF PROGRAMMATIC CONTROLS MIGHT INDICATE THAT THE REQUIRED LEVEL OF QUALIFICATION WAS NOT OBTAINED FOR SOME ELECTRICAL QC INSPECTORS. BECAUSE THE TRAINING AND CERTIFICATION PROGRAM WAS THE SAME FOR ALL DISCIPLINES, EXCEPT ASME, TRT CONCLUDED THAT THE DEFICIENCIES IN PROCEDURAL REQUIREMENTS AND GUIDELINES IN THE TESTING PROGRAM FOR QC ELECTRICAL INSPECTORS, AND THE LACK OF DOCUMENTATION IN ISOLATED CASES, HAVE GENERIC	CPRT ---- CPRT, UNDER ISAP I.d.2, DETERMINED THAT TU ELECTRIC HAD CORRECTED PROCEDURAL PROBLEMS AND IMPLEMENTED SATISFACTORILY AN EFFECTIVE QC INSPECTOR CERTIFICATION PROGRAM THAT MET THE REQUIREMENTS OF REGULATORY GUIDE 1.58, REVISION 1, AND ANSI N45.2.6-1978. (ISAP I.d.2 RESULTS REPORT PG 28). CPRT REVIEWED REVISED PROCEDURES TO VERIFY COMPLIANCE WITH REGULATORY GUIDE 1.58 AND ANSI N45.2.6 AS COMMITTED TO BY THE CPSES FSAR AND TO DETERMINE IF THE REVISED PROCEDURES WERE ADEQUATE. THE REVISED PROCEDURES WERE MUCH MORE DEFINITIVE AND WERE JUDGED TO BE IN COMPLIANCE WITH FSAR REQUIREMENTS.

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		IMPLICATIONS TO OTHER CONSTRUCTION DISCIPLINES. THE IMPLICATIONS OF THT FINDINGS WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF QC INSPECTOR TRAINING AND QUALIFICATION UNDER QA/QC CATEGORY 4, TRAINING AND QUALIFICATION. ACTIONS REQUIRED --- TU ELECTRIC SHALL: 1. EVALUATE THE QC TESTING PROGRAM FOR QC ELECTRICAL INSPECTOR QUALIFICATIONS AND DEVELOP A TESTING PROGRAM WHICH OPTIMIZES ADMINISTRATIVE GUIDELINES, PROCEDURAL REQUIREMENTS, AND TEST FLEXIBILITY (e.g., COMPUTER-GENERATED TESTS) TO ASSURE THAT SUITABLE PROFICIENCY IS ACHIEVED AND MAINTAINED. THESE GUIDELINES AND/OR PROCEDURES SHALL INCLUDE SUCH ITEMS AS SCORING, RETESTS, AND QUESTION DISQUALIFICATION. 2. JUSTIFY THE ALLOWANCES IN THE PROCEDURE FOR ADMINISTERING SEPARATE (WAIVER) VISION TESTS IN LIEU OF EXAMINATIONS ADMINISTERED BY AN INDEPENDENT PROFESSIONAL EYE SPECIALIST. 3. REVIEW ALL ELECTRICAL QC INSPECTOR TRAINING, QUALIFICATION, CERTIFICATION AND RECERTIFICATION FILES AGAINST THE PROJECT REQUIREMENTS AS DOCUMENTED IN THE FSAR, AND PROVIDE THE INFORMATION IN SUCH A FORM THAT EACH REQUIREMENT IS CLEARLY SHOWN TO HAVE BEEN MET BY EACH INSPECTOR. IF AN INSPECTOR IS FOUND TO NOT MEET THE TRAINING, QUALIFICATION, CERTIFICATION, OR RECERTIFICATION REQUIREMENTS, TU ELECTRIC SHALL THEN REVIEW THE RECORDS TO DETERMINE THE ADEQUACY OF INSPECTIONS MADE BY UNQUALIFIED INDIVIDUALS AND PROVIDE A STATEMENT ON THE IMPACT OF THE DEFICIENCIES NOTED ON THE SAFETY OF THE PROJECT. 4. INTEGRATE ACTIONS UNDER PARAGRAPHS 1, 2, AND 3 ABOVE, AS APPROPRIATE, WITH OTHER ACTIONS ADDRESSED UNDER QA/QC CATEGORY 4, TRAINING AND QUALIFICATION.	ONLY ONE AREA OF POSSIBLE CONCERN REMAINED AS A RESULT OF THIS REVIEW. THE REVISED PROCEDURES ALLOWED SPECIFIC REQUIREMENTS, WITH THE EXCEPTION OF EDUCATION AND EXPERIENCE, TO BE REDUCED OR WAIVED. THIS CONCERN WAS DISCUSSED WITH TU ELECTRIC AND THEY ISSUED A REVISION TO THE APPROPRIATE PROCEDURE. THE REVISION CLARIFIED TU ELECTRIC'S INTENT AND ADEQUATELY ADDRESSED THE CPRT CONCERN. IN ADDITION, CPRT CONDUCTED A VERIFICATION OF THE IMPLEMENTATION OF THE REVISED PROCEDURES. THE SCOPE OF THIS VERIFICATION INCLUDED THE REVIEW OF DOCUMENTATION FOR SEVENTEEN INSPECTORS AND INSPECTOR CANDIDATES CERTIFIED BY TU ELECTRIC FROM AUGUST 19, 1985 UNTIL APRIL 15, 1986. ALTHOUGH SOME MINOR DOCUMENTATION ERRORS AND ONE CONCERN REGARDING ALTERNATE COLOR VISION TESTS WERE IDENTIFIED, THE OVERALL COMPLIANCE WAS SATISFACTORY AND PROVIDED ASSURANCE THAT INSPECTORS ARE CURRENTLY BEING CERTIFIED IN ACCORDANCE WITH FSAR COMMITMENTS. FURTHER DISCUSSION WITH TU ELECTRIC QA PERSONNEL RESOLVED THE CPRT CONCERN REGARDING ALTERNATE COLOR VISION TESTS. (ISAP I.D.2 RESULTS REPORT PG 16, 17, AND 18). SEPARATE FROM, BUT CLOSELY RELATED TO, THE PROCEDURAL UPGRADES DESCRIBED ABOVE, TU ELECTRIC UNDERTOOK TO COMPUTERIZE AND UPGRADE THEIR BANK OF EXAMINATION QUESTIONS USED TO TEST CANDIDATES FOR INSPECTOR CERTIFICATION. A COMPUTER PROGRAM WAS DEVELOPED AND EXISTING TEST QUESTIONS WERE PUT INTO THE SYSTEM. THIS WORK WAS COMPLETED IN MARCH 1985. TU ELECTRIC PERSONNEL THEN SPENT AN ADDITIONAL TWO MONTHS EVALUATING, EDITING, DELETING AND ADDING TO THE BANK OF TEST QUESTIONS. CPRT CONDUCTED AN EVALUATION OF THIS UPDATED COMPUTERIZED TEST QUESTION BANK AND FOUND THE QUESTIONS AND THE RELATED APPLICATION AND CONTROL MEASURES TO BE SATISFACTORY. THE WORK CONDUCTED BY TU ELECTRIC RESULTED IN A SIGNIFICANT UPGRADE BOTH IN TEST QUESTION ADEQUACY AND THE METHOD IN WHICH EXAMINATIONS COMPRISED OF RANDOMLY SELECTED QUESTIONS COULD BE UTILIZED. THESE TWO IMPROVEMENTS SIGNIFICANTLY INCREASED THE EFFECTIVENESS OF THE INSPECTOR TESTING PROGRAM. (ISAP I.D.2 RESULTS REPORT PG 16). CPRT, UNDER ISAP I.D.1, DETERMINED THAT THE TU ELECTRIC QC INSPECTOR CERTIFICATION PROGRAM, PARTICULARLY THE HISTORICAL ELECTRICAL QC CERTIFICATION PORTION, PRODUCED A NUMBER OF INSPECTORS WHO WERE CERTIFIED WITH QUESTIONABLE QUALIFICATIONS. THIS PROGRAM IMPROVED OVER TIME AS ILLUSTRATED BY THE FACT THAT INITIALLY, 93.9 PERCENT OF TU ELECTRIC HISTORICAL QC INSPECTORS WERE ACCEPTABLE COMPARED TO 99.4 PERCENT CURRENTLY.

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			THE CERTIFICATIONS OF 119 ELECTRICAL INSPECTORS WERE CHECKED. TWENTY-NINE OF THE CERTIFICATIONS WERE QULSTIONABLE. HOWEVER, CPRT DETERMINED THAT ONLY ONE OF THE 29 INSPECTORS HAD QUESTIONABLE CAPABILITIES TO CONDUCT REQUIRED INSPECTIONS. NO SAFETY-SIGNIFICANT PROBLEMS RESULTED FROM THIS INSPECTOR's WORK. FIVE ELECTRICAL INSPECTORS WHO CONDUCTED NON RECREATABLE CABLE PULLING INSPECTIONS WERE INDETERMINATE. AN UNCLASSIFIED TREND WAS IDENTIFIED FOR THESE INSPECTORS AND CORRECTIVE ACTION WAS RECOMMENDED TO DETERMINE THE IMPACT, IF ANY, ON THE ADEQUACY OF INSTALLED ELECTRICAL CABLE. CPRT OVERALL EVALUATION AND RESOLUTION OF THE CONCERNS FOR THE QC INSPECTION CERTIFICATION PROGRAM ARE SUMMARIZED UNDER ITEM 11.83D.
SSER: 07 ALLEG: AQE-04 ITEM: 07.07B-2	UNQUALIFIED INSPECTORS WERE TOLD TO CLOSE-OUT NCRs. REF. PG. J-55.	SEE ITEM 07.07A, AQE-08.	
SSER: 07 ALLEG: AQE-01 ITEM: 07.08A	AN ELECTRICAL INSPECTOR WAS PRESSURED NOT TO WRITE NONCONFORMANCE REPORTS (NCRS) IN SEVERAL INSTANCES. IN ONE CASE, A QC SUPERVISOR INSTRUCTED HIM NOT TO WRITE AN NCR FOR CONTROL ROOM CABLES THAT WERE REMOVED WITHOUT PROPER DOCUMENTATION. REF. PG. J-50.	TRT --- THE ALLEGATION OF IMPROPER DOCUMENTATION OF CABLE REMOVAL COULD NOT BE SUBSTANTIATED, BECAUSE IN ITS REVIEW OF A RANDOM SAMPLE OF 75 NONCONFORMANCE REPORTS (NCRs) ON THESE ISSUES, TRT COULD NOT IDENTIFY ANY INCONSISTENCIES OR DEFICIENCIES THAT WOULD RAISE A SAFETY QUESTION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	CPRT ---- SEE ITEM 11.84E AND 11.84F.
SSER: 07 ALLEG: AQE-02 ITEM: 07.08B	A CABLE WAS REMOVED FROM THE SAFEGUARDS BUILDING WITHOUT PROPER DOCUMENTATION. AN NCR WAS PREPARED, BUT IT WAS UNCERTAIN WHETHER THAT NCR WAS	TRT --- THE ALLEGATION OF IMPROPER DOCUMENTATION OF CABLE REMOVAL COULD NOT BE SUBSTANTIATED, BECAUSE IN THE REVIEW OF A RANDOM SAMPLE OF 75 NONCONFORMANCE REPORTS	CPRT ---- SEE ITEM 11.84E AND 11.84F.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
	FULLY GENERATED, PROCESSED, AND DISPOSITIONED. REF. PG. J-50.	(NCRs) ON THESE ISSUES, TRT COULD NOT IDENTIFY ANY INCONSISTENCIES OR DEFICIENCIES THAT WOULD RAISE A SAFETY QUESTION. TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	
SSER: 07 ALLEG: AQE-03 ITEM: 07.08C	AN INSPECTOR WAS TOLD TO CLOSE-OUT AN NCR THAT DESCRIBED REPAIR OF A FLEXIBLE CONDUIT IN THE FUEL HANDLING BUILDING WHEN THE CONDUIT HAD BEEN REPLACED RATHER THAN REPAIRED. REF. PG. J-49.	TRT --- TRT INTERVIEWED A TU ELECTRIC ELECTRICAL ENGINEER ABOUT DISPOSITIONS OF NONCONFORMANCE REPORTS (NCRs) WITH RESPECT TO REPLACE VERSUS REPAIR AND "COMPROMISED WORKMANSHIP" (AQE-48). TRT DETERMINED THAT REPLACING A REPORTED ITEM INSTEAD OF REPAIRING IT AS ORIGINALLY DISPOSITIONED WOULD REQUIRE A REVISION TO THE ORIGINAL NCR. THE DISPOSITION OF THE NCR FOR REPLACEMENT WOULD BE BASED ON AN ENGINEERING EVALUATION. TRT DETERMINED THAT ON A CASE-BY-CASE BASIS WHERE WORKMANSHIP MIGHT HAVE BEEN COMPROMISED, THE INSPECTING ENGINEER WOULD APPLY ENGINEERING JUDGMENT TO DETERMINE IF THE QUALITY OF WORKMANSHIP HAD DEGRADED THE INSTALLATION BELOW AN ACCEPTABLE LEVEL. FROM THE 75 NCRs EXAMINED, TRT COULD NOT FIND ANY EVIDENCE OF UNACCEPTABLE INSTALLATION. TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5,	CPRT ---- SEE ITEM 11.84E AND 11.84F.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	
SSER: 07 ALLEG: AQE-25 ITEM: 07.08E	ELECTRICAL QC INSPECTORS WERE REQUIRED TO SUBMIT DRAFT NCRS TO THEIR SUPERVISORS FOR APPROVAL IN CONTRADICTION OF SITE PROCEDURES. REF PG. J-49.	TRT --- THE ALLEGATION OF FAILURE TO FOLLOW PROCEDURES AND SPECIFICATIONS (AQE-25 AND AQE-40) COULD NOT BE SUBSTANTIATED, BECAUSE IN THE REVIEW OF A RANDOM SAMPLE OF 75 NONCONFORMANCE REPORTS (NCRs) ON THESE ISSUES, TRT COULD NOT IDENTIFY ANY INCONSISTENCIES OR DEFICIENCIES THAT WOULD RAISE A SAFETY QUESTION. TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE REPORTS, AS RELATED TO THE CONCERNS RAISED BY THIS ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	CPRT ---- SEE ITEM 11.84E AND 11.84F.
SSER: 07 ALLEG: AQE-33 ITEM: 07.08F	THERE WERE PREVALENT USE-AS-IS DISPOSITIONS WRITTEN FOR NCRS GENERATED WITH RESPECT TO THE ELECTRICAL ERECTION SPECIFICATION. REF. PG. J-49.	TRT --- OF THE 75 NONCONFORMANCE REPORTS (NCRs) EXAMINED, TRT COULD IDENTIFY NO USE-AS-IS DISPOSITIONS THAT DEVIATED FROM APPLICABLE DESIGN REQUIREMENTS, EXCEPT FOR THOSE IDENTIFIED IN ELECTRICAL AND INSTRUMENTATION CATEGORY 1, ELECTRICAL CABLE TERMINATIONS, AND ELECTRICAL AND INSTRUMENTATION CATEGORY 2, ELECTRICAL CABLE TRAY AND CONDUIT INSTALLATION. THE EXCEPTIONS CONCERNED NCRs ON BENT TERMINAL LUGS IN MOTOR CONTROL CENTERS (PART OF AQE-36) AND TWO LOOSE CONDUIT ELBOW FITTINGS (PART OF AE-27). TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE	CPRT ---- SEE ITEM 11.84E AND 11.84F.

COMANCHE PEAK RESPONSE TEAM (CPRT)
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EXTERNAL SOURCE ISSUES MATRIX

ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	
SSER: 07 ALLEG: AQE-34 ITEM: 07.08G	A CABLE JACKET WAS DAMAGED WHEN A BISCO SEAL WAS REMOVED USING A THREADED ROD. THE RESULTING NCR WAS DISPOSITIONED USE-AS-IS. REF. PG. J-49.	TRT --- OF THE 75 NONCONFORMANCE REPORTS (NCRs) EXAMINED, TRT COULD IDENTIFY NO USE-AS-IS DISPOSITIONS WHICH DEVIATED FROM APPLICABLE DESIGN REQUIREMENTS, EXCEPT FOR THOSE IDENTIFIED IN ELECTRICAL AND INSTRUMENTATION CATEGORY 1, ELECTRICAL CABLE TERMINATIONS, AND ELECTRICAL AND INSTRUMENTATION CATEGORY 2, ELECTRICAL CABLE TRAY AND CONDUIT INSTALLATION. THE EXCEPTIONS CONCERNED NCRs ON BENT TERMINAL LUGS IN MOTOR CONTROL CENTERS (PART OF AQE-36) AND TWO LOOSE CONDUIT ELBOW FITTINGS (PART OF AE-27). TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS. THE RESULTS OF THE TRT REVIEW OF NEW INFORMATION CONCERNING ALLEGATION AQE-34, WILL ALSO BE REPORTED IN A SUPPLEMENT TO THE SSER. (CLOSED BY NRC IN ITS	CPRT ---- SEE ITEM 11.84E AND 11.84F.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		JANUARY 21, 1988 LETTER)	
SSER: 07 ALLEG: AQE-35 ITEM: 07.08H	NON-Q FUSE BLOCKS WERE INSTALLED WHERE Q BLOCKS WERE REQUIRED. THE NCR WAS DISPOSITIONED USE-AS-IS BECAUSE BOTH TYPES OF BLOCKS WERE ORDERED UNDER THE SAME MATERIAL SPECIFICATION. REF. PG. J-49.	TRT --- OF THE 75 NONCONFORMANCE REPORTS (NCRs) EXAMINED, TRT COULD IDENTIFY NO USE-AS-IS DISPOSITIONS THAT DEVIATED FROM APPLICABLE DESIGN REQUIREMENTS, EXCEPT FOR THOSE IDENTIFIED IN ELECTRICAL AND INSTRUMENTATION CATEGORY 1, ELECTRICAL CABLE TERMINATIONS, AND ELECTRICAL AND INSTRUMENTATION CATEGORY 2, ELECTRICAL CABLE TRAY AND CONDUIT INSTALLATION. THE EXCEPTIONS CONCERNED NCRs ON BENT TERMINAL LUGS IN MOTOR CONTROL CENTERS (PART OF AQE-36) AND TWO LOOSE CONDUIT ELBOW FITTINGS (PART OF AE-27). TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS. THE RESULTS OF THE TRT REVIEW OF NEW INFORMATION CONCERNING ALLEGATION AQE-35 WILL ALSO BE REPORTED IN A SUPPLEMENT TO THE SSER. (CLOSED BY NRC IN ITS JANUARY 21, 1988 LETTER)	CPRT ---- SEE ITEM 11.84E AND 11.84F.
SSER: 07 ALLEG: AQE-37 ITEM: 07.08I	THE DISPOSITIONS OF NCRS INVOLVING REWORK OF TERMINAL BLOCKS WERE QUESTIONABLE. REF. PG. J-50.	TRT --- THE ALLEGATION OF REWORK OF TERMINAL BLOCKS COULD NOT BE SUBSTANTIATED, BECAUSE IN THE REVIEW OF A RANDOM SAMPLE OF 75 NONCONFORMANCE REPORTS (NCRs) ON THESE ISSUES, TRT COULD NOT IDENTIFY ANY INCONSISTENCIES OR DEFICIENCIES THAT WOULD RAISE A SAFETY QUESTION. THESE FINDINGS WERE DISCUSSED WITH SOME OF THE INDIVIDUALS RESPONSIBLE FOR RAISING THESE CONCERNS, ONE OF WHOM DISAGREED WITH THE TRT DETERMINATION AND PROVIDED ADDITIONAL INFORMATION. TRT WAS TO EVALUATE THIS NEW	CPRT ---- SEE ITEM 11.84E AND 11.84F.

COMANCHE PEAK RESPONSE TEAM (CPRT)
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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		INFORMATION AND REPORT THE RESULTS IN A SUPPLEMENT TO THE SSER. (CLOSED BY NRC IN ITS JANUARY 21, 1988 LETTER). TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	
SSER: 07 ALLEG: AQE-40 ITEM: 07.08K	SOME NCRS WERE CLOSED OUT BY STATING THAT THE NONCONFORMING CONDITION WAS NOT ADDRESSED IN THE ELECTRICAL ERECTION SPECIFICATION. REF. PG. J-49.	SEE ITEM 07.08E, AQE-25.	
SSER: 07 ALLEG: AQE-45 ITEM: 07.08N	THERE WERE QUESTIONABLE DISPOSITIONS FOR NCRS INVOLVING INADEQUATE THREAD ENGAGEMENT BETWEEN A CONDUIT FITTING AND DAMAGED CABLE. REF. PG. J-49.	TRT --- THE ALLEGATION OF DAMAGED CABLE DUE TO INADEQUATE THREAD ENGAGEMENT ON A CONDUIT COULD NOT BE SUBSTANTIATED, BECAUSE IN THE REVIEW OF A RANDOM SAMPLE OF 75 NONCONFORMANCE REPORTS (NCRs) ON THESE ISSUES, TRT COULD NOT IDENTIFY ANY INCONSISTENCIES OR DEFICIENCIES THAT WOULD RAISE A SAFETY QUESTION. TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE	CPRT ---- SEE ITEM 11.84E AND 11.84F.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		SUBJECTS.	
SSER: 07 ALLEG: AQE-47 ITEM: 07.08O	MANY NCRS WERE DISPOSITIONED USE-AS-IS-. REF. PG. J-49.	TRT --- OF THE 75 NONCONFORMANCE REPORTS (NCRs) EXAMINED, TRT COULD IDENTIFY NO USE-AS-IS DISPOSITIONS THAT DEVIATED FROM APPLICABLE DESIGN REQUIREMENTS, EXCEPT FOR THOSE IDENTIFIED IN ELECTRICAL AND INSTRUMENTATION CATEGORY 1, ELECTRICAL CABLE TERMINATIONS, AND ELECTRICAL AND INSTRUMENTATION CATEGORY 2, ELECTRICAL CABLE TRAY AND CONDUIT INSTALLATION. THE EXCEPTIONS CONCERNED NCRs ON BENT TERMINAL LUGS IN MOTOR CONTROL CENTERS (PART OF AQE-36) AND TWO LOOSE CONDUIT ELBOW FITTINGS (PART OF AE-27). TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATION. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	CPRT ---- SEE ITEM 11.84E AND 11.84F.
SSER: 07 ALLEG: AQE-48 ITEM: 07.08P	SOME NCR EVALUATIONS INACCURATELY DESCRIBED WORKMANSHIP AS "NOT COMPROMISED" WHEN IT HAD BEEN POOR. REF. PG. J-49.	TRT --- TRT INTERVIEWED A TU ELECTRIC ELECTRICAL ENGINEER ABOUT DISPOSITIONS OF NONCONFORMANCE REPORTS (NCRs) WITH RESPECT TO COMPROMISED WORKMANSHIP. TRT DETERMINED THAT ON A CASE-BY-CASE BASIS WHERE WORKMANSHIP MIGHT HAVE BEEN COMPROMISED, THE INSPECTING ENGINEER WOULD APPLY ENGINEERING JUDGMENT TO DETERMINE IF THE QUALITY OF WORKMANSHIP HAD DEGRADED THE INSTALLATION BELOW AN ACCEPTABLE LEVEL. FROM THE 75 NCRs EXAMINED, TRT COULD NOT FIND ANY EVIDENCE OF UNACCEPTABLE INSTALLATION. TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED	CPRT ---- SEE ITEM 11.84E AND 11.84F.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATIONS. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	
SSER: 07 ALLEG: AE-24 ITEM: 07.08Q	A CABLE TRAY SUPPORTED BY A TEMPORARY HANGER FELL, DAMAGING INSTRUMENTATION CABLES ENTERING THE CONTROL ROOM. REF. PG. J-49.	TRT --- THE ALLEGATION OF DAMAGED CABLE AS A RESULT OF A FALLEN CABLE TRAY COULD NOT BE SUBSTANTIATED, BECAUSE IN THE REVIEW OF A RANDOM SAMPLE OF 75 NONCONFORMANCE REPORTS (NCRs) ON THESE ISSUES, TRT COULD NOT IDENTIFY ANY INCONSISTENCIES OR DEFICIENCIES THAT WOULD RAISE A SAFETY QUESTION. TRT CONCLUDED THAT ADEQUATE PROCEDURES, CONTROLS, AND PROCESS CHECKS EXISTED FOR THE GENERATION AND DISPOSITION OF REPORTED ITEMS OF NONCONFORMANCE AS RELATED TO THE CONCERNS RAISED BY THE ABOVE ALLEGATIONS. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW OF ALL NCRs, ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS, AND UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULT OF THE OVERALL PROGRAMMATIC REVIEW ON THESE SUBJECTS.	CPRT ---- SEE ITEM 11.84E AND 11.84F.
SSER: 07 ALLEG: AE-50 ITEM: 07.08T-2	CABLES IN THE CABLE SPREADING ROOM WERE SPLICED IN VIOLATION OF REGULATORY REQUIREMENTS. REF. PG. J-59.	TRT --- THE ALLEGATION INVOLVED THE ALLEGED SPLICING OF SAFETY-RELATED CABLES IN RACEWAYS IN VIOLATION OF REGULATORY REQUIREMENTS. TRT REVIEWED NRC REGION IV (RIV) INSPECTION REPORT (IR) 83-03 AND FOUND THAT THE	CPRT ---- UNDER ISAP VII.C, CPRT REINSPECTED 95 CABLE SAMPLES TO IDENTIFY UNDOCUMENTED SPLICES AND VERIFY THAT SPLICES WERE LOCATED IN EQUIPMENT ENCLOSURES OR SPLICE BOXES. NO DEVIATIONS WERE REPORTED. (ISAP VII.C RESULTS REPORT, APPENDIX 3, PG 18).

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		RIV INVESTIGATION OF THE TWO CABLES SPECIFICALLY IDENTIFIED BY THE ALLEGER ADEQUATELY ADDRESSED THIS ALLEGATION. THE RIV INVESTIGATION DETERMINED THAT ONE CABLE NO LONGER PERFORMED A SAFETY-RELATED FUNCTION, AND THE OTHER CABLE HAD BECOME A SPARE AND WAS REMOVED FROM THE RACEWAY. TRT DETERMINED THAT SIMILAR-APPEARING ITEMS IN THE SAME AREA WERE NOT SPLICES, BUT WERE, IN FACT, ACCEPTABLE METHODS OF REPAIRING MINOR CABLE JACKET DAMAGE. TRT CONCURRED WITH THE RIV DETERMINATION, BUT NOTED THAT REGULATORY REQUIREMENTS DISCOURAGE THE USE OF SPLICES IN RACEWAYS, AS STATED IN POSITION 9 OF REGULATORY GUIDE (RG) 1.75, PHYSICAL INDEPENDENCE OF ELECTRICAL SYSTEMS. IF SPLICES ARE MADE, THE RESULTING DESIGN SHOULD BE JUSTIFIED BY ANALYSIS. THIS AREA IS FURTHER ADDRESSED UNDER QA/QC CATEGORY 8, AS BUILT.	
SSER: 07 ALLEG: AE-28 ITEM: 07.09B	CABLES WERE NOT TRAINED BY USE OF GOOD WORKMANSHIP IN UNIT 1 CABLE SPREADING ROOM AND JUNCTION BOXES 1058&1059. AN NCR DISPOSITIONED THIS CONDITION AS ACCEPTABLE BECAUSE OF PROPER CABLE BEND RADII,BUT WORKMANSHIP PROBLEM WASN'T ADDRESSED. REF. PG J-59	TRT --- THE ALLEGATION INVOLVED INSTANCES OF IMPROPER CABLE TRAINING (OR DRESSING) AND POOR WORKMANSHIP IN CABLE INSTALLATION. JUNCTION BOXES 1058 AND 1059 WERE INSPECTED BY TRT TO CHECK FOR IMPROPER TRAINING OF CABLES AND POOR WORKMANSHIP. TRT FINDINGS AGREED WITH THE PREVIOUS NRC REGION IV DETERMINATION THAT THESE CABLES, WHICH WERE NONSAFETY-RELATED, WERE PROPERLY TRAINED AND THAT THEY EXHIBITED AN ACCEPTABLE DEGREE OF WORKMANSHIP. THESE FINDINGS WERE DISCUSSED WITH THE ALLEGER WHO INDICATED THAT THE JUNCTION BOX NUMBERS MAY NOT HAVE BEEN CORRECT AND PROVIDED ADDITIONAL INFORMATION CONCERNING THE LOCATION OF THE BOXES IN THE PLANT. TRT IS CURRENTLY EVALUATING THIS NEW INFORMATION AND WILL REPORT THE RESULTS IN A SUPPLEMENT TO THE SSER.	
SSER: 07 ALLEG: AT-02 ITEM: 07.10B	SIGNIFICANT MODIFICATIONS HAVE BEEN MADE OR PLANNED WHICH INVALIDATE THE HOT FUNCTIONAL TEST. REF. PG. J-69.	TRT --- TRT FOUND THAT WHILE SOME COMPONENTS AND EQUIPMENT WERE NOT INSTALLED DURING THE INITIAL HOT FUNCTIONAL TEST, THEY WERE DOCUMENTED AND TRACKED TO BE INCLUDED IN THE DEFERRED PREOPERATIONAL TESTING. ALSO SOME 74 MODIFICATIONS, MOSTLY TO HANGERS, SNUBBERS, AND OTHER PIPE SUPPORTS, REQUIRED HOT PLANT CONDITIONS FOR VALID	CPRT ---- CPRT, UNDER ISAP III A.2, REVIEWED THE FSAR TO ENSURE THAT THE COMMITMENT FOR SORC TO REVIEW DEFERRED PREOPERATIONAL TEST DATA WAS INCLUDED, AND CPRT REVIEWED STATION PROCEDURES TO ENSURE THAT THE FSAR COMMITMENT WAS ADDRESSED. CPRT DETERMINED THAT THE COMMITMENT FOR SORC TO REVIEW DEFERRED PREOPERATIONAL TEST DATA WAS ADDED TO THE FSAR BY AMENDMENT 54 AND WAS ADDRESSED IN CPSES

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		RETESTING. TRT FOUND THAT TU ELECTRIC's PLAN TO COMPLETE HOT FUNCTIONAL TESTING APPEARED TECHNICALLY SOUND AND WITHOUT SAFETY IMPLICATIONS. ACTION REQUIRED --- TU ELECTRIC HAD INFORMED TRT THAT THE STATION OPERATION REVIEW COMMITTEE (SORC) WILL REVIEW DEFERRED PREOPERATIONAL TEST DATA. BECAUSE THE REVIEW OF DATA OBTAINED FROM THE DEFERRED PREOPERATIONAL TESTS IS A FUNCTION OF THE SORC, TU ELECTRIC SHALL AMEND THE FSAR TO REFLECT THEIR COMMITMENT TO TRT THAT THE SORC AND NOT THE JOINT TEST GROUP (JTG) WILL PERFORM THESE REVIEWS. THIS REQUIREMENT, NOT INCLUDED IN THE SEPTEMBER 18, 1984, LETTER TO TU ELECTRIC, IS NECESSARY BECAUSE THE CURRENT VERSION OF THE FSAR STATES THAT THE JTG IS RESPONSIBLE FOR REVIEWING PREOPERATIONAL TEST DATA.	PROCEDURES. (ISAP III.A.2 RESULTS REPORT PG. 5 AND 7). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG: AT-04 ITEM: 03.10D	NEITHER TUEC NOR NRC REGION IV STAFF NOTICED THAT MAJOR COMPONENTS AND EQUIPMENT WERE NOT INSTALLED PRIOR TO THE HOT FUNCTIONAL TEST. REF. PG. J-69.	TRT --- TRT FOUND THAT THERE WAS NO EVIDENCE THAT EITHER TU ELECTRIC OR THE NRC REGION IV STAFF WAS WILLING TO ACCEPT DEFICIENT TEST RESULTS OR THAT EITHER HAD EXHIBITED A LACK OF CANDOR IN IDENTIFYING PROBLEMS DURING THE HOT FUNCTIONAL TEST. TRT DETERMINED THAT ABOUT FIFTY PERCENT OF THE MONITORING LOCATIONS STILL REQUIRED MEASUREMENTS AFTER THE THERMAL EXPANSION TEST WAS COMPLETED. THIS WAS DUE TO TEST POINTS FAILING ACCEPTANCE CRITERIA, EQUIPMENT REMOVED OR MISSING DURING THE TEST, AND EQUIPMENT MODIFIED AFTER THE TEST. ALSO, THE SPECIFIC MEASURING DEVICE USED AT EACH MONITORING LOCATION WAS NOT IDENTIFIED IN THE TEST DATA PACKAGE BUT WAS CONTAINED IN A LOG HELD BY TU ELECTRIC. TRT ADVISED TU ELECTRIC THAT THE INFORMATION RELATING MEASURING DEVICES TO MONITORING LOCATIONS MUST BE IN THE DATA PACKAGE.	CPRT ---- CPRT, UNDER ISAP III.A.4, REVIEWED THE DATA PACKAGE FOR THE THERMAL EXPANSION TEST AND FOUND THAT THE INFORMATION REQUESTED BY TRT HAD BEEN INSERTED. THE INFORMATION WAS ON CALIBRATION DATA SHEETS, WHICH WERE IN THE TEST DATA PACKAGE, BUT HAD NOT BEEN INSERTED ON THE DIGITAL THERMOMETER CALIBRATION RECORD. TRANSCRIBING THE DATA FROM THE CALIBRATION DATA SHEETS TO THE CALIBRATION RECORD RESOLVED THE CONCERN. CPRT REVIEWED AN ADDITIONAL 27 PREOPERATIONAL TEST DATA PACKAGES UNDER ISAP III.A.1 AND FOUND DOCUMENTATION OF MEASURING AND TEST EQUIPMENT TO BE IN ACCORDANCE WITH REQUIREMENTS. (ISAP III.A.4 RESULTS REPORT PG. 9). THE CPRT RESULTS RESOLVE THIS ISSUE.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
SSER: 07 ALLEG: AT-06 ITEM: 07.10F	THE WILLINGNESS OF BOTH THE APPLICANT AND THE NRC REGION IV STAFF TO ACCEPT NOT FUNCTIONAL TEST RESULTS WHICH ARE DEFICIENT MAKES IT IMPOSSIBLE TO RELY ON THE TEST RESULTS TO PROVE CPSES IS SAFE. REF. PG. J-69.	TRT --- TRT FOUND NO EVIDENCE THAT EITHER TU ELECTRIC OR THE NRC REGION IV STAFF WAS WILLING TO ACCEPT DEFICIENT TEST RESULTS OR THAT EITHER HAD EXHIBITED A LACK OF CANDOR IN IDENTIFYING PROBLEMS DURING THE HOT FUNCTIONAL TEST (HFT). TRT IDENTIFIED THREE PREOPERATIONAL TESTS CONDUCTED DURING HFT THAT WERE NOT COMPLETED TO THE OBJECTIVES STATED IN TEST PROCEDURES. ACTIONS REQUIRED --- SECTION 4(6), PAGES J-73 THROUGH J-76, SSER-7, REFERS TO THREE PREOPERATIONAL TESTS CONDUCTED DURING HFT THAT TRT DETERMINED WERE NOT COMPLETED TO THE EXTENT REQUIRED BY THE OBJECTIVES STATED IN THE TEST PROCEDURES. ACCORDINGLY, TU ELECTRIC SHALL REVIEW ALL COMPLETED PREOPERATIONAL TEST DATA PACKAGES TO ENSURE THERE ARE NO OTHER INSTANCES WHERE TEST OBJECTIVES WERE NOT MET, OR PREREQUISITE CONDITIONS WERE NOT SATISFIED. THE FOUR ITEMS IDENTIFIED BY THE TRT STAFF SHALL BE ADDRESSED, WITH APPROPRIATE RESOLUTION, IN THE DEFERRED PREOPERATIONAL TESTS.	CPRT --- CPRT IN IMPLEMENTING ISAP III.A.1 REVIEWED STARTUP ADMINISTRATIVE PROCEDURES, REVIEWED THE JOINT TEST GROUP's (JTG) DISPOSITION OF TEST DEFICIENCY REPORTS, AND EVALUATED THE TEST DEFICIENCY AND TEST PROCEDURE DEVIATION PROCESS USING RANDOM SAMPLING. CPRT CONCLUDED THAT THERE IS REASONABLE ASSURANCE THAT THE OBJECTIVES OF THE PREOPERATIONAL TEST PROGRAM HAVE BEEN MET AND WILL CONTINUE TO BE MET. FURTHER, THE ATTAINMENT OF TEST OBJECTIVES HAS NOT BEEN COMPROMISED BY INAPPROPRIATE ACTION BY EITHER THE STARTUP ORGANIZATION OR JOINT TEST GROUP (JTG). (ISAP III.A.1 RESULTS REPORT, PG. 31). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG. AT-17 ITEM: 07.10L-1	TRACEABILITY OF MEASURING DEVICES FOR THERMAL EXPANSION TEST WAS LOST. REF. PG J-72.	TRT --- ALTHOUGH TEMPERATURES WERE TAKEN AND LOGGED DURING ICP-PT-55-11, THERMAL EXPANSION, THE SPECIFIC MEASURING DEVICE USED AT EACH MONITORING LOCATION WAS NOT AVAILABLE IN THE TEST DATA PACKAGE. HOWEVER, INFORMATION THAT TIED THE DEVICES TO SPECIFIC MONITORING LOCATIONS WAS AVAILABLE IN A LOG THAT WAS NOT PART OF THE TEST DATA PACKAGE. ACTIONS REQUIRED --- TRT DETERMINED THAT ICP-PT-55-11, THERMAL EXPANSION, DID NOT INCLUDE INFORMATION NEEDED TO TRACE THE MEASURING DEVICES TO THE MONITORED LOCATIONS, ALTHOUGH	CPRT --- THE TEST PACKAGE FOR ICP-PT-55-11 HAD BEEN PREPARED AND WAS IN THE PROCESS OF BEING REVIEWED BY THE STARTUP ORGANIZATION PRIOR TO SUBMISSION TO THE JOINT TEST GROUP (JTG) WHEN TRT CHECKED THE PACKAGE. WHEN TRT EXPRESSED CONCERN THAT THE SPECIFIC MEASURING DEVICE USED AT EACH MONITORING LOCATION WAS NOT AVAILABLE IN THE TEST DATA PACKAGE, THE STARTUP ORGANIZATION REVISED THE PACKAGE TO INCLUDE THE INFORMATION. THE PACKAGE WAS SUBSEQUENTLY REVIEWED AND APPROVED BY THE JTG. (ISAP III.A.4 RESULTS REPORT PG 2 AND 7). CPRT, UNDER ISAP III.A.4, REVIEWED THE TEST DATA PACKAGE AND DETERMINED THAT THE TABLE DESIGNED TO CONTAIN INFORMATION TO TRACE MEASURING AND TEST EQUIPMENT (M&TE) WAS BLANK WHEN TRT REVIEWED THE PACKAGE. THE INFORMATION WAS AVAILABLE, HOWEVER, IN THE

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		THE INFORMATION WAS AVAILABLE IN A LOG MAINTAINED BY TU ELECTRIC. TU ELECTRIC SHALL INCORPORATE THE INFORMATION CONTAINED IN THE LOG INTO THE OFFICIAL ICP-PT-55-11 DATA PACKAGE SO THAT TRACEABILITY IS MAINTAINED, AND SHALL ALSO ESTABLISH ADMINISTRATIVE CONTROLS TO ASSURE APPROPRIATE TEST AND MEASURING EQUIPMENT TRACEABILITY DURING FUTURE TESTING AND PLANT OPERATION.	MISCELLANEOUS SECTION OF THE PACKAGE. THE SYSTEM TEST ENGINEER HAD FAILED TO FILL OUT THE TABLE. THIS WAS DONE AFTER TRT EXPRESSED THEIR CONCERN. (ISAP III.A.4 RESULTS REPORT PG 7 AND 8). CPRT REVIEWED APPLICABLE CPSES STATION ADMINISTRATIVE PROCEDURES AND DETERMINED THAT THE REQUIREMENTS FOR TRACING M&TE WERE ADEQUATELY ADDRESSED. THE PROCEDURES REQUIRED THAT THE IDENTIFICATION AND CALIBRATION INFORMATION FOR M&TE USED TO OBTAIN ACCEPTANCE DATA BE ENTERED ON PERMANENT TEST RESULT RECORDS. TO PROVIDE AN ADDED MEASURE OF ASSURANCE THAT APPLICABLE REQUIREMENTS CONCERNING M&TE WERE BEING PROPERLY IMPLEMENTED, A REVIEW OF OTHER TEST DATA PACKAGES WERE UNDERTAKEN IN CONJUNCTION WITH ISAP III.A.1. TWENTY-SEVEN PACKAGES WERE REVIEWED AND ALL WERE FOUND TO MEET PROCEDURAL REQUIREMENTS. (ISAP III.A.4 RESULTS REPORT PG 4 AND 10). CPRT CONCLUDED THAT TRACEABILITY OF MEASURING DEVICES TO MONITORED LOCATIONS NOW EXISTS IN THE ICP-PT-55-11 DATA PACKAGE AND THAT ADMINISTRATIVE CONTROLS ARE IN PLACE TO ENSURE TRACEABILITY OF TEST AND MEASURING EQUIPMENT DURING FUTURE TEST AND PLANT OPERATIONS. (ISAP III.A.4 RESULTS REPORT PG 9 AND 11). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG: AT-07 ITEM: 07.11	PROBLEMS REVEALED BY THE HOT FUNCTIONAL TEST, AND RELATED CONTAINMENT AND LEAK-RATE TESTS, ARE SO EXTENSIVE AND OF SUCH MAGNITUDE THAT THEY MUST BE CORRECTED BEFORE FUEL LOAD. REF. PG. J-81.	TRT --- TRT REVIEWED THE PROCEDURE FOR THE CONTAINMENT INTEGRATED LEAK RATE TEST (CILRT) AND THE RESULTANT TEST DATA TO DETERMINE IF THE TEST WAS IN COMPLIANCE WITH 10CFR50, APPENDIX J, AND PROPOSED TECHNICAL SPECIFICATIONS. TRT DETERMINED THAT, AS ALLEGED, NUMEROUS LEAKS WERE DETECTED DURING THE FIRST TWO ATTEMPTS TO MEASURE THE CONTAINMENT BUILDING LEAKAGE RATE. THESE LEAKS WERE CORRECTED, EXCEPT FOR THREE ELECTRICAL PENETRATIONS WHICH WERE ISOLATED. THE THIRD ATTEMPT WAS CONSIDERED SATISFACTORY. THE MEASURED LEAKAGE RATES FROM THE THREE REPAIRED ELECTRICAL PENETRATIONS AND THE FOUR PENETRATIONS USED TO CONDUCT THE TEST WERE ADDED TO THE MEASURED LEAKAGE RATE FROM THE CILRT. THE TOTAL RESULTANT LEAKAGE RATE WAS LESS THAN THAT ALLOWED BY 10CFR50, APPENDIX J, AND PROPOSED TECHNICAL SPECIFICATIONS. TRT, HOWEVER, WAS CONCERNED THAT THE METHOD OF	CPRT ---- CPRT, UNDER ISAP III.B, REVIEWED ADMINISTRATIVE PROCEDURES OF THE STARTUP ORGANIZATION FOR ADHERENCE TO FSAR COMMITMENTS. SIX PROCEDURES WERE REVIEWED. THREE OF THE PROCEDURES CONTAINED REFERENCES TO FSAR COMMITMENTS. THIS INDICATED THAT THE NEED TO ADDRESS COMMITMENTS WAS RECOGNIZED SINCE THE INCEPTION OF THE CPSES STARTUP PROGRAM. THE REMAINING THREE PROCEDURES WERE MODIFIED AFTER THE TRT REVIEW TO INCLUDE REFERENCES TO APPLICABLE FSAR COMMITMENTS. THESE MODIFICATIONS INCLUDED INSTRUCTIONS FOR INITIATING AND TRACKING FSAR CHANGES, FOR CHECKING CHANGES TO THE INTENT OF TEST PROCEDURES AGAINST FSAR COMMITMENTS, AND FOR SATISFYING FSAR COMMITMENTS DURING REVIEWS OF TEST DATA PACKAGES. (ISAP III.B RESULTS REPORT PG 5 AND 6). CPRT RANDOMLY SELECTED NINETY-FIVE PREOPERATIONAL TESTING-RELATED FSAR COMMITMENTS AND CHECKED THAT THOSE COMMITMENTS WERE COMPLIED WITH BY REVIEWING DOCUMENTATION IN TEST DATA PACKAGES. ALL THE COMMITMENTS WERE FOUND TO HAVE BEEN MET. (ISAP III.B RESULTS REPORT PG 7).

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		CALCULATING THE LEAKAGE RATE WAS IN ACCORDANCE WITH ANSI/ANS 56.8-1981 INSTEAD OF ANSI N45.4-1972 AS PRESCRIBED BY THE FSAR, AND THAT THE THREE ELECTRICAL PENETRATIONS WERE ISOLATED WITHOUT NRC APPROVAL. THESE ITEMS, WHICH WERE TECHNICALLY INSIGNIFICANT WITH RESPECT TO THE TEST RESULTS, WERE REFERRED TO THE OFFICE OF NUCLEAR REACTOR REGULATION (NRR). NRR REQUESTED ADDITIONAL INFORMATION FROM TU ELECTRIC BY FSAR QUESTION Q022.22. TU ELECTRIC PROVIDED THAT INFORMATION AND APPROPRIATE CHANGES TO THE FSAR IN AMENDMENT 54 BY LETTER OF DECEMBER 21, 1984. NRR CONCLUDED THAT THESE MATTERS WERE RESOLVED AS REFLECTED IN ITEM (36), SECTION 1.7, OF COMANCHE PEAK SSER-6. TRT STATED THAT THE FAILURE TO REPORT THE DEVIATION FROM AN FSAR COMMITMENT TO NRC COULD BE INDICATIVE OF A GENERIC WEAKNESS. ACTION REQUIRED --- PRIOR TO FUEL LOADING, TU ELECTRIC SHALL IDENTIFY ALL OTHER DEVIATIONS FROM FSAR COMMITMENTS WHICH HAVE NOT BEEN IDENTIFIED PREVIOUSLY TO THE NRC.	CPRT ALSO DETERMINED THAT AFTER HOT FUNCTIONAL TESTING, THE JOINT TEST GROUP RECOGNIZED THAT SOME PREOPERATIONAL TESTING COMMITMENTS DESCRIBED IN THE FSAR WOULD NOT BE MET. A PROGRAM OF DEFERRED PREOPERATIONAL TESTING WAS ORGANIZED. THE PROGRAM INCLUDED EVALUATING PREOPERATIONAL COMMITMENTS, EVALUATING THE CONSEQUENCES OF DEFERRING TESTS, AND SEEKING APPROVAL OF NRR WHERE NECESSARY. THIS PROGRAM HAD BEEN IMPLEMENTED BEFORE THE TRT REVIEW. (ISAP III.B RESULTS REPORT PG 6). CPRT CONCLUDED, THEREFORE, THAT THERE IS REASONABLE ASSURANCE THAT THE PREOPERATIONAL TEST PROGRAM HAS BEEN, AND IS BEING, CONDUCTED IN ACCORDANCE WITH THE COMMITMENTS PRESENTED IN THE FSAR. (ISAP III.B RESULTS REPORT PG 7 AND 8). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG: AT-14 ITEM: 07.12	UNQUALIFIED CRAFT PERSONNEL PERFORMED PREREQUISITE TESTING, STEs SIGNED FOR TESTS NOT OBSERVED, AND DOCUMENTATION MADE TO APPEAR THAT STEs INSTEAD OF CRAFT PERSONNEL PERFORMED TESTS. REF. PG J-85	TRT --- PREREQUISITE TESTING IS PERFORMED TO VERIFY THE COMPLETE INSTALLATION, CLEANLINESS, AND INITIAL OPERABILITY OF INDIVIDUAL PLANT COMPONENTS. THIS TESTING INVOLVES CHECKS OF ELECTRICAL RESISTANCE, TRANSFORMER POLARITY, RELAY AND CIRCUIT BREAKER OPERATION, MOTOR ROTATION, INITIAL PUMP OPERATION, SYSTEM CLEANLINESS, AND PIPE SUPPORT ADJUSTMENTS. CRAFT PERSONNEL WHO WERE NOT QUALIFIED TO ANSI N45.2.6 STANDARDS WERE USED TO ASSIST WITH PREREQUISITE TESTING ACTIVITIES. THIS IS PERMITTED BY ANSI N45.2.6 AS AUGMENTED BY REGULATORY GUIDE (RG) 1.58. THESE PEOPLE CAN TAKE DATA AND OPERATE EQUIPMENT PROVIDED THEY ARE SUPERVISED BY QUALIFIED INDIVIDUALS AND HAVE SUFFICIENT KNOWLEDGE TO ENSURE AN ACCEPTABLE LEVEL OF	CPRT ---- CPRT, UNDER ISAP III.c, REVIEWED STARTUP INTEROFFICE MEMORANDA (SIMs) TO IDENTIFY ANY CONFLICTS WITH STARTUP ADMINISTRATIVE PROCEDURES, AND ASSESSED THE IMPACT ON TESTING OF RECORDS THAT MAY HAVE HAD INITIAL CONDITIONS SIGNED AS COMPLETE BY CRAFT PERSONNEL. CPRT CONFIRMED THAT A SIM WAS ISSUED IN MARCH 1983 THAT INSTRUCTED CRAFT PERSONNEL TO VERIFY THE PREREQUISITES FOR MEGGER/HI POT TESTING AND MOLDED CASE CIRCUIT BREAKER AND THERMAL OVERLOAD RELAY/HEATER TESTING. THESE INSTRUCTIONS CONFLICTED WITH THOSE IN A STARTUP ADMINISTRATIVE PROCEDURE THAT REQUIRED STEs TO VERIFY INITIAL CONDITIONS FOR PREREQUISITE TESTS. THE SIM WAS RESCINDED ON SEPTEMBER 25, 1984. (ISAP III.C RESULTS REPORT PG 5-7 AND 10). CPRT VERIFIED, BY REVIEWING CORRESPONDENCE FROM TWO SYSTEMS USED BY THE STARTUP ORGANIZATION, THAT INSTRUCTIONS TO STEs WOULD HAVE

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		PERFORMANCE. TRT FOUND THAT THE CRAFT PERSONNEL USED TO ASSIST WITH PREREQUISITE TEST ACTIVITIES WERE APPROPRIATELY INDOCTRINATED IN THE ADMINISTRATIVE AND PREREQUISITE TEST PROCEDURES APPLICABLE TO THEIR WORK, PERFORMED WORK UNDER SYSTEM TEST ENGINEER (STE) SUPERVISION, AND PERFORMED WORK THAT WAS WITHIN JOURNEYMAN LEVEL OF EXPERTISE. CRAFT PERSONNEL MAY NOT HAVE BEEN UNDER THE CONSTANT SUPERVISION OF AN STE DURING PREREQUISITE TESTING, BUT THIS IS NOT REQUIRED BY ANSI N45.2.6 OR RG 1.58. TRT CONSIDERED THAT ADEQUATE TECHNICAL SUPERVISION AND OVERSIGHT WERE BEING EXERCISED. TRT DID NOT FIND THAT TEST DOCUMENTATION WAS MADE TO LOOK AS IF AN STE PERFORMED THE TEST WHEN THE TEST WAS ACTUALLY PERFORMED BY CRAFT PERSONNEL. TRT FOUND THAT WHEN CRAFT PERSONNEL TOOK AND RECORDED TEST DATA, THEY SIGNED THE ENTRIES. THE SIGNATURES OF STEs ON DATA SHEETS INDICATED THAT THE DATA HAD BEEN EVALUATED AGAINST ACCEPTANCE CRITERIA BY THE STE AND WAS FOUND TO BE SATISFACTORY. TRT CONSIDERED THE PRACTICE OF USING CRAFT PERSONNEL TO ASSIST WITH PREREQUISITE TESTING TO BE CONSISTENT WITH APPLICABLE INDUSTRY GUIDES AND STANDARDS AND IN CONFORMANCE WITH FSAR COMMITMENTS. TRT WILL FURTHER ASSESS THE CONCERN ABOUT THE INADEQUATE QUALIFICATIONS OF PREOPERATIONAL TEST PERSONNEL AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 4, TRAINING AND QUALIFICATION. TRT FOUND SOME DATA SHEETS THAT CRAFT PERSONNEL HAD SIGNED VERIFYING INITIAL CONDITIONS FOR SOME PREREQUISITE TESTS INSTEAD OF STEs AS REQUIRED BY PROCEDURE. FURTHER INVESTIGATION REVEALED A MEMORANDUM ISSUED BY THE LEAD STARTUP ENGINEER THAT ALLOWED CRAFT PERSONNEL TO VERIFY INITIAL CONDITIONS. ACTIONS REQUIRED --- TU ELECTRIC SHALL RESCIND MEMORANDUM STM-83084 OF	BEEN PROVIDED BY SIMs. SEVEN HUNDRED AND NINE SIMs ISSUED BETWEEN FEBRUARY 1982 AND NOVEMBER 1984, WERE REVIEWED TO IDENTIFY ANY INSTRUCTIONS THAT CONFLICTED WITH ADMINISTRATIVE PROCEDURES. NO CONFLICTS WERE IDENTIFIED. (ISAP III.C RESULTS REPORT PG 8). SOME 23,000 APPROVED DATA SHEETS FROM PREREQUISITE TESTS WERE REVIEWED TO IDENTIFY SHEETS THAT HAD INITIAL TEST CONDITIONS SIGNED AS COMPLETE BY CRAFT PERSONNEL. SOME 2,600 SHEETS WERE SO SIGNED. MOST OF THE SHEETS WERE INVOLVED WITH ELECTRICAL TESTS AND DOCUMENTED THE VERIFICATION THAT OTHER REQUIRED PREREQUISITE TESTS HAD BEEN COMPLETED BEFORE COMMENCING SUBSEQUENT TESTS. CPRT CONCLUDED THAT STEs ALLOWED CRAFT PERSONNEL TO VERIFY INITIAL CONDITIONS FOR TESTS THAT WERE ROUTINE AND CONSISTENT WITH THE CAPABILITIES OF THE CRAFT PERSONNEL ASSIGNED. TEST DEFICIENCY REPORTS WERE PREPARED FOR THE SHEETS BELONGING TO THE NINETEEN PREREQUISITE TEST INSTRUCTIONS INVOLVED. EVALUATIONS DOCUMENTED ON THOSE DEFICIENCY REPORTS SUPPORT THE CONCLUSION THAT THE VALIDATION BY CRAFT PERSONNEL OF INITIAL CONDITIONS FOR PREREQUISITE TESTS WOULD HAVE NO IMPACT ON THE VALIDITY OF TEST RESULTS IN SUBSEQUENT TESTING. (ISAP III.C RESULTS REPORT PG 8-12). CPRT, THEREFORE, CONCLUDED THAT THERE IS REASONABLE ASSURANCE THAT THERE WERE NO IMPACTS ON REQUIRED PREREQUISITE OR PREOPERATIONAL TESTING DUE TO STARTUP SUPPORT PERSONNEL PERFORMING VERIFICATIONS OF INITIAL CONDITIONS FOR PREREQUISITE TESTS FOR WHICH THEY WERE NOT ADMINISTRATIVELY AUTHORIZED. (ISAP III.C RESULTS REPORT PG 14). THE CPRT RESOLUTION OF ISSUES RELATED TO TRAINING AND QUALIFICATION IS SUMMARIZED UNDER ITEM 11.6.3.D. THE CONCERN ABOUT INADEQUATE QUALIFICATIONS OF PREOPERATIONAL TEST PERSONNEL WAS NOT SUBSTANTIATED. THE CPRT RESULTS RESOLVE THIS ISSUE.

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		MARCH 31, 1983, WHICH WAS ISSUED IN CONFLICT WITH CP-SAP-21, AND TAKE ACTION TO ENSURE THAT THERE ARE NO OTHER MEMORANDA ISSUED THAT CONFLICT WITH APPROVED PROCEDURES. TU ELECTRIC SHALL ALSO CONDUCT A REVIEW OF ALL OTHER PREREQUISITE TEST RECORDS TO DETERMINE THOSE THAT HAD PREREQUISITES SIGNED BY CRAFT PERSONNEL, AND ASSESS THE IMPACT OF THOSE IMPROPER VERIFICATIONS ON SUBSEQUENT TESTING.	
SSER: 07 ALLEG: AT-15 ITEM: 07.13G	PREOPERATIONAL TEST PROGRAM IS FLAWED BECAUSE: (7) STEs WERE NOT PROVIDED WITH CURRENT DESIGN INFORMATION AND, THEREFORE, MUST SPEND TOO MUCH TIME RESEARCHING AND VALIDATING DRAWINGS. REF. PG. J-91.	TRT --- THE ALLEGATION INVOLVED THE USE OF OUTDATED DRAWINGS BY SYSTEM TEST ENGINEERS (STEs). SUPPOSEDLY, OUTDATED DRAWINGS WERE BEING PROVIDED BY THE DOCUMENT CONTROL CENTER (DCC). ALSO, PROCEDURAL GUIDANCE DID NOT EXIST TO ENSURE THAT STEs HAD CURRENT DRAWINGS AND OTHER DESIGN INFORMATION TO CONDUCT TESTS. TRT INTERVIEWED SEVERAL STEs. THE INTERVIEWS INDICATED THAT THE PROBLEM OF RECEIVING OUTDATED DRAWINGS EXISTED IN THE PAST BUT IMPROVEMENTS HAVE BEEN MADE. PREVIOUSLY, STEs WERE REQUIRED TO GO TO THE DCC TO UPDATE DOCUMENTS. THIS WAS VERY TIME-CONSUMING. TO IMPROVE THIS SITUATION, A SATELLITE DOCUMENT CONTROL CENTER WAS ESTABLISHED CLOSE TO THE STE WORK AREA, AND CONTROLS WERE IMPROVED TO ENSURE THAT DRAWINGS WERE UP-TO-DATE. ALSO, STEs STATED THAT THEY HAD ALWAYS BEEN RESPONSIBLE BY PROCEDURE FOR ENSURING THAT THE LATEST DESIGN INFORMATION WAS USED IN TESTING. TRT CONFIRMED THAT A PROCEDURE DOES ASSIGN THAT RESPONSIBILITY TO STEs. DURING THE REVIEW OF THE TEST PROGRAM, TRT COULD FIND NO INDICATION OF DEFICIENT TESTING ACTIVITIES THAT COULD BE ATTRIBUTED TO THE USE OF OUTDATED DRAWINGS, EITHER PAST OR PRESENT. ACTIONS REQUIRED --- TU ELECTRIC SHALL ESTABLISH MEASURES TO PROVIDE GREATER ASSURANCE THAT STEs AND OTHER RESPONSIBLE TEST PERSONNEL ARE PROVIDED WITH CURRENT DESIGN DOCUMENTS	CPRT --- CPRT, UNDER ISAP III.D, EVALUATED THE ADEQUACY OF STE ACCESS TO CURRENT DESIGN DOCUMENTS BY REVIEWING STARTUP ADMINISTRATIVE PROCEDURES, REVIEWING THE INTERFACE BETWEEN STARTUP AND DCC, AND INTERVIEWING STEs. CPRT FOUND THAT THE STARTUP ADMINISTRATIVE PROCEDURES CONTAINED REQUIREMENTS FOR USING DESIGN DOCUMENTS, STATED THE REQUIREMENTS CLEARLY, AND INDICATED THE NEED TO USE CURRENT DESIGN DOCUMENTS ON A TIMELY BASIS. THE INTERFACE BETWEEN STARTUP AND DCC FOR DESIGN DOCUMENTS WAS INITIALLY CUMBERSOME AND UNRESPONSIVE, BUT CHANGES HAVE IMPROVED EFFICIENCY AND EFFECTIVENESS. INTERVIEWS WITH STEs ESTABLISHED THAT CHANGES TO DESIGN DOCUMENTS WERE HANDLED BY PRESENTING A LIST OF DRAWINGS APPLICABLE TO A TEST PROCEDURE TO THE SATELLITE DOCUMENT CONTROL CENTER, RECEIVING A CURRENT STATUS REPORT, OBTAINING DOCUMENTS THAT HAD CHANGED SINCE THE LAST UPDATE, AND INCORPORATING THOSE CHANGES IN THE TEST PROCEDURE. CPRT CONCLUDED THAT THE STARTUP AND DCC ORGANIZATIONS HAVE ESTABLISHED SUFFICIENT MEASURES TO ASSURE THAT STEs AND OTHER RESPONSIBLE PERSONNEL ARE PROVIDED CURRENT CONTROLLED DESIGN DOCUMENTS AND CHANGES. (ISAP III.D RESULTS REPORT, PG 13-16 AND 22). CPRT EVALUATED THE EFFECT OF DCC PROBLEMS ON THE TESTING PROGRAM BY DETERMINING WHETHER THE STARTUP ORGANIZATION WAS COGNIZANT OF AUTHORIZED DESIGN CHANGES INITIATED BY ENGINEERING. STARTUP WAS COGNIZANT IF APPROVED TEST DATA FOR THE DESIGN CHANGE EXISTED IN TU ELECTRIC's RECORDS VAULT OR THE DESIGN CHANGE EXISTED IN AN APPROVED STARTUP TRACKING SYSTEM. SIXTY-ONE APPROVED DESIGN CHANGES AFFECTING PREREQUISITE TESTS AND SIXTY APPROVED DESIGN CHANGES AFFECTING PREOPERATIONAL TESTS WERE EVALUATED. ALL WERE FOUND TO HAVE BEEN EITHER INCORPORATED IN A TEST PROCEDURE AND TEST DATA OBTAINED, OR DOCUMENTED AS BEING MONITORED IN A TRACKING SYSTEM. THIS CONFIRMED THAT STEs DID USE CURRENT DESIGN DOCUMENTS

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		AND CHANGE NOTICES. ADDITIONALLY, TU ELECTRIC SHALL PROVIDE NRC WITH REASONABLE ASSURANCE THAT PAST DOCUMENT CONTROL SYSTEM PROBLEMS DID NOT ADVERSELY AFFECT THE TESTING PROGRAM.	IN CONDUCTING BOTH PREOPERATIONAL AND PREREQUISITE TESTING ACTIVITIES. (ISAP III.D RESULTS REPORT, PG 16 AND 20-22). CPRT, THEREFORE, CONCLUDED THAT THERE IS REASONABLE ASSURANCE THAT DOCUMENT CONTROL PROBLEMS EXISTING PRIOR TO 1984 DID NOT ADVERSELY AFFECT THE TESTING PROGRAM. (ISAP III.D RESULTS REPORT, PG 23). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG: AQE-07 ITEM: 07.14A	A QC SUPERVISOR INSTRUCTED ELECTRICAL INSPECTORS NOT TO PERFORM REQUIRED IN-PROCESS INSPECTIONS, BUT ONLY TO INSPECT COMPLETED WORK. REF. PG. J-67.	TRT --- TRT EXAMINED CURRENT AND PAST INSPECTION PROCEDURES IN THE ELECTRICAL AREA TO DETERMINE THE NUMBER OF IN-PROCESS INSPECTIONS REQUIRED. TRT FOUND ONLY ONE ELECTRICAL INSPECTION PROCEDURE THAT DEFINED A SPECIFIC NUMBER OF REQUIRED IN-PROCESS INSPECTIONS. THAT PROCEDURE COVERED CABLE TERMINATIONS AND REQUIRED A MINIMUM OF TEN IN-PROCESS INSPECTIONS PER SHIFT. THE FREQUENCY OF INSPECTION WAS CHANGED IN AUGUST 1980 TO A WEEKLY IN-PROCESS INSPECTION. TRT COULD NOT DETERMINE THE REASON FOR THE DECREASE IN INSPECTIONS. THE NUMBER OF NONCONFORMANCE REPORTS (NCRs) ISSUED BEFORE AND AFTER THE CHANGE REMAINED THE SAME. THE SAME NUMBER OF NCRs FROM FEWER INSPECTIONS MIGHT INDICATE MORE THOROUGH INSPECTIONS. QC PERSONNEL COULD ONLY SPECULATE THAT THE CAUSE OF THE DECREASE IN INSPECTIONS WAS AN INCREASE IN THE LEVEL OF CONFIDENCE THAT THE QUALITY OF WORK WAS ADEQUATE. TRT, HOWEVER, COULD NOT SUBSTANTIATE AN IMPROVEMENT IN THE QUALITY OF WORK BASED ON CONCERNS THEY HAD WITH ELECTRICAL TERMINATIONS. THESE CONCERNS INVOLVED IMPROPERLY DISPOSITIONED NCRs FOR VENDOR-INSTALLED TERMINAL LUGS, TERMINATIONS NOT IN CONFORMANCE WITH CURRENT DRAWINGS, AND INADEQUATE QC INSPECTIONS AND SUPPORTING DOCUMENTATION, PARTICULARLY WITH RESPECT TO TERMINATION ACTIVITIES REQUIRING WITNESSING BY QC PERSONNEL. TRT CONCLUDED THAT THE ALLEGATION ABOUT COMPROMISING THE QUALITY OF INSTALLATION BY CHANGING THE FREQUENCY OF IN-PROCESS INSPECTIONS FOR CABLE TERMINATIONS WAS UNSUBSTANTIATED. HOWEVER, THIS EVALUATION WILL BE ASSESSED FURTHER AS PART OF THE OVERALL PROGRAMMATIC	CPRT ---- CPRT RESOLUTION OF ISSUES REGARDING TERMINATIONS IS SUMMARIZED UNDER ITEM 07.01A. CPRT RESOLUTION OF ISSUES REGARDING THE NONCONFORMANCE REPORTING SYSTEM IS SUMMARIZED UNDER ITEM 11.84E.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		REVIEW OF TU ELECTRIC's DEFICIENCY IDENTIFICATION PROGRAM FOR IN-PROCESS INSPECTIONS ADDRESSED UNDER QA/QC CATEGORY 5, NONCONFORMANCE REPORTS. ACTION REQUIRED --- THE ACTIONS REQUIRED IN ELECTRICAL AND INSTRUMENTATION CATEGORY I, ELECTRICAL CABLE TERMINATIONS, ADDRESS CONCERNS WITH REGARD TO REDUCTION IN CABLE TERMINATION INSPECTIONS. (SEE ITEM 07.01A).	
SSER: 07 ALLEG: AQE-23 ITEM: 07.17A	MANY REQUIREMENTS WERE DELETED BY REVISIONS TO POST-CONSTRUCTION ELECTRICAL INSPECTION PROCEDURES. REF. PG. J-63.	TRT --- TRT FOUND NO OMISSIONS IN REQUIREMENTS FOR THE INSPECTION OF ELECTRICAL EQUIPMENT AND RACEWAYS. BASED ON THE REVIEW OF PROCEDURES FOR IN-PROCESS, POST-CONSTRUCTION, AND TURNOVER INSPECTIONS, TRT CONCLUDED THAT NO SIGNIFICANT CONCERNS EXISTED ABOUT ELECTRICAL PROCEDURES. HOWEVER, EQUIPMENT INSTALLATION PROBLEMS, AS RELATED TO NONCONFORMANCES WITH PROCEDURES, ARE BEING ADDRESSED IN THE HARDWARE-RELATED ELECTRICAL AND INSTRUMENTATION CATEGORIES. TRT, THEREFORE, CONCLUDED THAT THESE ELECTRICAL PROCEDURE-RELATED ALLEGATIONS COULD NOT BE SUBSTANTIATED. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING THE POST-CONSTRUCTION VERIFICATION PROGRAM ADDRESSED UNDER QA/QC, CATEGORY 8, AS BUILT. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE OVERALL PROGRAMMATIC REVIEW ON THIS SUBJECT.	CPRT --- SEE ITEM 11.03L.
SSER: 07 ALLEG: AQE-32 ITEM: 07.17B	BECAUSE OF COMPLAINTS FROM CRAFT PERSONNEL, FOUR REVISIONS WERE MADE TO QI-QP 11.14-12 THAT DELETED INSPECTION REQUIREMENTS. REF. PG. J-63.	TRT --- TRT FOUND NO OMISSIONS IN REQUIREMENTS OF ELECTRICAL EQUIPMENT. BASED ON THE REVIEW OF PROCEDURES FOR IN-PROCESS,	CPRT --- SEE ITEM 11.03L.

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		POST-CONSTRUCTION, AND TURNOVER INSPECTIONS, TRT CONCLUDED THAT NO SIGNIFICANT CONCERNS EXISTED ABOUT ELECTRICAL PROCEDURES. HOWEVER, EQUIPMENT INSTALLATION PROBLEMS, AS RELATED TO NONCONFORMANCES WITH PROCEDURES, ARE BEING ADDRESSED IN THE HARDWARE-RELATED ELECTRICAL AND INSTRUMENTATION CATEGORIES. TRT, THEREFORE, CONCLUDED THAT THIS ELECTRICAL PROCEDURE-RELATED ALLEGATION COULD NOT BE SUBSTANTIATED. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING THE POST-CONSTRUCTION VERIFICATION PROGRAM ADDRESSED UNDER QA/QC, CATEGORY 8, AS BUILT.	
SSER: 07 ALLEG: AQE-52 ITEM: 07.17C	REVISION 15 TO A POST-CONSTRUCTION INSPECTION PROCEDURE ELIMINATED THE REQUIREMENT TO INSPECT LARGE PIECES OF EQUIPMENT SUCH AS 6.9 KV MOTORS. REF. PG. J-63.	TRT --- TRT FOUND NO OMISSIONS IN REQUIREMENTS FOR INSPECTION OF ELECTRICAL EQUIPMENT AND RACEWAYS. BASED ON THE REVIEW OF PROCEDURES FOR IN-PROCESS, POST-CONSTRUCTION, AND TURNOVER INSPECTIONS, TRT CONCLUDED THAT NO SIGNIFICANT CONCERNS EXISTED ABOUT ELECTRICAL PROCEDURES. HOWEVER, EQUIPMENT INSTALLATION PROBLEMS, AS RELATED TO NONCONFORMANCES WITH PROCEDURES, ARE BEING ADDRESSED IN THE HARDWARE-RELATED ELECTRICAL AND INSTRUMENTATION CATEGORIES. TRT, THEREFORE, CONCLUDED THAT THESE ELECTRICAL PROCEDURE-RELATED ALLEGATIONS COULD NOT BE SUBSTANTIATED. THE RESULTS OF THIS EVALUATION WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING THE POST-CONSTRUCTION VERIFICATION PROGRAM ADDRESSED UNDER QA/QC, CATEGORY 8, AS BUILT.	CPRT ---- SEE ITEM 11.83L.
SSER: 07 ALLEG: I-118 ITEM: A-02	TRT DID NOT FIND ANY DOCUMENT PROVIDING ASSURANCE THAT TU ELECTRIC WOULD HAVE JTG, OR SIMILARLY QUALIFIED GROUP, APPROVE DATA FOR PROPOSED POST-REFUELING, DEFERRED PREOPERATIONAL HFT PRIOR TO PROCEEDING TO CRITICALITY.	TRT --- TRT STATED THAT TU ELECTRIC SHALL COMMIT TO HAVING A JTG, OR SIMILARLY QUALIFIED GROUP, REVIEW AND APPROVE ALL POST-FUELING PREOPERATIONAL TEST RESULTS PRIOR TO DECLARING THE SYSTEM OPERABLE IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS.	CPRT ---- CPRT, UNDER ISAP III A.2, REVIEWED THE FSAR AND STATION ADMINISTRATIVE PROCEDURES AND DETERMINED THAT PREOPERATIONAL TEST RESULTS WILL BE REVIEWED BY APPROPRIATE MEMBERS OF THE JTG AND THAT INITIAL STARTUP TEST RESULTS WILL BE REVIEWED BY MEMBERS OF THE SORC. (ISAP III.A.2 RESULTS REPORT PG. 4).

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	REF. PG. J-118		THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 07 ALLEG: J-118 ITEM: A-03	TO CONDUCT PREOPERATIONAL TESTS AT NECESSARY TEMPERATURES AND PRESSURES AFTER FUEL LOAD CERTAIN LIMITING CONDITIONS OF THE PROPOSED TECH. SPECIF. CANNOT BE MET, e.g. ALL SNUBBERS WILL NOT BE OPERATIONAL SINCE SOME WILL NOT HAVE BEEN TESTED REF.PG. J-118	TRT --- TRT STATED THAT TU ELECTRIC SHALL EVALUATE REQUIRED PLANT CONDITIONS FOR DEFERRED PREOPERATIONAL TESTS AGAINST LIMITING CONDITIONS IN THE PROPOSED TECHNICAL SPECIFICATIONS AND OBTAIN NRC APPROVAL WHERE DEVIATIONS FROM THE TECHNICAL SPECIFICATIONS ARE NECESSARY. THIS REQUIREMENT BECAME INAPPLICABLE WHEN TU ELECTRIC INFORMED TRT THAT THE DEFERRED TESTS WOULD BE CONDUCTED PRIOR TO FUEL LOAD. (PG J-18)	CPRT ---- CPRT, UNDER ISAP III.A.3, REVIEWED ADMINISTRATIVE REQUIREMENTS FOR DEFERRED PREOPERATIONAL TESTS AND CONCLUDED THAT STATION PROCEDURES PROVIDE FOR EVALUATION OF DEFERRED PREOPERATIONAL TESTING INCLUDING CONSIDERATION OF THE REQUIREMENTS OF TECHNICAL SPECIFICATIONS. (ISAP III.A.3 RESULTS REPORT PG. 4). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 08 ALLEG: AC-25 ITEM: 08.05A	VOIDS EXISTED IN THE CONCRETE WALL BEHIND THE UNIT-1 REACTOR CAVIYY STAINLESS STEEL LINER. REF. PG. K-39.	TRT --- THE ALLEGER STIPULATED THAT HOLLOW PLACES WERE LOCATED BEHIND THE STAINLESS STEEL LINER OF UNIT 1 REACTOR CAVITY, BUT WHEN INTERVIEWED BY TRT, HE STATED THAT HE MEANT UNIT 2. THE ALLEGATION WAS INVESTIGATED BY NRC REGION IV AND DOCUMENTED IN RIV-IR 50-445/80-11; 50-446/80-11, WHICH WERE REVIEWED BY TRT AS A STEP IN ITS OWN ASSESSMENT OF THE SITUATION. ACTION REQUIRED --- THE REPAIRS AND THE REPAIR DOCUMENTATION TO THE HONEYCOMBING EXISTING IN CONCRETE BEHIND THE STAINLESS STEEL LINER OF THE UNIT 2 REACTOR CAVITY MUST BE INSPECTED/REVIEWED AND APPROVED BY THE NRC RESIDENT INSPECTOR BEFORE TRT CAN DETERMINE WHETHER THIS ISSUE HAS BEEN ADEQUATELY RESOLVED. THE SUCCESSFUL COMPLETION OF THE REPAIRS SHALL BE REPORTED TO TRT AND WILL BE VERIFIED BY THE NRC RESIDENT INSPECTOR PRIOR TO LOW-POWER OPERATIONS.	CPRT ---- UNDER ISAP VII.C, CPRT REVIEWED DOCUMENTATION FOR PROPER DEPOSITING AND CONSOLIDATING PRACTICES TO PRECLUDE VOIDS. NO SIGNIFICANT DEVIATIONS WERE IDENTIFIED. (ISAP VII.C, RESULTS REPORT, APPENDIX 18, PG 21 AND 22). THE SPECIFIC ACTION REQUIRED BY TRT IS ADDRESSED BY THE PROJECT.
SSER: 06 ALLEG: AC-38 ITEM: 08.09B	HORIZONTAL TIE REBAR WAS MISSING FROM THE UNIT-1 CONTAINMENT BLDG. WALL. REF. PG. K-49.	TRT --- TRT CONCLUDED THAT HORIZONTAL SHEAR BAR REINFORCEMENT WAS PLACED IN THE UNIT-1 CONTAINMENT BUILDING WALL AS REQUIRED. TRT AGREED WITH THE CONCLUSION DRAWN BY THE NRC REGION IV INSPECTION REPORT NO. 79-25 THAT THE ALLEGATION REFERS TO THE UNIT-2 CONTAINMENT STRUCTURE.	CPRT ---- UNDER ISAP II.A, CPRT REVIEWED APPLICABLE PROCEDURES. A DETERMINATION OF THE EFFECTIVENESS OF THOSE PROCEDURES WAS USED TO ASSESS THE ADEQUACY OF CONTROLS GOVERNING THE PLACEMENT OF REBAR AND OTHER MAJOR EMBEDMENTS. THE INVESTIGATION REVEALED THAT:

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		FOR THE UNIT-2 CONTAINMENT, A GIBBS & HILL ANALYSIS SHOWED THAT THE STRUCTURE WAS CAPABLE OF CARRYING THE DESIGN LOADING IN THE AS-BUILT CONDITION (WITH THE OMITTED REINFORCEMENT). THIS ISSUE HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE RESULTS OF THESE EVALUATIONS THAT PERTAIN TO QC REBAR PLACEMENT WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	- PROJECT PROCEDURES FOR CONTROL OF CONCRETE POURS AND PLACEMENT OF REBAR WERE ADEQUATE TO ASSURE PROPER INSTALLATION. - ALTHOUGH SOME REBAR ELEMENTS IDENTIFIED IN EXPOSED AREAS WERE NOT IN ACCORDANCE WITH DESIGN, NONE OF THE CONDITIONS AFFECTED STRUCTURAL INTEGRITY AND NO ADVERSE TRENDS WERE IDENTIFIED. THEREFORE, THE ADMINISTRATIVE CONTROLS AND THE RESULTING PLACEMENT OF REBAR WERE ADEQUATE TO MEET OR EXCEED DESIGN REQUIREMENTS. (ISAP II.A RESULTS REPORT PG 14 AND 24). THE CPRT RESULTS RESOLVE THIS ISSUE. THE OVERALL CPRT EVALUATION OF QC INSPECTION IS SUMMARIZED UNDER ITEM 11.84F.
SER: 08 ALLEG: AC-49 ITEM: 08.09D	REBAR WAS INSTALLED UPSIDE DOWN IN A BUILDING NEAR THE UNIT-2 CONTAINMENT STRUCTURE. REF. PG. K-49.	TRT --- TRT CONCLUDED THAT THIS INSTANCE OF REBAR BEING IMPROPERLY INSTALLED WAS CORRECTED PRIOR TO CONCRETE PLACEMENT. THEREFORE, THIS ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE RESULTS OF THESE EVALUATIONS THAT PERTAIN TO QC REBAR PLACEMENT WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- UNDER ISAP II.A, CPRT REVIEWED PROCEDURES. A DETERMINATION OF THE EFFECTIVENESS OF THOSE PROCEDURES WAS USED TO ASSESS THE ADEQUACY OF CONTROLS GOVERNING THE PLACEMENT OF REBAR AND OTHER MAJOR EMBEDMENTS. THE INVESTIGATION REVEALED THAT: - PROJECT PROCEDURES FOR CONTROL OF CONCRETE POURS AND PLACEMENT OF REBAR WERE ADEQUATE TO ASSURE PROPER INSTALLATION. - ALTHOUGH SOME REBAR ELEMENTS IDENTIFIED IN EXPOSED AREAS WERE NOT IN ACCORDANCE WITH DESIGN, NONE OF THE CONDITIONS AFFECTED STRUCTURAL INTEGRITY AND NO ADVERSE TRENDS WERE IDENTIFIED. THEREFORE, THE ADMINISTRATIVE CONTROLS AND THE RESULTING PLACEMENT OF REBAR WERE ADEQUATE TO MEET OR EXCEED DESIGN REQUIREMENTS. (ISAP II.A RESULTS REPORT PG 14 AND 24). THE CPRT RESULTS RESOLVE THIS ISSUE. THE OVERALL CPRT EVALUATION OF QC INSPECTION IS SUMMARIZED UNDER ITEM 11.84F.
SER: 08 LLEG: PARA E (1) TEM: 08.10	REBAR WAS OMITTED IN A REACTOR CAVITY CONCRETE PLACEMENT BETWEEN THE 812-FT. AND 819-FT.	TRT --- TRT COULD NOT DETERMINE THE SAFETY SIGNIFICANCE OF	CPRT ---- GIBBS & HILL (G&H) PERFORMED AN ANALYSIS OF THE REACTOR CAVITY

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	1/2-IN. ELEVATIONS IN UNIT-1 REACTOR BLDG. REF.PG. K-52.	THIS ISSUE UNTIL AN ANALYSIS WAS PERFORMED VERIFYING THAT THE REINFORCING STEEL IN THE AS-BUILT CONDITION WAS ADEQUATE. ACTION REQUIRED --- TU ELECTRIC SHALL PROVIDE AN ANALYSIS OF THE AS-BUILT CONDITION OF THE UNIT 1 REACTOR CAVITY THAT VERIFIES THE ADEQUACY OF THE REINFORCING STEEL BETWEEN THE 812-FOOT AND 810-FOOT, 1/2-INCH ELEVATIONS. THE ANALYSIS SHALL CONSIDER ALL REQUIRED LOAD COMBINATIONS. HOWEVER, THE RESULTS OF THESE EVALUATIONS THAT PERTAIN TO QC REBAR PLACEMENT WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT. IN APPENDIX F, SSER-11, TRT CHARACTERIZED THIS ITEM AS AN ISOLATED OCCURRENCE, OR VERY FEW OCCURRENCES, WITH NO GENERIC IMPACT.	WALL BETWEEN THE 812-FT. AND 810-FT. 1/2-INCH ELEVATIONS AND CONCLUDED THAT THE REACTOR CAVITY WALL, AS CONSTRUCTED, WAS ADEQUATE TO RESIST THE MOST CRITICAL LOAD COMBINATION. CPRT, UNDER ISAP II.A, DETERMINED THAT THE REBAR IN QUESTION DID NOT AFFECT THE STRUCTURAL INTEGRITY OF THE REACTOR CAVITY WALL AND THAT ALL APPLICABLE PROJECT PROCEDURES APPEARED TO HAVE BEEN PROPERLY FOLLOWED. (ISAP II.A RESULTS REPORT PG 10 AND 23). THE CPRT RESULTS RESOLVE THIS ISSUE. THE OVERALL CPRT EVALUATION OF QC INSPECTION IS SUMMARIZED UNDER ITEM 11.84F.
SSER: 08 ALLEG: PARA E (2) ITEM: 08.10A-1	B & R REQUESTED A CHANGE IN CONFIGURATION OF TWO ROWS BY NINE LAYERS OF NO.9 REBAR AS SHOWN ON DWG. 2323-SI-0572, REV. 4 TO A CONTINUOUS CIRCULAR ARRANGEMENT. REF. PG. K-52.	TRT --- TRT CONCLUDED THAT THE CHANGE MADE TO THE NO. 9 REINFORCING BARS DID NOT AFFECT THE LOAD-CARRYING CAPACITY OF THE STRUCTURE. HOWEVER, THE RESULTS OF THESE EVALUATIONS THAT PERTAIN TO QC REBAR PLACEMENT PROCEDURES WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- UNDER ISAP II.A, CPRT REVIEWED PROCEDURES. A DETERMINATION OF THE EFFECTIVENESS OF THOSE PROCEDURES WAS USED TO ASSESS THE ADEQUACY OF CONTROLS GOVERNING THE PLACEMENT OF REBAR AND OTHER MAJOR EMBEDMENTS. THE INVESTIGATION REVEALED THAT: - PROJECT PROCEDURES FOR CONTROL OF CONCRETE POURS AND PLACEMENT OF REBAR WERE ADEQUATE TO ASSURE PROPER INSTALLATION. - ALTHOUGH SOME REBAR ELEMENTS IDENTIFIED IN EXPOSED AREAS WERE NOT IN ACCORDANCE WITH DESIGN, NONE OF THE CONDITIONS AFFECTED STRUCTURAL INTEGRITY AND NO ADVERSE TRENDS WERE IDENTIFIED. THEREFORE, THE ADMINISTRATIVE CONTROLS AND THE RESULTING PLACEMENT

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			OF REBAR WERE ADEQUATE TO MEET OR EXCEED DESIGN REQUIREMENTS. (ISAP II.A RESULTS REPORT PG 14 AND 24). THE CPRT RESULTS RESOLVE THIS ISSUE. THE OVERALL CPRT EVALUATION OF QC INSPECTION IS SUMMARIZED UNDER ITEM 11.84F.
SSER: 08 ALLEG: PARA E (8) ITEM: 08.15A	B & R CONSTRUCTION REQUESTED AUTHORIZATION TO SUBSTITUTE NO. 5 VERTICAL WALL REBAR IN LIEU OF THE NO. 8 WALL REBAR REQUIRED IN TWO CORNERS OF A WALL IN THE AUXILIARY BLDG. REF. PG. K-50.	TRT --- BASED ON THE FACT THAT THE NO. 8 VERTICAL WALL BARS WERE INSTALLED IN CORNERS AS REQUIRED, TRT CONCLUDED THAT THIS ISSUE HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE RESULTS OF THESE EVALUATIONS THAT PERTAIN TO QC REBAR PLACEMENT WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- UNDER ISAP II.A, CPRT REVIEWED PROCEDURES. A DETERMINATION OF THE EFFECTIVENESS OF THOSE PROCEDURES WAS USED TO ASSESS THE ADEQUACY OF CONTROLS GOVERNING THE PLACEMENT OF REBAR AND OTHER MAJOR EMBEDMENTS. THE INVESTIGATION REVEALED THAT: - PROJECT PROCEDURES FOR CONTROL OF CONCRETE POURS AND PLACEMENT OF REBAR WERE ADEQUATE TO ASSURE PROPER INSTALLATION. - ALTHOUGH SOME REBAR ELEMENTS IDENTIFIED IN EXPOSED AREAS WERE NOT IN ACCORDANCE WITH DESIGN, NONE OF THE CONDITIONS AFFECTED STRUCTURAL INTEGRITY AND NO ADVERSE TRENDS WERE IDENTIFIED. THEREFORE, THE ADMINISTRATIVE CONTROLS AND THE RESULTING PLACEMENT OF REBAR WERE ADEQUATE TO MEET OR EXCEED DESIGN REQUIREMENTS. (ISAP II.A RESULTS REPORT PG 14 AND 24). THE CPRT RESULTS RESOLVE THIS ISSUE. THE OVERALL CPRT EVALUATION OF QC INSPECTION IS SUMMARIZED UNDER ITEM 11.84F.
SSER: 08 ALLEG: AQC-01 ITEM: 08.17A	CONCRETE AIR ENTRAINMENT TEST RECORDS WERE FALSIFIED. REF. PG. K-50.	TRT --- TRT CONCLUDED THAT THE ALLEGATION ABOUT FALSIFYING A CONCRETE AIR ENTRAINMENT RECORD WAS TRUE. EVEN SO, THE COMPRESSIVE STRENGTH OF THE CONCRETE IN QUESTION WAS WITHIN SPECIFICATION. ACCORDINGLY, THE ABOVE ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE ALLEGATIONS RESOLVED ON THE BASIS OF ACCEPTABLE CONCRETE STRENGTH TEST RESULTS MAY NEED TO BE FURTHER ASSESSED PENDING THE RESOLUTION OF ALLEGATION AQC-7.	CPRT ---- CPRT, UNDER ISAP II.B, CONCLUDED THAT THE REPORTED 28-DAY CYLINDER STRENGTH DATA REPRESENTED THE TESTED POPULATION, THUS VALIDATING THE UTILIZATION OF THIS DATA TO ADDRESS OTHER ALLEGATIONS OF CONCRETE RECORDS FALSIFICATION (ISAP II.B RESULTS REPORT PG 13). SEE ITEM 08.17D (AQC-7) FOR CONCLUSIONS ABOUT THE QUALITY OF PLACED CONCRETE BASED ON THIS DATA. THE CPRT RESULTS RESOLVE THIS ISSUE.

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		ALSO, THE RESULTS OF THESE EVALUATIONS PERTAINING TO QC INSPECTION PROCEDURES WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 3, RECORDS. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW AND THE SATISFACTORY RESOLUTION OF ALLEGATION AQC-7. THE TRT PROGRAMMATIC REVIEW OF QA/QC CATEGORY 3, RECORDS, CONCLUDED THAT THE RECORDS SYSTEM WAS ADEQUATE AND ACCEPTABLE. IN APPENDIX F, SSER-11, TRT CHARACTERIZED THIS ITEM AS AN ISOLATED OCCURRENCE, OR VERY FEW OCCURRENCES, WITH NO GENERIC IMPACT.	
SSER: 08 ALLEG: AQC-02 ITEM: 08.17B-1	SLUMP RECORDS WERE FALSIFIED. REF. PG K-58	TRT --- THE ALLEGATION THAT SLUMP TESTS ON APRIL 11 AND 13, 1978 WERE PERFORMED INCORRECTLY AND THAT THE RESULTS WERE FALSIFIED COULD WELL BE TRUE AND CANNOT BE REFUTED. TRT EXAMINED THE COMPRESSIVE STRENGTH TEST RESULTS OF THE CONCRETE IN QUESTION AND FOUND THAT THEY WERE WITHIN SPECIFICATIONS. ACCORDINGLY, THE ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE ALLEGATIONS RESOLVED ON THE BASIS OF ACCEPTABLE CONCRETE STRENGTH TEST RESULTS MAY NEED TO BE FURTHER ASSESSED PENDING THE RESOLUTION OF ALLEGATION AQC-7. ALSO, THE RESULTS OF THESE EVALUATIONS PERTAINING TO QC INSPECTION PROCEDURES WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 3, RECORDS. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW AND THE SATISFACTORY RESOLUTION OF ALLEGATION AQC-7. THE TRT PROGRAMMATIC REVIEW OF QA/QC CATEGORY 3, RECORDS,CONCLUDED THAT THE RECORDS SYSTEM WAS ADEQUATE AND ACCEPTABLE.	CPRT ---- CPRT, UNDER ISAP II.B, CONCLUDED THAT THE REPORTED 28-DAY CYLINDER STRENGTH DATA REPRESENTED THE TESTED POPULATION, THUS VALIDATING THE USE OF THIS DATA TO ADDRESS OTHER ALLEGATIONS OF CONCRETE RECORD FALSIFICATION. (ISAP II.B RESULTS REPORT PG 13). SEE ITEM 08.17D (AQC-7) FOR CONCLUSIONS ABOUT THE QUALITY OF PLACED CONCRETE BASED ON THIS DATA. THE CPRT RESULTS RESOLVE THIS ISSUE.

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SSER: 08 ALLEG: AQC-02 ITEM: 08.17B-2	LABORATORY TESTS (AIR, SLUMP AND TEMP.) FOR CONCRETE PLACEMENTS FOR 10 CU YDS OR LESS, PRIOR TO 1978, WERE NOT PERFORMED. REF. PG. K-59	TRT --- THE ALLEGATION THAT LABORATORY TESTS FOR SMALL PLACEMENTS WERE FALSIFIED WAS FOUND TO HAVE NO STRUCTURAL SAFETY SIGNIFICANCE BECAUSE CYLINDER STRENGTH TESTS WERE ALSO PERFORMED TO DEMONSTRATE ADEQUATE STRENGTH. IN INTERVIEWS WITH TRT, FORMER EMPLOYEES OF THE R.W. HUNT CO., WHO WORKED DURING THE TIME PERIOD CITED IN THE ALLEGATION, DENIED THE VALIDITY OF THE ALLEGATION. FURTHERMORE, THE LIMITED NUMBER OF CONCRETE PLACEMENTS OF LESS THAN 10 CU YDS, EVEN IF IMPROPERLY TESTED, WOULD HAVE LITTLE STRUCTURAL SAFETY SIGNIFICANCE. ACCORDINGLY, THE ABOVE ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE ALLEGATIONS RESOLVED ON THE BASIS OF ACCEPTABLE CONCRETE STRENGTH TEST RESULTS MAY NEED TO BE FURTHER ASSESSED PENDING THE RESOLUTION OF ALLEGATION AQC-7. ALSO, THE RESULTS OF THESE EVALUATIONS PERTAINING TO QC INSPECTION PROCEDURES WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 3, RECORDS. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW AND THE SATISFACTORY RESOLUTION OF ALLEGATION AQC-7. THE TRT PROGRAMMATIC REVIEW OF QA/QC CATEGORY 3, RECORDS, CONCLUDED THAT THE RECORDS SYSTEM WAS ADEQUATE AND ACCEPTABLE. IN APPENDIX F, SSER-11, TRT CHARACTERIZED THIS ITEM AS OCCURRING NOT SO FREQUENTLY AS TO IMPLY A GENERIC PROBLEM.	CPRT ---- CPRT REPORTED IN THE ISAP VII.C RESULTS REPORT, APPENDIX 18, TWO DEVIATIONS INVOLVING MISSING LABORATORY TEST REPORTS FOR CONCRETE POURS. HOWEVER, A REVIEW OF ALL CONCRETE PRODUCED ON THE DAYS OF THE POURS SHOWED THAT THE MIXES USED HAD BEEN TESTED WITH CORRECT FREQUENCY. OVERALL, CPRT REVIEWED APPROXIMATELY 20 POURS UNDER 10 CU. YDS. AND ALL HAD AIR, SLUMP AND TEMPERATURE LABORATORY TESTS PERFORMED. (ISAP VII.C RESULTS REPORT, APPENDIX 18, PG 22-23). CPRT, UNDER ISAP II.B, CONCLUDED THAT THE REPORTED 28-DAY CYLINDER STRENGTH DATA REPRESENTED THE TESTED POPULATION, THUS VALIDATING THE USE OF THIS DATA TO ADDRESS OTHER ALLEGATIONS OF CONCRETE RECORD FALSIFICATION. (ISAP II.B RESULTS REPORT PG 13). SEE ITEM 08.17D (AQC-7) FOR CONCLUSIONS ABOUT THE QUALITY OF PLACED CONCRETE BASED ON THIS DATA. THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 08 ALLEG: AQC-03 ITEM: 08.17C	CONCRETE AGGREGATE TESTS WERE FALSIFIED. REF. PG K-61	TRT --- TRT COULD NOT DETERMINE THE VALIDITY OF THE ALLEGATION THAT CONCRETE AGGREGATE TESTS WERE FALSIFIED. NEVERTHELESS, THE CONCRETE PLACED DURING THE PERIOD CITED IN THE ALLEGATION WAS CONSISTENT WITH THAT OF	CPRT ---- CPRT, UNDER ISAP II.B, CONCLUDED THAT THE REPORTED 28-DAY CYLINDER STRENGTH DATA REPRESENTED THE TESTED POPULATION, THUS VALIDATING THE USE OF THIS DATA TO ADDRESS OTHER ALLEGATIONS OF CONCRETE RECORD FALSIFICATION. (ISAP II.B RESULTS REPORT PG 13). SEE ITEM

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		CONCRETE PLACED BEFORE AND AFTER THIS PERIOD. ACCORDINGLY, THE ABOVE ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE ALLEGATIONS RESOLVED ON THE BASIS OF ACCEPTABLE CONCRETE STRENGTH TEST RESULTS MAY NEED TO BE FURTHER ASSESSED PENDING THE RESOLUTION OF ALLEGATION AQC-7. ALSO, THE RESULTS OF THESE EVALUATIONS PERTAINING TO QC INSPECTION PROCEDURES WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 3, RECORDS. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW AND THE SATISFACTORY RESOLUTION OF ALLEGATION AQC-7. THE TRT PROGRAMMATIC REVIEW OF QA/QC CATEGORY 3, RECORDS, CONCLUDED THAT THE RECORDS SYSTEM WAS ADEQUATE AND ACCEPTABLE. IN APPENDIX P, SSER-11, TRT CHARACTERIZED THIS ITEM AS AN ISOLATED OCCURRENCE, OR VERY FEW OCCURRENCES, WITH NO GENERIC IMPACT.	08.17D (AQC-7) FOR CONCLUSIONS ABOUT THE QUALITY OF PLACED CONCRETE AND FALSIFICATION OF RECORDS. THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 08 ALLEG: AQC-07 ITEM: 08.17D	CONCRETE COMPRESSIVE STRENGTH TEST RESULTS WERE FALSIFIED. REF.: PG.K-62 AND 64.	TRT --- TRT AGREED WITH THE NRC REGION IV STAFF THAT THE UNIFORMITY OF THE FRESH CONCRETE PLACED DURING THIS PERIOD SUGGESTED THAT THERE WAS NO SERIOUS PROBLEM WITH THE HARDENED CONCRETE AND, THEREFORE, NO SERIOUS SAFETY PROBLEM. HOWEVER, THIS CONCLUSION WAS BASED ON AIR CONTENT, SLUMP AND STRENGTH TESTS, ALL OF WHICH HAD BEEN ALLEGED TO BE FALSIFIED. THE ISSUES REGARDING AIR CONTENT AND SLUMP WERE RESOLVED ON THE BASIS OF THE CONCRETE STRENGTH TEST RESULTS. DUE TO THE IMPORTANCE OF THOSE RESULTS, TRT CONCLUDED THAT ADDITIONAL ACTION BY TU ELECTRIC WAS NECESSARY TO PROVIDE CONFIRMATORY EVIDENCE THAT THE REPORTED CONCRETE STRENGTH TEST RESULTS WERE REPRESENTATIVE OF THE STRENGTH OF THE CONCRETE PLACED IN CATEGORY I STRUCTURES. ACTIONS REQUIRED ----------	CPRT ---- CPRT, UNDER ISAP II.B, USED THE SCHMIDT HAMMER TEST AS A RELATIVE MEASURE OF STRENGTH TO VERIFY THE QUALITY OF CONCRETE PLACED BETWEEN JANUARY 1976 AND FEBRUARY 1977. CPRT CONCLUDED THAT ALTHOUGH THE PRESENT STRENGTH OF THE CONCRETE IN QUESTION HAD NOT BEEN MEASURED DIRECTLY, BASED ON THE HAMMER INDICATION DATA OBTAINED, IN ASSOCIATION WITH THE 28-DAY CYLINDER DATA FOR THE CONTROL CONCRETE, THE TENTH PERCENTILE VALUE OF THE TESTABLE CONCRETE IN QUESTION WAS WELL ABOVE THE DESIGN STRENGTH OF 4,000 PSI. THE 28-DAY CYLINDER STRENGTH DATA WAS CONSISTENT WITH THE HAMMER INDICATION DATA. THERE WAS NO EVIDENCE THAT SYSTEMATIC FALSIFICATION OF CYLINDER DATA OR THE NON-PERFORMANCE OF REQUIRED TESTS OCCURRED. FINALLY, CPRT CONCLUDED THAT THE REPORTED 28-DAY CYLINDER STRENGTH DATA REPRESENTED THE TESTABLE CONCRETE-IN-QUESTION POPULATION, THUS VALIDATING THE USE OF THIS DATA TO ADDRESS OTHER ALLEGATIONS OF CONCRETE RECORD FALSIFICATION. (ISAP II.B RESULTS REPORT PG 13). THE CPRT RESULTS RESOLVE THIS ISSUE.

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		TU ELECTRIC SHALL DETERMINE AREAS WHERE SAFETY-RELATED CONCRETE WAS PLACED BETWEEN JANUARY 1976 AND FEBRUARY 1977, AND PROVIDE A PROGRAM TO ASSURE ACCEPTABLE CONCRETE STRENGTH. THE PROGRAM SHALL INCLUDE TESTS SUCH AS THE USE OF RANDOM SCHMIDT HAMMER TESTS ON THE CONCRETE IN AREAS WHERE SAFETY IS CRITICAL. THE PROGRAM SHALL INCLUDE A COMPARISON OF THE RESULTS WITH THE RESULTS OF TESTS PERFORMED ON CONCRETE OF THE SAME DESIGN STRENGTH IN AREAS WHERE THE STRENGTH OF THE CONCRETE IS NOT QUESTIONED, TO DETERMINE IF ANY SIGNIFICANT VARIANCE IN STRENGTH OCCURS. TU ELECTRIC SHALL SUBMIT THE PROGRAM FOR PERFORMING THESE TESTS TO THE NRC FOR REVIEW AND APPROVAL PRIOR TO PERFORMING THE TESTS.	
SSER: 0d ALLEG: AQC-48 ITEM: 08.17E	MIDPOUR TEST RECORDS ASSOCIATED WITH THE UNIT 1 CONTAINMENT BLDG BASEMAT WERE FALSIFIED. REF. PG. K-82 AND 84.	TRT --- THE VALIDITY OF THIS ALLEGATION COULD NOT BE DETERMINED. THE RESULTS OF COMPRESSION TESTS INDICATED THAT THE CONCRETE PLACED WAS OF HIGH QUALITY. ACCORDINGLY, THE ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE ALLEGATIONS RESOLVED ON THE BASIS OF ACCEPTABLE CONCRETE STRENGTH TEST RESULTS MAY NEED TO BE FURTHER ASSESSED PENDING THE RESOLUTION OF ALLEGATION AQC-7. ALSO, THE RESULTS OF THESE EVALUATIONS PERTAINING TO QC INSPECTION PROCEDURES WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 3, RECORDS. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW AND THE SATISFACTORY RESOLUTION OF ALLEGATION AQC-7. THE TRT PROGRAMMATIC REVIEW OF QA/QC CATEGORY 3, RECORDS, CONCLUDED THAT THE RECORDS SYSTEM WAS ADEQUATE AND ACCEPTABLE. IN APPENDIX P, SSER-11, TRT CHARACTERIZED THIS ITEM AS OCCURRING NOT SO FREQUENTLY AS TO IMPLY A GENERIC PROBLEM.	CPRT --- CPRT, UNDER ISAP II.B, CONCLUDED THAT THE REPORTED 28-DAY CYLINDER STRENGTH DATA REPRESENTED THE TESTED POPULATION, THUS VALIDATING THE USE OF THIS DATA TO ADDRESS OTHER ALLEGATIONS OF CONCRETE RECORD FALSIFICATION. (ISAP II.B RESULTS REPORT PG 13). SEE ITEM 09.17D (AQC-7) FOR CONCLUSIONS ABOUT THE QUALITY OF PLACED CONCRETE AND FALSIFICATION OF RECORDS. THE CPRT RESULTS RESOLVE THIS ITEM.

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SSER: 08 ALLEG: AQC-09 ITEM: 08.18	RECERTIFICATION EXAMINATIONS FOR R. W. HUNT INSPECTORS WERE GIVEN "OPEN BOOK" AND EXAMINATIONS WERE GIVEN WITH THE ANSWERS SUPPLIED. REF. PG. K-67.	TRT --- THE ALLEGATION THAT RECERTIFICATION TESTS WERE GIVEN OPEN BOOK COULD NOT BE REFUTED. WORK PERFORMED BY THE INDIVIDUAL IN QUESTION WAS AUDITED AND FOUND TO BE SATISFACTORY WHICH WOULD INDICATE HE WAS CAPABLE OF PERFORMING THE REQUIRED TESTING PROPERLY. ADDITIONALLY, TEST RESULTS FOR CONCRETE PLACED, INCLUDING COMPRESSION TESTS, SHOWED CONCRETE TO BE OF UNIFORM QUALITY. THIS SUPPORTED THE QUALIFICATIONS OF INSPECTORS INVOLVED. TRT CONCLUDED THAT THIS ISSUE HAS NO STRUCTURAL SAFETY SIGNIFICANCE. THE RESULTS OF THESE EVALUATIONS WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING INSPECTOR QUALIFICATIONS ADDRESSED UNDER QA/QC CATEGORY 4, TRAINING AND QUALIFICATION. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- THE QUALIFICATIONS OF EIGHT R.W. HUNT INSPECTORS WERE REVIEWED. SEVEN WERE DETERMINED TO BE QUALIFIED TO CONDUCT THE INSPECTIONS FOR WHICH THEY WERE CERTIFIED. ONE R.W. HUNT INSPECTOR, WHO LACKED SUFFICIENT EXPERIENCE, WAS DETERMINED NOT TO HAVE CONDUCTED INSPECTIONS. THE R.W. HUNT INSPECTOR CERTIFICATION PROGRAM WAS ADEQUATE IN THAT ITS APPLICATION RESULTED IN THE CERTIFICATION OF INSPECTORS CAPABLE OF CONDUCTING THE REQUIRED INSPECTIONS. (ISAP I.D.1 RESULTS REPORT PG 44, 47, 50, 64, AND 65). THE CPRT RESULTS RESOLVE THIS ISSUE. THE CPRT RESOLUTION OF ISSUES RELATED TO INSPECTOR QUALIFICATIONS IS SUMMARIZED IN ITEM 11.83D.
SSER: 08 ALLEG: AQC-04 ITEM: 08.19A	EQUIPMENT REQUIRED FOR AGGREGATE TESTING HAD NOT BEEN USED. REF. PG. K-71.	TRT --- TRT CONCLUDED THAT ALL REQUIRED TESTS FOR ASTM-C-289 WERE PERFORMED. ACCORDINGLY, THIS ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE EFFECTIVENESS OF QUALITY CONTROL IN THE LABORATORY WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- R.W. HUNT, AS A BROWN & ROOT SUBCONTRACTOR, OPERATED A FIELD CALIBRATION LABORATORY FROM 1975 UNTIL JULY 1978, WHEN BROWN & ROOT ASSUMED CALIBRATION RESPONSIBILITY. CPRT REVIEWED THE R.W. HUNT QA MANUAL, SELECTED CALIBRATION PROCEDURES, CALIBRATION RECORDS, AND RESULTS OF TU ELECTRIC SURVEILLANCES AND DETERMINED THAT THE R.W. HUNT PROGRAM FOR CONTROL OF MEASURING AND TEST EQUIPMENT (M&TE) EXHIBITED REQUIRED CHARACTERISTICS. CPRT CONCLUDED THAT THE R.W. HUNT PROGRAM FOR CONTROL OF M&TE UNDER CRITERION XII WAS ADEQUATE TO MEET THE APPLICABLE PROGRAM ELEMENTS SPECIFIED IN THE FSAR AND THE NRC STANDARD REVIEW PLAN (SRP). (CER, PART IV, SEC 3.12.2). CPRT ALSO CONCLUDED THAT R.W. HUNT MET THE REQUIREMENTS OF OTHER APPLICABLE APPENDIX B CRITERIA. (CER, PART IV). BROWN & ROOT ASSUMED RESPONSIBILITY FOR THE CALIBRATION PROGRAM FROM THEIR SUBCONTRACTOR, R.W. HUNT, IN JULY 1978. CPRT REVIEWED PROCEDURES AND TU ELECTRIC AUDITS TO VERIFY THAT REQUIREMENTS WERE

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			MET AND THAT SPECIFIC PROBLEMS WHEN IDENTIFIED, WERE CORRECTED. ISAP VII.C RESULTS PROVIDED EVIDENCE THAT MATE WAS PROPERLY LABELED AND CALIBRATION REQUIREMENTS WERE MET. CPRT CONCLUDED THAT THE HISTORICAL BROWN & ROOT PROGRAM FOR CONTROL OF M&TE UNDER CRITERION XII ADEQUATELY ADDRESSED THE APPLICABLE PROGRAM ELEMENTS SET FORTH IN THE FSAR AND SRP. (CER, PART IV, SEC 3.12.2). THE CPRT RESULTS RESOLVE THIS ISSUE. THE OVERALL CPRT EVALUATION OF QA/QC CATEGORY 6, QC INSPECTION, IS SUMMARIZED UNDER ITEM 11.84F.
SSER: 08 ALLEG: AQC-05 ITEM: 08.19B	IMPROPER METHODS WERE USED TO DRY COARSE AGGREGATE FOR SIEVE ANALYSIS. REF. PG. K-72.	TRT --- TRT CONCLUDED THAT THE ALLEDGED SHORTCUT IN CARRYING OUT AGGREGATE GRADING TESTS WAS PERMITTED BY THE PROVISIONS OF THE SPECIFIED TEST METHOD IN ASTM C-136. ACCORDINGLY, THIS ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE EFFECTIVENESS OF QUALITY CONTROL IN THE LABORATORY WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- CPRT RESOLUTION IS SUMMARIZED UNDER ITEM 08.19A.
SSER: 08 ALLEG: AQC-06 ITEM: 08.19C	SOME OF THE UNIT-1 CONTAINMENT BLDG. BASEMAT CONCRETE WAS PLACED WITHOUT REQUIRED TESTING. REF. PG. K-72.	TRT --- TRT CONCLUDED THAT ALL REQUIRED TESTING WAS CARRIED OUT IN CONNECTION WITH THE 6600-CUBIC-YD. BASEMAT PLACEMENT. ACCORDINGLY, THIS ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE EFFECTIVENESS OF QUALITY CONTROL IN THE LABORATORY WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- CPRT RESOLUTION IS SUMMARIZED UNDER ITEM 08.19A.

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SSER: 08 ALLEG: AQC-08 ITEM: 08.19D	CONCRETE COMPRESSIVE STRENGTH TEST SPECIMENS WERE LOADED AT AN EXCESSIVE RATE. REF. PG. K-71.	TRT --- TRT CONCLUDED THAT ALTHOUGH THE ALLEGATION MAY HAVE BEEN TRUE, THE FASTEST POSSIBLE LOADING OF TEST CYLINDERS WOULD HAVE INCREASED THE INDICATED STRENGTHS BY NO MORE THAN 6.5 PERCENT AND WOULD HAVE NO EFFECT ON ACCEPTABILITY OF THE CONCRETE. ACCORDINGLY, THIS ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE EFFECTIVENESS OF QUALITY CONTROL IN THE LABORATORY WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- CPRT RESOLUTION IS SUMMARIZED UNDER ITEM 08.19A.
SSER: 08 ALLEG: AQC-48 ITEM: 08.19F	CONCRETE TEST CYLINDERS IN THE R. W. HUNT LABORATORY MOIST ROOM WERE ALLOWED TO DRY. REF. PG. K-73.	TRT --- TRT CONCLUDED THAT ALTHOUGH THE LABORATORY FAILED TO MAINTAIN WATER SUPPLY FOR BRIEF PERIODS, THESE PERIODIC BREAKDOWNS WOULD RESULT IN CONSERVATIVE STRENGTH RESULTS. ACCORDINGLY, THIS ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE EFFECTIVENESS OF QUALITY CONTROL IN THE LABORATORY WILL BE FURTHER ASSESSED AS PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTION. THEREFORE, THE FINAL ACCEPTABILITY OF THIS EVALUATION WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- CPRT RESOLUTION IS SUMMARIZED UNDER ITEM 08.19A.
SSER: 08 ALLEG: AC-41 ITEM: 08.20	THERE WAS POOR WORKMANSHIP IN THE USE OF ELASTIC JOINT FILLER MATERIAL, ROTOFOAM, AS A TEMPORARY SPACER IN ORDER TO ACHIEVE THE REQUIRED AIR SPACE BETWEEN SEISMIC CATEGORY I	TRT --- BASED ON REVIEW OF INSPECTION REPORTS AND RELATED DOCUMENTS, FIELD OBSERVATIONS AND DISCUSSIONS WITH TU ELECTRIC ENGINEERS, TRT COULD NOT DETERMINE WHETHER AN ADEQUATE AIR GAP HAD BEEN PROVIDED BETWEEN CONCRETE	CPRT ---- CPRT, UNDER ISAP II.C, INVESTIGATED THE POSSIBLE INADEQUACY OF SEISMIC AIR GAPS BETWEEN BUILDINGS. REINSPECTIONS IDENTIFIED AREAS OF SIGNIFICANT DEBRIS ACCUMULATION AND LESS-THAN-DESIGN GAP WIDTHS CONFIRMING THAT SEISMIC SEPARATION HAD NOT BEEN ACHIEVED. ALL

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	STRUCTURES. REF. PG. K-75.	STRUCTURES. FIELD INVESTIGATIONS BY BROWN & ROOT QC INSPECTORS INDICATED UNSATISFACTORY CONDITIONS DUE TO THE PRESENCE OF DEBRIS IN THE AIR GAP, SUCH AS WOOD WEDGES, ROCKS, CLUMPS OF CONCRETE AND ROTOFOAM. THE DISPOSITION OF THE NONCONFORMANCE REPORT (NCR) RELATING TO THIS MATTER STATED THAT THE FIELD INVESTIGATION REVEALED THAT MOST OF THE MATERIAL HAD BEEN REMOVED. HOWEVER, TRT COULD NOT DETERMINE FROM THIS REPORT (NCR C-83-01067) THE EXTENT AND LOCATION OF THE DEBRIS REMAINING BETWEEN THE STRUCTURES. BASED ON DISCUSSIONS WITH TU ELECTRIC ENGINEERS, TRT DETERMINED THAT FIELD INVESTIGATIONS WERE MADE BUT THAT NO PERMANENT RECORDS WERE MAINTAINED. IN ADDITION, IT IS NOT APPARENT THAT THE PERMANENT INSTALLATION OF ELASTIC JOINT FILLER MATERIAL (ROTOFOAM) BETWEEN THE SAFEGUARDS BUILDING AND THE REACTOR BUILDING, AND BELOW GRADE FOR THE OTHER CONCRETE STRUCTURES, IS CONSISTENT WITH THE SEISMIC ANALYSIS ASSUMPTIONS AND DYNAMIC MODELS USED TO ANALYZE THE BUILDINGS, AS THESE ANALYSES ARE DELINEATED IN THE FINAL SAFETY ANALYSIS REPORT (FSAR). TRT, THEREFORE, CONCLUDED THAT TU ELECTRIC HAS NOT ADEQUATELY DEMONSTRATED COMPLIANCE WITH FSAR SECTIONS 3.8.1.1.1, 3.8.4.5.1, AND 3.7.B.2.8, WHICH REQUIRE SEPARATION OF SEISMIC CATEGORY I BUILDINGS TO PREVENT SEISMIC INTERACTION DURING AN EARTHQUAKE. DEPENDING ON THE EXTENT OF NONCONFORMANCE WITH FSAR SECTIONS 3.8.1.1.1, 3.8.4.5.1, AND 3.7.B.2.8, THE ALLEGATION IS JUDGED TO HAVE MERIT AND POTENTIAL SAFETY SIGNIFICANCE.	SEISMIC GAPS HAVE BEEN IDENTIFIED AND HAVE BEEN OR WILL BE INSPECTED, WITH TWO EXCEPTIONS IDENTIFIED AT THE TIME THE ISAP II.C RESULTS REPORT WAS ISSUED. FOR THOSE TWO CASES, ACCEPTABLE JUSTIFICATIONS HAVE BEEN DEVELOPED THAT DEMONSTRATE SEISMIC SEPARATION HAS BEEN MAINTAINED. (ISAP II.C RESULTS REPORT PG 4, 16, 17, AND 38). THE CPSES PROJECT IS INSPECTING ALL SEISMIC AIR GAPS, REMOVING DEBRIS, WIDENING THE GAPS WHERE NECESSARY AND PERFORMING A FINAL VERIFICATION THAT THE GAPS MEET THE FSAR COMMITMENT FOR SEISMIC SEPARATION. CPRT HAS PERFORMED REVIEWS OF THE FINAL INSPECTIONS FOR THOSE AREAS WHERE THE PROJECT CORRECTIVE ACTION IS COMPLETED. BASED ON THESE REVIEWS, CPRT CONCLUDED THAT THE PROCEDURES USED AND THEIR IMPLEMENTATION HAVE BEEN EFFECTIVE IN ASSURING THAT THE DESIGN GAP WIDTH IS ACHIEVED, THAT THE GAPS ARE FREE OF DEBRIS AND THAT THEY ARE PROTECTED FROM FUTURE DEBRIS INTRUSION. (ISAP II.C RESULTS REPORT PG 38 AND 39). GIBBS & HILL PREPARED CALCULATIONS TO ESTABLISH THE DESIGN BASIS FOR BUILDING DISPLACEMENTS AND TO CONFIRM THAT THE ELASTIC FOAM MATERIALS DESIGNED TO BE PRESENT IN SEISMIC GAPS (e.g., ENVIRONMENTAL AND FIRE SEALS) DO NOT INVALIDATE THE ASSUMPTIONS OR DYNAMIC MODELS USED. CPRT HAS REVIEWED THOSE CALCULATIONS AND CONCURS THAT THEY CORRECTLY REFLECT THE FSAR COMMITMENT FOR SEISMIC SEPARATION AND DEMONSTRATE THAT THE PRESENCE OF THOSE MATERIALS DO NOT HAVE A SIGNIFICANT EFFECT ON THE SEISMIC RESPONSE OF THE BUILDINGS. A VERIFICATION EFFORT IS BEING CONDUCTED BY STONE & WEBSTER ENGINEERING CORPORATION (SWEC) IN THE CIVIL/STRUCTURAL DESIGN AREA AND THIS VERIFICATION EFFORT HAS THE POTENTIAL TO AFFECT ENGINEERING RESULTS USED AS INPUT TO THE GIBBS & HILL SEPARATION GAP CALCULATIONS. (ISAP II.C RESULTS REPORT PG 39). IN ORDER TO FACILITATE QC INSPECTOR TRAINING, THE GAP INSPECTION REQUIREMENTS HAVE BEEN CONSOLIDATED IN A NEW PROCEDURE, QI-QP-11.0-16, BUILDING SEPARATION GAP AND CONDITION INSPECTION. THE METHODOLOGY TO BE USED FOR THE REMAINING FINAL INSPECTIONS IS THE SAME AS USED FOR THE INSPECTIONS ALREADY COMPLETED AND CONFIRMED BY CPRT TO BE EFFECTIVE. (ISAP II.C RESULTS REPORT PG 40). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.

COMANCHE PEAK RESPONSE TEAM (CPRT)
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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
SSER: 08 ALLEG: AC-14 ITEM: 08.21B	THERE WAS UNAUTHORIZED CUTTING OF REBAR IN NONSPECIFIC LOCATIONS. (AC-18 AND AC-40 ARE ALSO COVERED) REF. PG. K-87.	TRT --- TRT CONCLUDED THAT THIS ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. ALLEGATIONS WERE NOT SPECIFIC AS TO WHO MADE THE UNAUTHORIZED CUTS OF REBAR OR WHERE THEY TOOK PLACE. THE NUMBER OF UNAUTHORIZED CUTS, IF TRUE, WOULD HAVE AN INCONSEQUENTIAL EFFECT ON THE SAFETY OF THE STRUCTURE. HOWEVER, THE RESULTS OF THESE EVALUATIONS WILL BE FURTHER ASSESSED AS A PART OF THE PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QA/QC CATEGORY 6, QC INSPECTIONS. THEREFORE, THE FINAL ACCEPTABILITY OF THESE EVALUATIONS WILL BE PREDICATED ON THE SATISFACTORY RESULTS OF THE PROGRAMMATIC REVIEW OF THIS SUBJECT.	CPRT ---- CPRT, UNDER ISAP II.E, EVALUATED THE WORST CASE THAT COULD HAVE OCCURRED FROM THE UNAUTHORIZED CUTTING OF REBAR WITH LOANED DIAMOND CORE DRILL BITS. THE DATA OBTAINED ON THE NUMBER OF DIAMOND DRILL BITS THAT COULD HAVE BEEN USED FOR UNAUTHORIZED REBAR CUTTING AND THE TOTAL AMOUNT OF REBAR IN CONCRETE STRUCTURES SUPPORTED THE NRC CONCLUSION THAT SUCH CUTTING WOULD BE INCONSEQUENTIAL. (ISAP II.E RESULTS REPORT PG 19-21). THE CPRT RESULTS RESOLVE THIS ISSUE. THE OVERALL CPRT EVALUATION OF QC INSPECTION IS SUMMARIZED UNDER ITEM 11.84F.
SSER: 08 ALLEG: AC-18 ITEM: 08.21C	THERE WAS UNAUTHORIZED CUTTING OF REBAR IN NONSPECIFIC LOCATIONS. REF. PG. K-87.	SEE AC-14, ITEM 08.21B.	
SSER: 08 ALLEG: AC-40 ITEM: 08.21D	THERE WAS UNAUTHORIZED CUTTING OF REBAR IN NONSPECIFIC LOCATIONS. REF. PG. K-87.	SEE AC-14, ITEM 08.21B.	
SSER: 08 ALLEG: AC-15 ITEM: 08.21E	THERE WAS UNAUTHORIZED CUTTING OF REBAR DURING INSTALLATION OF TROLLEY PROCESS AISLE RAILS IN THE FUEL HANDLING BLDG. REF. PG. K-87.	TRT --- REVIEW OF THE REINFORCEMENT DRAWINGS REVEALED THAT THE LAYOUT OF THE EAST-WEST REINFORCEMENT AND THE TROLLEY PROCESS AISLE RAILS WAS SUCH THAT ONLY ONE BAR OF THE EAST-WEST REINFORCEMENT COULD BE CUT BY DRILLING HOLES FOR RAIL ANCHORS. HOWEVER, IF NINE INCH HOLES WERE DRILLED, BOTH LAYERS OF THE NO. 18 REINFORCING BAR WOULD BE CUT. IF THE TEN HOLES WERE ACTUALLY DRILLED NINE INCHES DEEP, THE ALLEGATION THAT REINFORCEMENT WAS CUT WITHOUT PROPER AUTHORIZATION MIGHT BE VALID. ACTION REQUIRED --- THIS ALLEGATION WILL REMAIN OPEN UNTIL TU ELECTRIC PROVIDES THE FOLLOWING: 1. INFORMATION TO DEMONSTRATE THAT ONLY THE NO. 18	CPRT ---- CPRT INVESTIGATED THIS ALLEGATION UNDER ISAP II.E AND CONCLUDED THAT THE CONCRETE MAT AT THE 810'-6" ELEVATION OF THE FUEL HANDLING BUILDING WAS STRUCTURALLY ADEQUATE EVEN IF THE SECOND LAYER OF NO. 18 REBAR WAS CUT AS ALLEGED. OTHER IDENTIFIED LOCATIONS WHERE THE POSSIBILITY OF UNAUTHORIZED REBAR CUTTING EXISTED WERE ALSO FOUND TO BE STRUCTURALLY ADEQUATE ASSUMING REBAR WAS CUT. THE PROCEDURES SPECIFY REQUIREMENTS FOR DRILLING HILTI INSTALLATIONS AND DRILLING CORE BORES IN SUCH A WAY THAT, IF THEY ARE FOLLOWED, UNAUTHORIZED REBAR CUTTING CANNOT OCCUR. THIS INVESTIGATION DID NOT IDENTIFY ANY DEFICIENCIES. (ISAP II.E RESULTS REPORT PG 22). THE CPRT RESULTS RESOLVE THIS ISSUE.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		REINFORCING STEEL IN THE FIRST LAYER WAS CUT, OR 2. DESIGN CALCULATIONS TO DEMONSTRATE THAT STRUCTURAL INTEGRITY IS MAINTAINED IF THE NO. 18 REINFORCING STEEL ON BOTH THE FIRST AND THIRD LAYERS WAS CUT.	
SER: 08 ALLEG: AQC-45 ITEM: 08.23	SOMEBODY PRODUCED INCORRECT SCALE READINGS AT THE CONCRETE BATCH PLANT BY LEANING ON THE WIRES CONNECTING THE WEIGHT HOPPERS TO THE SCALES. REF. PG. E-85.	TRT --- TRT CONCLUDED THAT THIS ALLEGATION COULD NEITHER BE VERIFIED NOR REFUTED. IF TAMPERING DID OCCUR, IT WAS CONFINED TO SCALES WHERE EITHER NO EFFECT OR A BENEFICIAL EFFECT ON THE CONCRETE OCCURRED. ACCORDINGLY, THIS ALLEGATION HAS NO STRUCTURAL SAFETY SIGNIFICANCE. HOWEVER, THE RESULTS OF THIS EVALUATION PERTAINING TO QC CONTROLS AT THE BATCH PLANT WILL BE FURTHER ASSESSED AS A PART OF THE OVERALL PROGRAMMATIC REVIEW CONCERNING PROCEDURES ADDRESSED UNDER QC INSPECTION.	CPRT ---- IN RELATION TO QC CONTROLS AT THE BATCH PLANT, CPRT REVIEWED DOCUMENTATION FOR BATCH PLANT OPERATIONS UNDER ISAP VII.C. THE REVIEWS ADDRESSED MIX DESIGNATION, MINIMUM MIXING REVOLUTIONS OF TRUCK-MIXED CONCRETE, DISCHARGE TIME OF TRUCKS, CALIBRATION OF BATCH PLANT SCALES AND PROPER COMPLETION OF BATCH TICKETS. CPRT CONCLUDED THAT BATCH PLANT OPERATIONS WERE ACCEPTABLE. (ISAP VII.C RESULTS REPORT, APPENDIX 18, PG 11-16). THE CPRT RESULTS RESOLVE THIS ISSUE. THE OVERALL CPRT EVALUATION OF QC INSPECTION IS SUMMARIZED UNDER ITEM 11.84F.
SER: 06 ALLEG: AM-03 ITEM: 08.31	DURING HOT FUNCTIONAL TESTING, EXPANSION CAUSED THE REACTOR PRESSURE VESSEL REFLECTIVE INSULATION (RPVRI) TO TOUCH THE BIOLOGICAL SHIELD WALL. REF. PG. E-99.	TRT --- BASED ON A REVIEW OF DOCUMENTATION AND DISCUSSIONS, TRT CONCLUDED THAT THE RPVRI DID MAKE CONTACT WITH CONSTRUCTION DEBRIS, BUT DID NOT CONTACT THE CONCRETE BIOLOGICAL SHIELD WALL AS SPECIFICALLY ALLEGED. DURING FIBER OPTIC INSPECTION, TU ELECTRIC PERSONNEL OBSERVED NO VISIBLE DAMAGE TO THE REFLECTIVE INSULATION, AND ALL CORRECTIVE MODIFICATIONS WERE ACCOMPLISHED AND ACCEPTED IN ACCORDANCE WITH WESTINGHOUSE PROCEDURE MP 2.7.1-TBX-3 AND PCNS TBXM-10609, 10611 AND 10612. TRT CONCLUDED THAT THE REACTOR PRESSURE VESSEL WAS SET WITHIN THE DESIGN LOCATION TOLERANCE. TRT COULD NOT SUBSTANTIATE THE ALLEGATION AS STATED, ALTHOUGH IT DID HAVE SOME MERIT BECAUSE AN UNSATISFACTORY CONDITION EXISTED IN THAT THE REFLECTIVE INSULATION MADE CONTACT WITH DEBRIS. HOWEVER, THIS ALLEGATION HAS BOTH SAFETY SIGNIFICANCE AND GENERIC IMPLICATIONS BECAUSE OF PERIPHERAL ISSUES, I.E., FAILURE TO ASSURE THAT PROPER	CPRT ---- CPRT, UNDER ISAP VI.A, ADDRESSED THE TRT REQUIRED ACTIONS CONCERNING REVIEW OF PROCEDURES FOR APPROVAL OF DESIGN CHANGES, ADEQUACY OF THE ANALYSIS TO CONFIRM COOLING FLOW FOR UNIT 2, VERIFICATION OF TESTING TO CONFIRM SUFFICIENT AIR FLOW FOR UNIT 1 AND IDENTIFICATION AND INSPECTION OF CRITICAL SPACES. BASED ON THE CPRT REVIEWS OF HOT FUNCTIONAL TESTING RESULTS FOR UNIT 1 AND REVIEW OF FLOW TESTS AND CALCULATIONS FOR UNIT 2, COOLING FLOW IN THE ANNULUS BET. N THE RPVRI AND BIOLOGICAL SHIELD WALL FOR BOTH UNITS IS ADEQUATE. THE REVIEWS WERE BASED ON TESTS AND CALCULATIONS THAT CONSIDER THE CURRENT AS-BUILT CONFIGURATION, i.e., POST-MODIFICATION. ALTHOUGH NOT WITHIN THE SCOPE OF ISAP VI.A, IT IS NOTEWORTHY THAT FURTHER PROOF OF UNIT 2 COOLING ADEQUACY WILL BE DEMONSTRATED BY THE HOT FUNCTIONAL TESTING REQUIRED AS PART OF THE UNIT 2 STARTUP PROGRAM. A REVIEW OF THE CIRCUMSTANCES THAT GAVE RISE TO THE ISSUE WAS CONDUCTED BY CPRT. CPRT CONCLUDED THAT THE CAUSE OF THE PROBLEM

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		DESIGN CHANGES WERE COMMUNICATED BETWEEN ORGANIZATIONS, FAILURE TO DETERMINE AND REPORT THE UNDERLYING CAUSE OF A SIGNIFICANT DEFICIENCY, AND FAILURE TO ENSURE A PROPER GAP BETWEEN THE SUPPORT CHANNEL AND SHIELD WALL WHEN THE VESSEL WAS SET. IN APPENDIX F, SSER-11, TRT CHARACTERIZED THIS ITEM AS AN ISOLATED OCCURRENCE, OR VERY FEW OCCURRENCES, WITH NO GENERIC IMPACT. ACTIONS REQUIRED --- TU ELECTRIC SHALL: 1. REVIEW THEIR PROCEDURES FOR APPROVAL OF DESIGN CHANGES TO NONNUCLEAR SAFETY-RELATED EQUIPMENT, SUCH AS THE RPVRI, AND MAKE REVISIONS AS NECESSARY TO ENSURE THAT SUCH DESIGN CHANGES DO NOT ADVERSELY AFFECT SAFETY-RELATED SYSTEMS. 2. REVIEW PROCEDURES FOR REPORTING SIGNIFICANT DESIGN/CONSTRUCTION DEFICIENCIES, PURSUANT TO 10CFR PART 50.55 (e), AND MAKE CHANGES AS NECESSARY TO ENSURE THAT COMPLETE EVALUATIONS ARE SPECIFIED. 3. PROVIDE ANALYSIS THAT VERIFIES THAT THE COOLING FLOW IN THE ANNULUS BETWEEN THE RPVRI AND THE SHIELD WALL OF UNIT 2 IS ADEQUATE FOR THE AS-BUILT CONDITION. 4. VERIFY DURING UNIT 1 HOT FUNCTIONAL TESTING THAT COMPLETED MODIFICATIONS TO THE RPVRI SUPPORT RING NOW ALLOW ADEQUATE COOLING AIR FLOW TRT NOTED THAT CONTROL OF DEBRIS IN CRITICAL SPACINGS BETWEEN COMPONENTS AND/OR STRUCTURES WAS IDENTIFIED AS AN ISSUE BOTH IN THE INVESTIGATION OF THIS ALLEGATION AND IN THE CIVIL AND STRUCTURAL AREA CONTAINED IN DARRELL G. EISENHUT's LETTER OF SEPTEMBER 18, 1984, TO TU ELECTRIC. ACCORDINGLY, TU ELECTRIC SHALL ALSO: 1. IDENTIFY AREAS IN THE PLANT WITH SPACING BETWEEN COMPONENTS AND/OR STRUCTURES THAT ARE NECESSARY FOR PROPER FUNCTIONING OF SAFETY-RELATED	WAS A BREAKDOWN IN COMMUNICATION BETWEEN WESTINGHOUSE AND GIBBS & HILL DURING THE DEVELOPMENT OF THE ORIGINAL INSULATION DESIGN. NO OTHER INSTANCES OF COMMUNICATION BREAKDOWNS BETWEEN WESTINGHOUSE AND CPSES CONTRACTORS WERE IDENTIFIED. THE INVESTIGATION OF THE POTENTIAL FOR DESIGN CHANGES TO NON-NUCLEAR SAFETY-RELATED EQUIPMENT TO HAVE AN ADVERSE IMPACT ON SAFETY-RELATED SYSTEMS, STRUCTURES, OR COMPONENTS CAUSED CPRT TO CONCLUDE THAT THERE WAS NO BASIS TO SUSPECT THAT THIS HAD OCCURRED. NO SAFETY-SIGNIFICANT INTERACTIONS WERE IDENTIFIED DURING THE COURSE OF THE REVIEW. THIS, AND THE SCOPE OF HARDWARE AND DESIGN EVALUATIONS PROVIDED BY CPRT, YIELDED REASONABLE ASSURANCE THAT DESIGN CHANGES TO NON-NUCLEAR SAFETY-RELATED EQUIPMENT HAD NOT ADVERSELY AFFECTED SAFETY-RELATED SYSTEMS. WEAKNESSES IN THE DESIGN CHANGE REVIEW PROCEDURES HAVE BEEN IDENTIFIED BY BOTH CPRT AND THE CPSES PROJECT, WITH THE PROJECT COMMITTING TO STRENGTHEN THESE PROCEDURES. THE PROCEDURAL CHANGES PROPOSED BY THE PROJECT WERE DETERMINED TO BE ACCEPTABLE BY CPRT. THE CRITICAL SPACES PROGRAM WAS ESTABLISHED BY THE CPSES PROJECT TO SATISFY TRT REQUIREMENTS, NAMELY: -SPACES IN THE PLANT WHERE DEBRIS MAY COLLECT AND BE UNDETECTED OR DIFFICULT TO REMOVE WERE IDENTIFIED, -THE IDENTIFIED SPACES WERE VERIFIED TO BE FREE OF DEBRIS BY EXISTING RECORDS OR BY INSPECTIONS DONE AS PART OF ISAP VI.A. NONCONFORMANCES WERE IDENTIFIED AND THE APPROPRIATE CORRECTIVE ACTION TAKEN (i.e., DEBRIS REMOVAL OR DEVELOPMENT OF A TECHNICAL JUSTIFICATION FOR NOT INSPECTING AND/OR REMOVING DEBRIS IN SPECIFIC CASES), AND -A PROGRAM (i.e., PROCEDURES AND TRAINING) TO MINIMIZE THE COLLECTION OF DEBRIS IN CRITICAL SPACES FOLLOWING TURNOVER TO OPERATIONS WAS DEVELOPED. EACH PHASE OF THE CRITICAL SPACES PROGRAM LISTED ABOVE HAS BEEN REVIEWED OR OVERVIEWED BY CPRT AND DETERMINED TO BE ADEQUATE. CPRT EVALUATED THE UNCLASSIFIED DEVIATION ASSOCIATED WITH DEBRIS FOUND IN CRITICAL SPACES TO IDENTIFY ROOT CAUSES AND GENERIC IMPLICATIONS. THIS EVALUATION FOUND THAT THE FAILURE OF DESIGN SPECIFICATIONS TO DEFINE CLEANLINESS REQUIREMENTS FOR CRITICAL

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		COMPONENTS, SYSTEMS, OR STRUCTURES IN WHICH UNWANTED DEBRIS MAY COLLECT AND BE UNDETECTED OR BE DIFFICULT TO REMOVE. 2. INSPECT THE AREAS AND SPACES IDENTIFIED AND REMOVE DEBRIS. 3. INSTITUTE A PROGRAM TO MINIMIZE THE COLLECTION OF DEBRIS IN CRITICAL SPACES AND PERIODICALLY REINSPECT THESE SPACES AND REMOVE ANY DEBRIS WHICH MAY BE PRESENT.	SPACES WAS THE PROBABLE ROOT CAUSE. CPRT CONCLUDED THAT, DUE TO THE COMPREHENSIVE NATURE OF THE CORRECTIVE ACTIONS IMPLEMENTED, GENERIC IMPLICATION CONSIDERATIONS HAVE BEEN COMPLETELY ADDRESSED. INSPECTIONS OF IDENTIFIED CRITICAL SPACES WILL CONTINUE AS THE ASSOCIATED EQUIPMENT/STRUCTURES BECOME AVAILABLE THROUGH THE ROOM TURNOVER PROCESS. NONCONFORMANCES IDENTIFIED AS PART OF THE COMPLETED INSPECTIONS ARE BEING RESOLVED THROUGH THE DISPOSITION OF NONCONFORMANCE REPORTS (NCRs) WITH DISPOSITIONS THAT EXEMPT AN ITEM (OR ITEMS) FROM INSPECTIONS SUBJECT TO A TECHNICAL REVIEW CONDUCTED BY THE PROJECT. (ISAP VI.A RESULTS REPORT PG 39-41). THE CPRT RESULTS RESOLVE THIS ISSUE. THE CPRT RESOLUTION OF ISSUES CONCERNING THE 10 CFR 50.55(e) REPORTABILITY SYSTEM IS SUMMARIZED UNDER ITEM 11.06.
SSER: 08 ALLEG: AM-13 ITEM: 08.42	PUMPS MANUFACTURED BY THE HAYWARD TYLER COMPANY WERE INSTALLED IN COMANCHE PEAK SAFETY SYSTEMS. THESE PUMPS MAY HAVE UNIDENTIFIED DEFICIENCIES BECAUSE OF THE POOR QA PROGRAM AT HAYWARD TYLER. REF. PG. K-117.	TRT --- TRT CONCLUDED THAT TU ELECTRIC HAD IDENTIFIED HAYWARD TYLER PUMPS ONSITE, TESTED THE PUMPS, AND REPORTED RESULTS AS REQUIRED BY NRC OFFICE OF INSPECTION AND ENFORCEMENT BULLETIN (IEB) 83-05. TRT ALSO CONCLUDED THAT THE ALLEGATION HAD POTENTIAL SAFETY SIGNIFICANCE AND GENERIC IMPLICATIONS. HOWEVER, TU ELECTRIC's COMPLIANCE WITH IEB 83-05 HAS ELIMINATED THOSE CONCERNS WITH RESPECT TO UNIT 1 STATION SERVICE WATER PUMPS (SSWPs). THE UNIT 2 PUMPS WILL BE INSPECTED DURING UNIT 2 PREOPERATIONAL TESTING. ACTION REQUIRED --- TU ELECTRIC SHALL VERIFY COMPLIANCE WITH IEB 83-05 REQUIREMENTS FOR CPSES UNIT 2 SSWPs DURING PREOPERATIONAL TESTING FOR UNIT 2.	CPRT --- THE TRT REQUIRED ACTION IS ADDRESSED BY THE PROJECT. UNIT 2 PUMPS WILL BE TESTED UNDER ITEM 2C2PT-0401 OF THE PREOPERATIONAL TEST LIST.
SSER: 08 ALLEG: AM-15 ITEM: 08.44A	SHIMS FOR THE RAIL SUPPORT SYSTEM FOR THE POLAR CRANE WERE ALTERED DURING INSTALLATION. REF. PG. K-121.	TRT --- TRT OBSERVED LARGE GAPS BETWEEN SHIMS AND THE 28 CRANE GIRDER-TO-GIRDER SUPPORT BRACKETS. IN ADDITION, TRT OBSERVED THAT NINE GIRDERS HAD GAPS IN EXCESS OF 1/16 INCH EXTENDING UNDER THE BOTTOM FLANGE; THAT THE	CPRT --- CPRT, UNDER ISAP VI.B, DETERMINED THAT GIBBS & HILL (G&H) DESIGN CALCULATIONS WERE INCOMPLETE IN SOME AREAS. STONE & WEBSTER ENGINEERING CORPORATION (SWEC) REVIEWED THE POLAR CRANE RAIL DESIGN AS PART OF THE CORRECTIVE ACTION PROGRAM (CAP). SWEC

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		COMPLETE RAIL HAD MOVED CIRCUMFERENTIALLY; THAT THE 3/8 INCH DESIGNED GAP BETWEEN THE ENDS OF THE RAIL SECTION VARIED FROM 0.0 INCHES TO 0.875 INCHES; AND THAT RAIL-TO-RAIL GROUND WIRES AND TWO CADWELDS WERE BROKEN. BASED ON THE ABOVE INSPECTIONS, TRT CONCLUDED THAT THE ALLEGATION WAS SUBSTANTIATED AND WAS POTENTIALLY SAFETY SIGNIFICANT. IN APPENDIX F, SPSR-11, TRT CHARACTERIZED THIS ITEM AS AN ISOLATED OCCURRENCE, OR VERY FEW OCCURRENCES, WITH NO GENERIC IMPACT. ACTIONS REQUIRED --- TU ELECTRIC SHALL: 1. INSPECT THE POLAR CRANE RAIL GIRDER SEAT CONNECTIONS FOR THE PRESENCE OF GAPS THAT REDUCE THE BEARING SURFACE TO LESS THAN THE WIDTH OF THE BOTTOM FLANGE. 2. PERFORM AN ANALYSIS THAT WILL DETERMINE WHETHER EXISTING GAPS ARE ACCEPTABLE OR IF CORRECTIVE ACTIONS ARE REQUIRED. TU ELECTRIC SHALL DETERMINE IF ADDITIONAL RAIL MOVEMENT IS OCCURRING AND, IF SO, PROVIDE AN EVALUATION OF SAFETY SIGNIFICANCE AND THE NEED FOR CORRECTIVE ACTION. 3. PERFORM A GENERAL INSPECTION OF THE POLAR CRANE RAIL AND THE RAIL SUPPORT SYSTEM, CORRECT IDENTIFIED DEFICIENCIES OF SAFETY SIGNIFICANCE, AND PROVIDE AN ASSESSMENT OF THE ADEQUACY OF EXISTING MAINTENANCE AND/OR SURVEILLANCE PROGRAMS. THE GAPS IN THE SEISMIC RESTRAINTS WERE THE SUBJECT OF NRC INSPECTION REPORTS 50-445/82-11, 50-446/82-10, AND 50-445/84-08. VIOLATIONS WERE ISSUED IN EACH REPORT. ALTHOUGH THESE MATTERS MAY HAVE BEEN EVALUATED AND A RESPONSE MADE TO THE REFERENCED VIOLATIONS, TU ELECTRIC SHALL CONSIDER THIS MATTER AS A PART OF THE INSPECTION OF THE POLAR CRANE SYSTEM.	REVISED THE POLAR CRANE LOAD ANALYSIS, ANALYZED AND DESIGNED MODIFICATIONS TO CORRECT RAIL MOVEMENT PROBLEMS, ANALYZED AND DESIGNED NEW RAIL CLIPS, AND PERFORMED ANALYSIS TO ASSURE ADEQUACY OF THE GIRDER SEAT CONNECTIONS. CPRT DEVELOPED AND EVALUATED RAIL MOVEMENT TEST DATA, INVESTIGATED THE CAUSE OF RAIL MOVEMENT AND RECOMMENDED MODIFICATIONS TO CORRECT THE PROBLEM, OVERVIEWED GENERAL INSPECTION OF THE RUNWAY SYSTEM, EVALUATED SIGNIFICANCE OF GAPS IN THE GIRDER SEAT CONNECTIONS, RECOMMENDED CHANGES TO MAINTENANCE AND SURVEILLANCE PROGRAMS, REVIEWED THE DESIGN AND EVALUATED RESOLUTIONS. THE ALLEGATION FOR POLAR CRANE RAIL MOVEMENT WAS CLASSIFIED AS A DESIGN DEVIATION, REQUIRING A SAFETY-SIGNIFICANCE EVALUATION. CPRT DECIDED NOT TO INVESTIGATE THE POTENTIAL SAFETY SIGNIFICANCE OF THIS DEVIATION AND TO PROCEED DIRECTLY TO CORRECTIVE ACTION. INVESTIGATIONS BY THE CPSES PROJECT, AS WELL AS BY CPRT, CONFIRMED THAT THE EARLIER ATTEMPTS TO CONTROL THE CIRCUMFERENTIAL MOVEMENT OF THE CRANE RAILS WERE INADEQUATE. CPRT CONCLUDED THAT THE RAIL SPLICE DESIGN PROPOSED BY G&H AND FINALIZED BY SWEC WILL CORRECT ANY PROBLEMS OF MISALIGNED RAIL ENDS AT THE JOINTS. THE ANALYTICAL WORK BY SWEC SUPPORTS A CONCLUSION THAT THE SPLICE BARS WILL BE STRUCTURALLY ADEQUATE TO LIMIT THE GAPS BETWEEN RAIL ENDS TO THE PRESCRIBED MAXIMUMS WITHOUT UNDULY RESTRICTING THE CAPABILITY OF THE RAIL SUPPORT SYSTEM TO ALLOW FOR EXPANSIONS AND CONTRACTIONS RESULTING FROM TEMPERATURE VARIATIONS AND POSTULATED ACCIDENT CONDITIONS. (ISAP VI.B RESULTS REPORT PG 29 AND 32). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER 08	THE POLAR CRANE RAIL MOVES	SEE ITEM 8.44A, AM-15.	

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
ALLEG: AM-16 ITEM: 08.44B	DURING CRANE OPERATION SUCH THAT LARGE GAPS DEVELOP. REF. PG. K-121.		
SSER: 08 ALLEG: AM-19 ITEM: 08.47	THE POSTING REQUIREMENTS FOR NRC FORM 3 WERE NOT MET FROM 1977-1982. REF. PG. K-131.	TRT --- BASED ON THE REVIEW OF NRC AND TU ELECTRIC DEPOSITIONS; INTERVIEWS WITH THE RADIATION PROTECTION ENGINEER (RPE), THE TU ELECTRIC ADMINISTRATIVE AND CONTROL SUPERVISOR AND THE TEXAS UTILITIES SERVICE INC. PERSONNEL MANAGER; AND INSPECTION OF BULLETIN BOARDS THAT WERE IN PLACE, TRT CONCLUDED THAT LETTERS WERE POSTED PRIOR TO OCTOBER 1982 AND THAT THE NRC FORM-3 WAS POSTED IN A SUFFICIENT NUMBER OF PLACES TO MEET THE INTENT OF APPLICABLE REGULATIONS AFTER THE POSTING REQUIREMENTS BECAME EFFECTIVE ON OCTOBER 12, 1982. BECAUSE THERE WAS NO REQUIREMENT TO POST NRC FORM-3 BETWEEN 1977 AND OCTOBER 1982 AND THE FORM WAS POSTED FOR THE BALANCE OF 1982 UNTIL THE PRESENT, THIS ALLEGATION WAS NOT SUBSTANTIATED. ACTION REQUIRED --- TU ELECTRIC SHALL FORMALLY ESTABLISH IN WRITING THE ASSIGNMENT OF RESPONSIBILITY FOR POSTING AND MAINTAINING NRC FORM-3 IN PROMINENT LOCATIONS.	CPRT --- THE TRT REQUIRED ACTION IS ADDRESSED DIRECTLY BY THE PROJECT IN RED 1.06.
SSER: 08 ALLEG: AM-21 ITEM: 08.49	THERE WAS WIDESPREAD DRUG ABUSE AT COMANCHE PEAK, AND MANAGEMENT DID NOT GIVE PROPER ATTENTION TO THIS PROBLEM. REF. PG. K-133.	TRT --- TRT CONCLUDED THAT TU ELECTRIC HAD PERFORMED AN INVESTIGATION, IDENTIFIED BROWN & ROOT (B&R) PERSONNEL IMPLICATED BY THEIR REFUSAL TO TAKE POLYGRAPH TESTS AND TERMINATED EMPLOYMENT OF THOSE PERSONNEL. TU ELECTRIC WROTE A NONCONFORMANCE REPORT THAT IDENTIFIED ALL WORK PERFORMED BY THE IMPLICATED B & R INSPECTORS AND REINSPECTED THAT WORK WITH DIFFERENT INSPECTORS. THE REINSPECTION IDENTIFIED ONLY MINOR DEFICIENCIES THAT WERE REFERRED TO ENGINEERING FOR FINAL EVALUATION AND CORRECTION. THIS ALLEGATION APPEARED TO HAVE SOME SUBSTANCE. WITH RESPECT TO MANAGEMENT, TRT CONCLUDED THAT TU ELECTRIC AND SITE CONTRACTOR MANAGEMENT AND SUPERVISION HAD IMPLEMENTED STRONG MEASURES TO PREVENT	CPRT --- THE TRT REQUIRED ACTION IS ADDRESSED DIRECTLY BY THE PROJECT.

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		DRUG USE AND ABUSE BY CPSES PERSONNEL. IN FACT, COMMITMENTS TO SUCH A PROGRAM EXCEEDED EXISTING NRC REQUIREMENTS AND STANDARDS. THEREFORE, THERE WAS NO EVIDENCE THAT MANAGEMENT DID NOT GIVE PROPER ATTENTION TO THE ALLEGED PROBLEM TO PREVENT DRUG ABUSE OR DEAL WITH THE INCIDENT THAT OCCURRED. ACTION REQUIRED --- TU ELECTRIC SHALL PROVIDE A REPORT OF FINDINGS INCLUDING THE FINAL ENGINEERING ANALYSIS OF THE MINOR DEFICIENCIES RESULTING FROM THE REINSPECTION OF WORK PERFORMED BY INSPECTORS IMPLICATED IN DRUG ABUSE.	
SSER: 10 ALLEG: AW-34 ITEM: 10.001	TEMPORARY HANGER WAS WELDED WITHOUT PROCEDURES OR BY AN UNQUALIFIED WELDER. REF. PG H-37	TRT --- TRT FOUND TEMPORARY HANGERS WERE USED AND EXCEPT FOR ATTACHMENT WELDS TO COMPONENTS OR PERMANENT PLANT STRUCTURES, NO WRITTEN PROCEDURES EXISTED. IN APPENDIX F, SSER-11, TRT CHARACTERIZED THIS ALLEGATION AS NOT SO FREQUENTLY AS TO IMPLY A GENERIC PROBLEM. ACTION REQUIRED --- TU ELECTRIC SHALL MODIFY GIBBS & HILL (G&H) SPECIFICATION 2323-MS-100 REQUIREMENTS AND PROVIDE PROCEDURES FOR THE FABRICATION AND INSTALLATION OF TEMPORARY SUPPORTS TO ASSURE THAT THE QUALITY OF PIPING AND EQUIPMENT SO SUPPORTED IS NOT ADVERSELY AFFECTED. THIS ACTION IS RELATED TO THAT REQUIRED FOR MECHANICAL & PIPING CATEGORY II, ALLEGATION AP-13, ITEM 1.	CPRT --- CPRT, UNDER ISAP V.E, REVIEWED ENGINEERING, CONSTRUCTION, QA/QC, AND STARTUP PROCEDURES RELATED TO THE USE OF TEMPORARY PIPE SUPPORTS. THE GIBBS & HILL PIPING ERECTION SPECIFICATION, SPEC 2323-MS-100, AND THE BROWN & ROOT PIPE FABRICATION AND INSTALLATION PROCEDURE, CP-CPM-6.9E, WERE MODIFIED TO STRENGTHEN EXISTING PRACTICES REGARDING TEMPORARY SUPPORTS. (ISAP V.E RESULTS REPORT, PG 42, 43, 66, AND 67). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 10 ALLEG: AW-14 ITEM: 10.005	HOLES THAT HAD BEEN DRILLED IN INCORRECT LOCATIONS IN BASE PLATES, PIPE SUPPORTS AND CABLE TRAY SUPPORTS WERE PLUG WELDED IN AN UNCONTROLLED MANNER. AW-48, 51, 55 AND AW-13 ARE DUPLICATE ISSUES OF THIS	TRT --- AN INSPECTION BY THE NRC REGION IV OFFICE IDENTIFIED INDICATIONS OF UNAUTHORIZED PLUG WELDS. TU ELECTRIC CONCURRED WITH THE NRC FINDINGS AND ISSUED NONCONFORMANCE REPORTS. DISPOSITION ACTION FOR THE REPORTS CONFIRMED THE PRESENCE OF UNAUTHORIZED PLUG	CPRT --- TRT REQUIRED ACTIONS WERE CARRIED OUT UNDER ISAP V.D. CPRT DETERMINED THAT THE REPAIR OF MISLOCATED HOLES WAS NOT AUTHORIZED IN ASME PIPE SUPPORTS AND THEIR BASE PLATES. TRT FOUND NO PLUG WELDS IN THE SUPPORTS INSPECTED AND CONCLUDED THERE WAS REASONABLE ASSURANCE THAT NO UNAUTHORIZED OR UNDOCUMENTED PLUG WELDS WERE

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	CONCERN. REF. PG. N-57.	WELDS. TRT CONCLUDED THAT THE EXISTENCE OF THESE WELDS AND THE DIFFICULTY IN DETECTING THEM RAISED A GENERIC CONCERN REGARDING THE POTENTIAL EXISTENCE OF AN UNKNOWN NUMBER OF UNAUTHORIZED PLUG WELD REPAIRS OF QUESTIONABLE QUALITY IN HUNDREDS OF BASE PLATES, PIPE SUPPORTS, AND CABLE TRAY SUPPORTS THROUGHOUT UNITS 1 AND 2. POTENTIALLY DEFECTIVE WELDS LOCATED IN HIGHLY STRESSED AREAS COULD HAVE SAFETY SIGNIFICANCE. ACTIONS REQUIRED --- TU ELECTRIC SHALL ACCOMPLISH ONE OF THE FOLLOWING: 1. MODIFY ITS PROPOSED INSPECTION PLAN TO NRC REGION IV (TXX-4183 AND TXX-4259) TO INCLUDE: (1) A SAMPLING PLAN TO CONDUCT INSPECTION OF CABLE TRAY SUPPORTS, PIPE SUPPORTS AND BASEPLATES IN ALL AREAS OF THE PLANT AND (2) ALTERNATE METHODS OF INSPECTION WHERE THE OBLIQUE LIGHTING METHOD IS NOT VIABLE (e.g., LOCATIONS COVERED [illegible] HEAVY COATS OF PAINTS). TU ELECTRIC SHALL ALSO PERFORM ASSESSMENTS OF THE EFFECTS ON QUALITY DUE TO UNCONTROLLED PLUG WELDS FOUND DURING THE PROPOSED INSPECTIONS. A REPORT DOCUMENTING THE RESULTS OF INSPECTIONS AND ASSESSMENTS SHALL BE SUBMITTED TO TRT FOR REVIEW. 2. PERFORM BOUNDING ANALYSES TO ASSESS THE GENERIC EFFECTS OF UNCONTROLLED PLUG WELDS ON THE ABILITY OF PIPE SUPPORTS, CABLE TRAY SUPPORTS AND BASEPLATES TO SERVE THEIR INTENDED FUNCTIONS. A REPORT DOCUMENTING THE RESULTS OF ASSESSMENTS SHALL BE SUBMITTED TO TRT FOR REVIEW.	PRESENT. THE REPAIR OF MISLOCATED OR UNUSED HOLES WAS AUTHORIZED FOR CABLE TRAY SUPPORTS AND A NUMBER OF OTHER AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) COMPONENTS. APPLICABLE CONSTRUCTION AND INSPECTION PROCEDURES HAVE CONSISTENTLY REQUIRED THAT THESE WELDS BE MADE USING QUALIFIED WELDERS AND WELD PROCEDURES AND INSPECTED IN ACCORDANCE WITH AWS D1.1 VISUAL EXAMINATION CRITERIA. BASED ON THE RESULTS OF INSPECTIONS, PROCEDURE REVIEWS, AND BOUNDING EVALUATIONS PERFORMED, CPRT CONCLUDED THAT THERE WAS REASONABLE ASSURANCE THAT UNDOCUMENTED PLUG WELDS NOT REINSPECTED UNDER ISAP V.D WOULD NOT COMPROMISE THE STRUCTURAL INTEGRITY OF THE COMPONENTS. CPRT ALSO CONCLUDED THAT ADEQUATE JUSTIFICATION WAS NOT PROVIDED FOR THE CRITERIA WHICH PERMITTED UNUSED BOLT HOLES TO REMAIN UNWELDED IN CABLE TRAY SUPPORTS, CONDUIT SUPPORTS AND INSTRUMENT TUBE SUPPORTS. THE CABLE TRAY SUPPORT REQUALIFICATION PROGRAM HAS ALREADY INCLUDED THE EVALUATION OF UNUSED BOLT HOLES AND THE PROJECT IS ASSESSING THE SIGNIFICANCE OF UNUSED HOLES IN INSTRUMENT TUBING AND CONDUIT SUPPORTS. (ISAP V.D RESULTS REPORT PG 28, 35, AND 36). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SER: 10 ALLEG: AW-49 ITEM: 10.003A	THIS ALLEGATION DUPLICATES AW-14. REF. PG. N-57	SEE ITEM 10.005, AW-14.	
SER: 10 ALLEG: AW-51 ITEM: 10.005B	THIS ALLEGATION DUPLICATES AW-14. REF. PG. N-57	SEE ITEM 10.005, AW-14.	
SER: 10 ALLEG: AW-55	THIS ALLEGATION DUPLICATES AW-14.	SEE ITEM 10.005, AW-14.	

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ITEM: 10.005C	REF. PG. H-57		
SSER: 10 ALLEG: AP-04 ITEM: 10.010	TWO OR THREE 100-TON JACKS WERE USED TO COLD SPRING A 28-INCH LINE IN THE REACTOR COOLANT SYSTEM. REF.PG.H-99	TRT --- TRT WAS NOT ABLE TO SUBSTANTIATE THE ALLEGATION REGARDING SPRINGING IN THE REACTOR COOLANT SYSTEM (RCS) PIPING. TRT BELIEVED THAT THE ALLEGER HAD MISTAKENLY IDENTIFIED JACKING ACTIVITIES DURING INSTALLATION OF HOT-LEG PIPING BETWEEN THE REACTOR VESSEL AND THE STEAM GENERATOR AS SPRINGING ACTIVITIES. JACKING WAS USED TO MAINTAIN VERTICAL POSITIONING OF THE STEAM GENERATOR DURING AXIAL MOTIONS OF THE HOT LEG PIPING DUE TO WELD SHRINKAGE DURING WELDING. OTHER TRT INVESTIGATIONS OF COLD SPRINGING AND SPRINGING DETERMINED THAT NO PIPING SYSTEMS WERE INTENDED TO BE, OR HAD BEEN, COLD SPRUNG BUT THAT, CONTRARY TO THE REQUIREMENTS OF TU ELECTRIC PROCEDURE CP-EP-4.0, UNAUTHORIZED AND UNDOCUMENTED SPRINGING OF PIPING SYSTEMS HAD OCCURRED. TRT, HOWEVER, CONCLUDED THAT THE SAFETY SIGNIFICANCE OF THE UNAUTHORIZED AND UNDOCUMENTED SPRINGING PRACTICE MIGHT BE NEGLIGIBLE. TRT ALSO FOUND THAT EBASCO & ROOT (B&R) PROCEDURES CP-CPM-6.9E & QI-QAP 11.1.26 FAILED TO REFLECT ADEQUATELY SPRINGING AND COLD SPRINGING REQUIREMENTS IN ALL ISSUES OF GIBBS & HILL (G&H) SPECIFICATION 2323-MS-100.	CPRT ---- CPRT, UNDER ISAP V.E, DETERMINED FROM A REVIEW OF THE APPLICABLE SPECIFICATION AND PROCEDURES AND INTERVIEWS WITH SITE PERSONNEL, THAT SPRINGING WAS NOT PERMITTED TO ACHIEVE FITUP. THAT RESTRICTION WAS WELL UNDERSTOOD. A REVIEW OF NONCONFORMANCE REPORTS CONFIRMED THAT SPRINGING WAS NOT A COMMON PRACTICE IN ACHIEVING FITUP. THERE WERE NO INDICATIONS IN SOME 15,000 MECHANICAL PIPING NONCONFORMANCE REPORTS (NCRs), EXISTING AT THE TIME OF IMPLEMENTATION OF ISAP V.E, THAT PIPING HAD BEEN FORCED, OR SPRUNG, INTO POSITION TO ACCOMMODATE FITUP. (ISAP V.E RESULTS REPORT PG 30, 31, 37, 38 AND 46). A REVIEW OF ENGINEERING, CONSTRUCTION, QA/QC, AND START-UP PROCEDURES RELATED TO THE USE OF TEMPORARY PIPE SUPPORTS, INCLUDING CP-CPM-6.9E AND QA-QAP 11.1.26, WAS PERFORMED. CPRT CONCLUDED THAT REVISIONS ADEQUATELY ADDRESSED PROJECT INTENTIONS AND TRT-REQUIRED ACTIONS. (ISAP V.E RESULTS REPORT, PG 42-44). THE CPRT RESULTS RESOLVE THIS ISSUE. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
SSER: 10 ALLEG: AI 13 ITEM: 10.011	USING THE POLAR CRANE AND 3-TON COME ALONGS, A 32-INCH MAIN STEAM LINE WAS FORCED 6-INCHES VERTICALLY AND 4-INCHES HORIZONTALLY. REF. PG. H-99	TRT --- TRT INVESTIGATION CONCLUDED THAT THE ALLEGATION WAS SUBSTANTIATED IN PART. TRT FOUND THAT THE ALLEGER HAD MISTAKENLY IDENTIFIED THE REPOSITIONING OF THE UNIT 1, LOOP 1, MAIN STEAM LINE DUE TO THE SETTLEMENT OF TEMPORARY SUPPORTS AS THE CORRECTION OF ALIGNMENT ERRORS DURING INITIAL INSTALLATION. TU ELECTRIC'S ANALYSIS TO ASSESS STRESSES IN THE MAIN STEAM LINE DUE TO THE REPOSITIONING OPERATIONS WAS INADEQUATE BECAUSE STRESSES DUE TO THE FULL SEQUENCE OF EVENTS INVOLVED IN THE INCIDENT WERE NOT EVALUATED. TRT ALSO DETERMINED THAT SIMILAR REPOSITIONING	CPRT ---- CPRT INITIATED ISAP V.E TO INVESTIGATE THE ALLEGATION AND RESPOND TO THE EIGHT ACTIONS REQUIRED BY TRT. THE CPRT INVESTIGATION FOUND THAT THE OFF-LOCATION CONDITION OF THE LINE EXISTED AND WAS CORRECTED PRIOR TO FLUSHING, AND THUS WAS NOT CAUSED BY THE WEIGHT OF WATER ADDED DURING THE FLUSHING OPERATIONS. HAVING ESTABLISHED THE SEQUENCE OF EVENTS THROUGH REVIEW OF DOCUMENTS AND PERSONNEL INTERVIEWS, CPRT PERFORMED STRESS ANALYSES OF THE UNIT 1, LOOPS 1 AND 4, MAIN STEAM PIPING INSIDE THE CONTAINMENT. THESE ANALYSES PROVIDED AN ASSESSMENT OF PIPE STRESSES PRIOR TO, DURING, AND AFTER THE LIFT ACTIVITIES AND SUBSEQUENT FLUSHING. IN ADDITION TO THESE ANALYSES, RECORDS OF ULTRASONIC EXAMINATIONS AND HYDROTESTS WERE REVIEWED TO DETERMINE WHETHER ANY ANOMALIES WERE APPARENT

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OPERATIONS HAD BEEN PERFORMED ON THE UNIT 1, LOOP 4, MAIN STEAM LINE. TU ELECTRIC HAD NOT ASSESSED THIS INCIDENT.

TRT ALSO FOUND THAT THE BROWN & ROOT (B&R) CONSTRUCTION PRACTICE OF USING TEMPORARY SUPPORTS DURING PIPING ERECTION WAS NOT IN COMPLIANCE WITH THE GIBBS & HILL (G&H) SPECIFICATION 2323-MS-100 REQUIREMENTS.

TRT CONCLUDED THAT THE ALLEGATION HAS SAFETY SIGNIFICANCE AND GENERIC IMPLICATIONS. ADDITIONAL INFORMATION REQUIRED TO RESOLVE CONCERNS RELATED TO THE ALLEGATION WAS REQUESTED IN AN NRC LETTER DATED NOVEMBER 29, 1984.

ACTIONS REQUIRED

TRT WILL REQUIRE THE FOLLOWING TU ELECTRIC ACTIONS:

1. MODIFY GIBBS & HILL SPECIFICATION 2323-MS-100, AND INSTITUTE PROCEDURES TO SUPPORT THE MAIN STEAM LINE DURING FLUSHING AND PROVIDE TEMPORARY SUPPORTS FOR PIPING AND EQUIPMENT IN GENERAL TO ASSURE THAT THE QUALITY OF AFFECTED PIPING AND EQUIPMENT IS NOT AFFECTED.

2. ASSESS STRESSES IN THE PORTIONS OF THE UNIT 1, LOOP 1, MAIN STEAM AND FEEDWATER LINES THAT WERE AFFECTED IN THE SEQUENCE OF EVENTS INVOLVED DURING THEIR INITIAL INSTALLATION, FLUSHING AND FINAL INSTALLATION. CONDITIONS OF CONCERN ARE:
a. THE CONDITION WHEN THE LINES WERE FULL OF WATER AND TEMPORARY SUPPORTS HAD SAGGED OR SETTLED.
b. THE CONDITION WHEN VIBRATIONS OF THE TEMPORARY LINE COULD HAVE OCCURRED.
c. THE CONDITION WHEN FORCES WERE APPLIED BY THE POLAR CRANE AND COME-ALONGS.

THESE ASSESSMENTS SHALL BE BASED ON APPROPRIATE PIPING CONFIGURATIONS INVOLVED.

3. PERFORM A NONDESTRUCTIVE EXAMINATION OF LOCATIONS IN THE UNIT 1, LOOP 1, MAIN STEAM AND

THAT MIGHT BE ASSOCIATED WITH THE SEQUENCE OF EVENTS. FURTHER INVESTIGATION INCLUDED A REEXAMINATION OF PIPE WELDS IN REGIONS OF HIGHEST PREDICTED STRESSES. THE RESULTS OF THESE EVALUATIONS INDICATED THAT PIPE STRESS LEVELS THROUGHOUT THE SEQUENCE WERE WELL WITHIN ALLOWABLE LIMITS AND THERE WERE NO INDICATIONS OF DAMAGE OR DETRIMENTAL EFFECTS. THE EIGHT TRT REQUIRED ACTIONS WERE COMPLETED WITH SATISFACTORY RESULTS. (ISAP V.E RESULTS REPORT PG 11 AND 44-47).

TSE CPRT RESULTS RESOLVE THIS ISSUE.

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		FEEDWATER PIPING INVOLVED WHERE STRESSES GREATER THAN RELEVANT STRESS ALLOWABLES WERE EXCEEDED DURING THE CONDITIONS OF CONCERN IN 2a. THROUGH 2c. ABOVE. 4. REVIEW THE EXISTING BASELINE ULTRASONIC EXAMINATIONS FOR THOSE PORTIONS OF THE UNIT 1, LOOP 1, MAIN STEAM AND FEEDWATER PIPING INVOLVED IN ALL THE CONDITIONS OF CONCERN IN 2a. THROUGH 2c. ABOVE FOR UNACCEPTABLE INDICATIONS. 5. REVIEW RECORDS OF HYDROSTATIC TESTING OF THE UNIT 1, LOOP 1, MAIN STEAM AND FEEDWATER PIPING TO VERIFY THE QUALITY OF PIPING INVOLVED IN THE INCIDENT. 6. PROVIDE SIMILAR ASSESSMENTS FOR CIRCUMSTANCES INVOLVED IN THE LIFTING INCIDENT IDENTIFIED DURING TRT INSPECTIONS OF THE UNIT 1, LOOP 4, MAIN STEAM LINE. 7. PROVIDE ASSESSMENTS OF EFFECTS ON QUALITY OF SAFETY-RELATED PIPING AND EQUIPMENT WHICH WERE INVOLVED IN SIMILAR INCIDENTS OF SAGGING, SETTLEMENTS AND FAILURES, IF ANY, OF TEMPORARY SUPPORTS. 8. DOCUMENT THE RESULTS OF ANALYSIS, EXAMINATIONS AND REVIEWS AND SUBMIT THEM IN A REPORT FOR TRT REVIEW.	
SSER: 10 ALLEG: AP-15 ITEM: 10.014	IN SEPTEMBER 1982, A PIPE THAT WAS 1/2 INCH OUT-OF-ROUND WAS INSTALLED IN THE CONTAINMENT SPRAY SYSTEM. DURING ITS INSTALLATION, THE PIPE WAS BUTTERED EXTENSIVELY TO ACHIEVE THE REQUIRED MINIMUM WALL THICKNESS. REF. PG. N-119	TRT --- THE TRT INVESTIGATION SUBSTANTIATED THE ALLEGATION THAT THE 1/2-INCH OUT-OF-ROUND NONCONFORMING PIPE WAS BUTTERED EXTENSIVELY. TRT FOUND THAT EXTENSIVE WELD METAL SURFACING WAS PERFORMED IN THE VICINITY OF WELD FW 13-4A TO REPAIR AN EXTENSIVE AREA OF MINIMUM WALL THICKNESS VIOLATION. TRT COULD NOT SUBSTANTIATE THE ALLEGATION THAT UNEVEN BUTTERING WAS PERFORMED TO ACHIEVE FITUP. THE WELD DATA PACKAGE INDICATED THAT PROPER FITUP AND ACCEPTABLE VISUAL AND RADIOGRAPHIC INSPECTION RESULTS WERE OBTAINED. CONSERVATIVE CALCULATIONS PERFORMED BY TRT TO EVALUATE THE INSTALLATION OF THE NONCONFORMING PIPE BY JACKS	CPRT ---- THE ACTION REQUESTED BY TRT TO PERFORM A MORE DETAILED ANALYSIS FOR A SPECIFIC WELD IS ADDRESSED BY THE PROJECT. THE CPRT RESOLUTION OF CONCERNS REGARDING THE NONCONFORMANCE SYSTEM IS SUMMARIZED UNDER ITEM 11.84E. THE CPRT RESOLUTION OF CONCERNS REGARDING PROCEDURES IS SUMMARIZED UNDER ITEM 11.84B.

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		AND CLAMPS, AS SUGGESTED BY NCR 40155, REV. 5, INDICATED THAT SIGNIFICANT ELASTICALLY CALCULATED STRESSED COULD HAVE OCCURRED. THESE STRESSES WERE NOT INCLUDED IN THE GIBBS & HILL (G&H) PIPING STRESS ANALYSIS. BASED ON THE MAGNITUDE OF THE STRESSES OBTAINED IN THE CALCULATIONS, TRT DETERMINED THAT TU ELECTRIC SHOULD PERFORM MORE DETAILED ANALYSES TO DEMONSTRATE THE STRUCTURAL INTEGRITY OF THE INSTALLED NONCONFORMING PIPE, ESPECIALLY IN THE VICINITY OF WELD FW 13-4A. TRT NOTED, HOWEVER, THAT STRESSES IN THE INSTALLED NONCONFORMING PIPE WERE SECONDARY STRESSES WHICH SHOULD BE APPLIED ONLY ONCE DURING THE LIFE OF THE PLANT. PLASTIC DEFORMATIONS ASSOCIATED WITH THESE STRESSES WOULD BE LESS THAN THOSE PERMITTED IN OTHER PROCESSES ACCEPTABLE TO THE ASME CODE, e.g., DURING PIPE BENDING (PARAGRAPHS NB/NC/ND-4223 OF THE ASME CODE). FURTHERMORE, BECAUSE HYDROSTATIC AND PREOPERATIONAL TESTING OF THE CONTAINMENT SPRAY SYSTEM WERE COMPLETED SUCCESSFULLY, TRT FOUND THAT THE INSTALLED ALLEGED NONCONFORMING PIPE MIGHT BE ACCEPTABLE. DURING THE ASSESSMENT OF THE ALLEGATION, TRT IDENTIFIED NONCOMPLIANCES WITH THE REQUIREMENT OF BROWN & ROOT (B&R) PROCEDURE CP-QP-6.0, CONTROL OF NONCONFORMING ITEMS, CONCERNING EVALUATING THE DISPOSITION OF NONCONFORMANCE REPORTS (NCRs) FOR ADEQUACY. THESE NONCONFORMANCES WERE ASSOCIATED WITH ERRORS IN LOGIC AND INVALID REFERENCES IN THE DISPOSITION OF NCRs 40155 REV. 5 AND 40425. A NONCOMPLIANCE WITH THE INTENT OF B&R PROCEDURE CP-QP-6.0 WAS ALSO IDENTIFIED. INSPECTION RESULTS WERE INVALIDLY USED TO CONCLUDE THAT THE NONCONFORMING PIPE WAS NOT NONCONFORMING. A WEAKNESS IN B&R PROCEDURE CP-CPM-6.9E, IN NOT PERMITTING THE USE OF MECHANICAL MEANS TO ACHIEVE FITUP IN THE FABRICATION OF FIELD WELDS, WAS ALSO IDENTIFIED BY TRT.	
SER: 10 ALLEG: AB-12 ITEM: 10.017	SOME BOLTS HOLDING THE UPPER STEAM GENERATOR (SG) LATERAL SUPPORTS TO THE WALL PLATES WERE CUT. THEREFORE, THEY WERE INCAPABLE OF SECURING THE SG LATERAL SUPPORTS TO THE	TRT --- TU ELECTRIC PURCHASED 144 BOLTS WHICH WERE 1 1/2 INCHES LONGER THAN THE 7 1/2 INCHES NEEDED TO MEET THE INSTALLATION REQUIREMENTS FOR STEAM GENERATOR SUPPORTS. THE BOLTS WERE THEN CUT TO 7 1/2 INCHES AS	CPRT ---- CPRT, UNDER ISAP V.B, INVESTIGATED THE UPPER LATERAL RESTRAINTS OF THE STEAM GENERATORS. REVIEW OF DESIGN DOCUMENTS REVEALED THAT THREAD ENGAGEMENT REQUIREMENTS FOR THE STEAM GENERATOR UPPER LATERAL RESTRAINT (SGUL) BOLTS HAD NOT BEEN ADEQUATELY SPECIFIED

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	EMBEDMENT PLATES IN ACCORDANCE WITH DESIGN REQUIREMENTS. REF. PG H-149	AUTHORIZED BY WORK PACKAGE. TRT VERIFIED THROUGH FIELD INSPECTIONS THAT PERMANENT MARKINGS WERE ON THE BOLT HEADS PROVIDING MATERIAL TRACEABILITY. THE ALLEGATION THAT THE BOLTS HAD BEEN CUT WAS SUBSTANTIATED, BUT THE CUTTING HAD BEEN AUTHORIZED AND MATERIAL TRACEABILITY HAD BEEN MAINTAINED. TU ELECTRIC WAS UNABLE TO PROVIDE TRT WITH AN INSPECTION RECORD OR TRAVELER PACKAGE DOCUMENTING THE INSTALLATION OF THE BOLTS. ABSENCE OF THE INSPECTION RECORD RAISED A POTENTIAL SAFETY AND QA/QC CONCERN BECAUSE THE BOLTS RESTRAIN THE STEAM GENERATOR DURING A SEISMIC OR PIPE RUPTURE EVENT. ACTIONS REQUIRED --- TU ELECTRIC SHALL, IF POSSIBLE, FIND THE ORIGINAL QA/QC INSPECTION AND INSTALLATION RECORDS FOR THE RESTRAINT IN QUESTION. IF THE RECORDS ARE NOT RETRIEVED, TU ELECTRIC SHALL PROVIDE EVIDENCE, SUCH AS ULTRASONIC MEASUREMENT RESULTS, TO VERIFY ACCEPTABLE BOLT LENGTH. SHOULD UNAUTHORIZED BOLT CUTTING BE VERIFIED, TU ELECTRIC SHALL: 1. REPLACE SHORTENED BOLTS WITH BOLTS OF PROPER LENGTH, OR PROVIDE ANALYSIS TO JUSTIFY THE ADEQUACY OF SHORTENED BOLTS AS INSTALLED, AND 2. PROVIDE JUSTIFICATION, OR PROPOSE MEASURES TO ENSURE, THAT NO SIMILAR CONCERN EXISTS FOR BOLTING.	IN THE DESIGN. ANALYSES DEMONSTRATED THAT THE ORIGINALLY INSTALLED BOLTS AND EMBEDMENT PULL-OUT DID NOT MEET DESIGN CRITERIA. REMOVAL OF THE SGUL BOLTS DURING INSPECTIONS CONFIRMED INADEQUATE BOLT ENGAGEMENT AND IDENTIFIED ALIGNMENT PROBLEMS IN THE BOLT HOLES OF THE SGUL BEAM END PLATE, THE SHIMS, AND THE EMBEDMENT. THREAD DAMAGE THAT WAS ATTRIBUTED TO THE ALIGNMENT PROBLEM WAS OBSERVED IN SEVERAL EMBEDMENT HOLES. (ISAP V.B RESULTS REPORT PG 52). CPRT IDENTIFIED DISCREPANCIES IN THE LOAD INFORMATION OF THE STEAM GENERATOR COMPARTMENT FINITE ELEMENT ANALYSIS THAT GENERATED THE SGUL BEAM END LOADS USED IN THE EVALUATION OF THE SGUL CONNECTIONS. THIS LED TO A REANALYSIS OF THE STEAM GENERATOR COMPARTMENTS BY GIBBS & HILL (G&H) AND WESTINGHOUSE. BASED ON THE RESULTS OF THESE ANALYSES, WESTINGHOUSE REVISED THE DESIGN OF THE SGUL CONNECTIONS. THIS, ALONG WITH THE INSTALLATION OF NEW BOLTS, RESOLVED THE ORIGINAL ISSUE OF THE SGUL BOLTS. IN ADDITION, THE SGUL CONNECTIONS ARE BEING REASSEMBLED IN ACCORDANCE WITH THE REVISED DESIGN. (ISAP V.B RESULTS REPORT PG 52). TO DETERMINE THE POTENTIAL GENERIC APPLICABILITY OF THE THREAD ENGAGEMENT PROBLEM, TWO POPULATIONS OF BLIND STRUCTURAL CONNECTIONS WERE INSPECTED FOR THREAD ENGAGEMENT ADEQUACY. NO DISCREPANCIES WERE IDENTIFIED IN THE MEASUREMENTS OF THE THREAD ENGAGEMENT OF THE SAMPLE OF BOLTS IN THE DRILLED AND TAP BLIND CONNECTIONS. (ISAP V.B RESULTS REPORT, PG 52). CONCRETE INSERT THREAD ENGAGEMENT WAS REINSPECTED UNDER ISAP VII.C. AN UNCLASSIFIED TREND WAS IDENTIFIED FOR INSERTS THAT DID NOT MEET THE MINIMUM ENGAGEMENT REQUIREMENT. A CORRECTIVE ACTION PROGRAM WAS RECOMMENDED BY CPRT. (ISAP VII.C RESULTS REPORT, APPENDIX 33, PG 2 AND 10). THE PROBLEM IN THE ALIGNMENT OF THE BOLT HOLES IN THE SGUL BEAM END PLATE, THE SHIMS, AND THE EMBEDMENT, THAT WAS ATTRIBUTED AS THE CAUSE OF THE OBSERVED THREAD DAMAGE, WAS CONCLUDED TO BE UNIQUE TO THE SGUL INSTALLATION. THIS CONCLUSION WAS BASED ON THE REVIEW OF THE FABRICATION AND INSTALLATION HISTORY OF THE SGUL'S, THE INSTALLATION DOCUMENTATION OF FIFTEEN SUBPOPULATIONS OF DRILL AND TAP BLIND CONNECTIONS, THE IMPLICATIONS OF THE GEOMETRIC CONFIGURATIONS OF THE INSTALLATIONS, AND EIGHTEEN THREADED RODS THAT HAD BEEN REMOVED FROM RICHMOND INSERTS WITH NO DAMAGED THREADS. (ISAP V.B RESULTS REPORT PG 52). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
			ACTIONS BEING UNDERTAKEN BY THE PROJECT.
ER: 10 LEG: AQB-03 EM: 10.017A	SOME BOLTS WERE CUT BECAUSE THERE WAS CONCRETE IN THE BOLT HOLE THAT PREVENTED INSTALLING THE BOLT TO ITS FULL LENGTH. THIS CUTTING REMOVED THE HEAT NUMBERS FROM THE ENDS OF THE BOLTS. REF. PG M-149	SEE ITEM 10.017, AB-12.	
ER: 10 LEG: SRT-08 EM: 10.019	NUTS ON THE SUPPORT BOLTS FOR THE VERTICAL RESIDUAL HEAT EXCHANGERS WERE LOOSE. REF. PG M-153.	TRT --- THE NRC SPECIAL REVIEW TEAM (SRT) REPORT ON COMANCHE PEAK STATED THAT A FEW NUTS WERE VERY LOOSE AND OTHER BOLTS HAD EXPOSED THREADS BETWEEN NUTS AND BEARING SURFACES ON THE VERTICAL RESIDUAL HEAT EXCHANGERS. ALSO, SUPPORT BOLTING AND WELDING RECORDS WERE NOT READILY RETRIEVABLE. TRT REVIEWED RECORDS FOR THE SUPPORTS OF THE VERTICAL RESIDUAL HEAT EXCHANGERS AND FOUND THAT THOSE RECORDS LACKED PROPER DOCUMENTATION TO TRACE BOLT MATERIAL. THIS LACK OF PROPER DOCUMENTATION WAS DISCOVERED BY TU ELECTRIC DURING PREPARATIONS FOR THE ASME N-5 CLOSEOUT AND WAS REPORTED BY NONCONFORMANCE REPORTS (NCRs) M-14,243 AND M-14,244. TRT ALSO REVIEWED THE DOCUMENTATION AND INSTALLATION OF THE CONTAINMENT SPRAY HEAT EXCHANGER, WHICH WAS SIMILAR TO THE INSTALLATION OF THE VERTICAL RESIDUAL HEAT EXCHANGERS AND IN THE SAME AREA. TRT FOUND THE BOLT MATERIAL RECORDS FOR THE CONTAINMENT SPRAY HEAT EXCHANGER AND DETERMINED THAT SUPPORT BOLTS WERE NOT LOOSE. TRT CONCLUDED THAT TU ELECTRIC HAD CORRECTLY ADDRESSED THE LACK OF MATERIAL TRACEABILITY DOCUMENTATION FOR SUPPORT BOLTS FOR THE VERTICAL RESIDUAL HEAT EXCHANGERS. WHEN THE NCRs ON THE INADEQUATE DOCUMENTATION ARE CLOSED, THERE WILL BE NO SAFETY SIGNIFICANCE RELATED TO THE ALLEGATION.	CPRT ---- THIS ISSUE IS ADDRESSED DIRECTLY BY THE PROJECT. THE APPLICABLE NCRs, M-14,243-R-1 AND M-14,244-R-1, WERE CLOSED ON SEPTEMBER 1, 1984.

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SSER: 10 ALLEG: AQP-01 ITEM: 10.021	A PIPE PIECE NUMBER WAS CHANGED TO COVER UP UNAUTHORIZED WORK AND TO AVOID GENERATION OF NCRs. REF. PG M-155.	TRT --- BASED ON A REVIEW AND ASSESSMENT OF NONCONFORMANCE REPORTS (NCRs), TRT SUBSTANTIATED THIS ALLEGATION. FIT-UP INSPECTION OF PIECE 38 WAS RECORDED AS ACCEPTABLE AND WELD ACCEPTANCE AND MATERIAL TRACEABILITY WERE DOCUMENTED IN QA RECORDS. TRT ALSO CONCLUDED THAT THERE WAS A GENERIC IMPLICATION BECAUSE A NONCONFORMING ITEM (PIECE NO. 38/48) WAS INSTALLED AND NO INFORMATION WAS AVAILABLE COVERING THE DISPOSITIONING OF THREE OTHER NONCONFORMING SPOOL PIECES, CT-1-SB-017 ITT2, PIECE NUMBER 23; CT-1-SB-013 ITT1, PIECE NUMBER 33; AND CT-1-SB-004 ITT1, PIECE NUMBER 41, WHICH WERE IDENTIFIED ON NCR M-40155. THESE NONCONFORMING PIECES ALSO MIGHT HAVE BEEN INSTALLED WHILE IN A HOLD STATUS. TRT, IN APPENDIX F, SSER-11, CHARACTERIZED THIS ITEM AS AN ISOLATED OCCURRENCE, OR VERY FEW OCCURRENCES, WITH NO GENERIC IMPACT.	CPRT ---- THE DISPOSITION OF THE NONCONFORMING SPOOL PIECES IS ADDRESSED BY THE PROJECT.
SSER: 10 ALLEG: AQW-01 ITEM: 10.026A-2	QC INSPECTORS LACKED SUFFICIENT WELDING BACKGROUND TO CONDUCT ADEQUATE INSPECTIONS. REF. PG M-169	TRT --- THIS ALLEGATION WILL BE DISCUSSED IN QA/QC CATEGORY 4, TRAINING AND QUALIFICATION.	CPRT ---- SEE ITEM 11.83D
SSER: 10 ALLEG: AQW-05 ITEM: 10.026E	VISUAL WELD INSPECTORS WERE INADEQUATELY TRAINED AND CERTIFIED. REF. PG. M-187.	TRT --- THE SUBJECT OF INSPECTOR QUALIFICATION WILL BE ADDRESSED IN QA/QC CATEGORY 4, TRAINING AND QUALIFICATION.	CPRT ---- SEE ITEM 11.83D.
SSER: 10 ALLEG: AH-06 ITEM: 10.029	THERE WERE FITUP GAP VIOLATIONS ON THREE HANGERS. REF. PG M-199.	TRT --- THIS CONCERN INVOLVED AN ALLEGED FITUP GAP VIOLATION ON SUPPORT SW-1-102-106-Y33K THAT WAS INITIALLY ADDRESSED BY NRC REGION IV INSPECTION REPORT (IR) 50-445/83-07. TRT REVIEWED IR 50-445/83-07 AND FOUND THAT THE SUPPORT HAD BEEN INSPECTED BY NRC REGION IV INSPECTION PERSONNEL IN DETAIL. THE INSPECTORS REMOVED PAINT AND	CPRT ---- SEE ITEM 11.84E.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		PART OF THE WELD NECESSARY TO DETERMINE IF AN EXCESSIVE FITUP GAP EXISTED. THE FITUP GAP WAS FOUND TO EXCEED THE MAXIMUM ALLOWABLE, AND A NOTICE OF VIOLATION, 445/8307-01, WAS ISSUED. THE ALLEGATION WAS SUBSTANTIATED. TRT DETERMINED THAT TU ELECTRIC HAD SUBMITTED A RESPONSE TO THE VIOLATION AND THAT THE CONDITIONS REPORTED HAD BEEN CORRECTED. IN ADDITION, TRT CONCLUDED THAT THE REDUCTION IN EFFECTIVE WELD LENGTH DUE TO THE FITUP GAP HAD NO SAFETY SIGNIFICANCE FROM A DESIGN AND ENGINEERING STANDPOINT. TRT ALSO REVIEWED THE DOCUMENTS SUBMITTED BY TU ELECTRIC PIPE SUPPORT ENGINEERING (PSE) TO ADDRESS THIS CONCERN AND CONCLUDED THAT THE RESULTS OF THE ENGINEERING RESPONSE WERE ACCEPTABLE. ACCORDINGLY, THE ALLEGATION DOES NOT HAVE SAFETY SIGNIFICANCE. TRT CONCLUDED, HOWEVER, THAT A RESPONSE BY BROWN & ROOT (B&R) MANAGEMENT ON AVOIDING FUTURE VIOLATIONS WAS NOT ACCEPTABLE. B&R INTEROFFICE MEMORANDUM (IM) -25,408 PROVIDED THE SPECIFICS ON CORRECTING THE EXCESSIVE GAP BUT DID NOT ADDRESS CHECKING SIMILAR WORK PERFORMED BY THE WELDER OR DETERMINING WHETHER THE FITUP GAP ON HIGHLY SKEWED WELDS SHOULD BE RANDOMLY CHECKED. TRT, IN APPENDIX F, SSER-11, CHARACTERIZED THIS ISSUE AS ONE THAT MIGHT INDICATE FREQUENT OCCURRENCES BUT IS APPARENTLY CONFINED TO A SPECIFIC ITEM OR AREA.	
ER: 10 LEG: AQW-73 EM: 10.039	INSPECTION PROCEDURES DID NOT INCLUDE INSTRUCTIONS FOR EXAMINING SKEWED FILLET WELDS. REF. PG H-199.	TRT --- IN THE REVIEW OF THIS ALLEGATION, TRT FOUND EVIDENCE THAT PROCEDURES WERE REVISED TO INCLUDE APPROPRIATE CRITERIA FOR SKEWED WELD INSPECTION, AND THAT A 100 PERCENT REINSPECTION PROGRAM FOR NON-ASME SKEWED FILLET WELDS WAS COMPLETED. A SAMPLING OF THOSE SUPPORTS IDENTIFIED BY TRT SHOWED THAT ALL INSPECTIONS WERE SATISFACTORY. ACCORDINGLY, THIS ALLEGATION HAS NO SAFETY SIGNIFICANCE FOR NON-ASME SUPPORTS. ADDITIONALLY, TRT CONCLUDED THAT THE INSPECTION OF SKEWED FILLET WELDS BETWEEN TYPICAL STRUCTURAL MEMBERS	CPRT ---- CPRT, UNDER ISAP V.A, CONFIRMED THAT PIPE SUPPORT PROCEDURES DID NOT CONTAIN INSPECTION CRITERIA FOR TYPE-2 SKEWED WELDS. HOWEVER, ACCEPTANCE CRITERIA FOR TYPE-2 SKEWED WELDS WERE CONTAINED IN THE PIPING INSPECTION PROCEDURE. THIS PROCEDURE ALSO PROVIDED TWO MEASUREMENT TECHNIQUES FOR TYPE-2 SKEWED WELDS DURING THE PERIOD WHEN MOST TYPE-2 SKEWED WELDS WERE INSPECTED. THE PIPE SUPPORT INSPECTION PROCEDURE HAS BEEN REVISED TO CONTAIN ACCEPTANCE CRITERIA AND TECHNIQUES FOR THE MEASUREMENT OF TYPE-2 SKEWED WELDS THUS ELIMINATING THE NEED TO REFER TO THE PIPING INSPECTION PROCEDURE FOR THIS INSPECTION.

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		FOR ASME SUPPORTS WAS ALSO SATISFACTORY. HOWEVER, FOR THOSE PIPE STANCHION TYPE CONNECTIONS THAT ARE TYPICALLY INSPECTED TO A PIPING PROCEDURE, BUT BY DEFINITION ARE A SUBSECTION NF WELD, TRT SUBSTANTIATED THE ALLEGATION. TRT FOUND NO EVIDENCE THAT WOULD PERMIT THE USE OF A PIPING INSPECTION PROCEDURE, AS STATED BY BROWN & ROOT (B&R), TO INSPECT COMPONENT SUPPORT SKEWED WELDS. BECAUSE THESE PIPE STANCHION TYPE FILLET WELDS WERE NOT INSPECTED AS SKEWED FILLET WELDS, AS DEFINED ON THE QC CHECKLIST (LINE ITEM 5B) OF PROCEDURE CP-QAP-12.1, THE COMMITMENT TO RECTIFY THE SKEWED WELD INSPECTION PROBLEM BY REINSPECTION WAS NOT COMPLETED. A REVIEW OF THE WELD DATA CARDS FOR A RANDOM SAMPLING OF SUPPORTS INDICATED THAT THE WELDS HAD BEEN INSPECTED. HOWEVER, B&R COULD NOT PROVIDE ANY DOCUMENTATION TO INDICATE THAT THE REVISED PROCEDURE FOR CORRECTLY INSPECTING SKEWED WELDS WAS USED. THIS ALLEGATION MIGHT HAVE SAFETY SIGNIFICANCE BECAUSE UNDERSIZED WELDS MIGHT EXIST. ACTIONS REQUIRED --- TU ELECTRIC SHALL RESPOND TO ALLEGATION AQW-73 (PERTAINING TO ASME SUPPORTS FOR INSPECTION CRITERIA FOR SKEWED WELDS) BY CORRECTING PROCEDURE CP-QAP-12.1 AND QI-QAP-11.1-28 TO INCLUDE ALL SUBSECTION NF WELDS, INCLUDING STANCHION-TO-STANCHION WELDS AND STANCHION-TO-PAD WELDS. TU ELECTRIC SHALL PROVIDE EVIDENCE TO VERIFY THAT PREVIOUS VCD/DRD INSPECTIONS OF THESE TYPES OF SKEWED WELDS WERE PERFORMED CORRECTLY AND INSPECTED TO THE APPROPRIATE CRITERIA.	CPRT, UNDER ISAP V.A, PERFORMED AN INSPECTION OF A SAMPLE OF TYPE-2 SKEWED WELDS. ALTHOUGH SOME OF THOSE WELDS WERE UNDERSIZED, CPRT CONCLUDED, BASED ON A MARGIN ANALYSIS, THAT THERE WAS REASONABLE ASSURANCE THAT TYPE-2 SKEWED WELDS ON SUPPORTS WERE WITHIN ALLOWABLE STRESS LEVELS. THE MARGIN SHOWED THAT IT IS NOT LIKELY THAT ANY OF THE TYPE-2 SKEWED WELDS IN THE PLANT EXCEED CODE LIMITS. (ISAP V.A RESULTS REPORT PG 25-26). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 10 ALLEG: AH-10 ITEM: 10.032	BOLT HOLES IN HANGERS WERE ENLARGED WITH A TORCH. REF. PG N-209	TRT --- TRT COULD FIND NO SPECIFIC DETAILS FOR THE ALLEGATION. TRT REVIEWED NRC REGION IV INSPECTION REPORT (IR) 83-27 AND AGREED WITH THE INSPECTOR'S ASSESSMENT THAT CUTTING HOLES WITH A TORCH WAS NOT PROHIBITED. HOWEVER, NO PROCEDURES WERE FOUND TO ADDRESS TORCH	CPRT --- THE PROJECT CORRECTIVE ACTION PROGRAM (CAP) HAS ADDRESSED THIS ISSUE.

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		CUTTING OF HOLES, AND NO EVIDENCE WAS FOUND OF TORCH CUTTING. HOWEVER, TRT DID IDENTIFY TWO SUPPORTS THAT HAD OVERSIZED HOLES BY DRILLING ACCORDING TO CP-CPM-9.10 AND FOUR SUPPORTS THAT APPEARED QUESTIONABLE. THE RELATED CONCERN OF OVERSIZED BOLT HOLES BY DRILLING WAS SUBSTANTIATED.	
SSER: 10 ALLEG: AP-27 ITEM: 10.035	THE SEISMIC RESPONSE SPECTRA GENERATED WAS NOT REPRESENTATIVE OF THE COMANCHE PEAK PLANT AND AGREED POORLY WITH THE UNIFORM BUILDING CODE REF. PG N-231	TRT --- THE ALLEGATION CONCERNED VALIDATING THE GIBBS & HILL SIMPLIFIED PIPING ANALYSIS TECHNIQUE. TRT REVIEWED A SAMPLE PROBLEM WITH THE SIMPLIFIED TECHNIQUE AND FOUND THAT THE RESULTS WERE CONSERVATIVE AND CONSISTENT WITH PROPER ENGINEERING TECHNIQUES. TRT ALSO REVIEWED THE SIMPLIFIED METHOD FOR COMPLIANCE WITH THE NRC STANDARD REVIEW PLAN (SRP). TRT DETERMINED THAT THE SIMPLIFIED TECHNIQUE DID NOT APPLY THE 1.5 DYNAMIC AMPLIFICATION FACTOR AS SUGGESTED BY THE SRP. TRT CONCLUDED THAT TU ELECTRIC SHOULD HAVE ADVISED NRC IN THE FSAR OF THE EXCLUSION OF THE 1.5 FACTOR AS RECOMMENDED BY THE SRP. ADDITIONALLY, TU ELECTRIC SHOULD HAVE PROVIDED TECHNICAL EVIDENCE AS THE BASIS FOR THIS EXCLUSION. BECAUSE REDUCTION OF THE 1.5 FACTOR WAS ALSO BEING EVALUATED BY TRT IN A RELATED CONCERN (CIVIL AND STRUCTURAL CATEGORY 70), A STATEMENT OF SAFETY SIGNIFICANCE WILL NOT BE MADE PENDING THE RESULTS OF THAT ASSESSMENT.	CPRT ---- STONE & WEBSTER ENGINEERING CORPORATION (SWEC) AND EBASCO/IMPELL ARE VERIFYING THE DESIGN OF PIPING AND CABLE TRAY RESPECTIVELY UNDER THE CORRECTIVE ACTION PROGRAM (CAP). CPRT, UNDER DSAP IX AND DSAP VII, EVALUATED SWEC LARGE BORE PIPING AND EBASCO/IMPELL PIPING AND CABLE TRAY PROCEDURES RESPECTIVELY AND DETERMINED THAT THE METHODOLOGIES APPLIED IN THESE AREAS WERE CONSISTENT WITH INDUSTRY PRACTICE AND WERE ACCEPTABLE. SWEC SMALL BORE PIPING PROCEDURES HAVE BEEN REVIEWED BY THE TU ELECTRIC QA TECHNICAL AUDIT PROGRAM.
SSER: 10 ALLEG: SRT-03 ITEM: 10.036	THERE WERE CONCERNS ABOUT DESIGN CONSIDERATIONS FOR PIPING SYSTEMS FROM A SAFETY-RELATED TO A NONSAFETY-RELATED BUILDING. REF. PG. N-237.	TRT --- BECAUSE GIBBS AND HILL (G&H) HAD NOT ADDRESSED THE ORIGINAL NRC SPECIAL REVIEW TEAM (SRT) CONCERN REGARDING PIPING SYSTEM DESIGN, THE STATUS OF THIS ITEM REMAINED UNDETERMINED. TRT CONCLUDED THAT THIS CONCERN COULD HAVE SAFETY IMPLICATIONS. HOWEVER, UNTIL G&H COMPLETED THEIR REVIEW, A FINAL DETERMINATION OF THE SAFETY IMPLICATIONS COULD NOT BE MADE. ACTION REQUIRED --- TU ELECTRIC SHALL PROVIDE ANALYSIS AND DOCUMENTATION	CPRT ---- CPRT, UNDER ISAP V.C, CONCLUDED THAT THE ISSUE IDENTIFIED BY TRT WAS PARTIALLY SUBSTANTIATED IN THAT EXISTING DOCUMENTATION FOR THE DESIGN OF SOME OF THE PIPING BETWEEN SEISMIC CATEGORY I STRUCTURES AND NONSEISMIC STRUCTURES WAS NOT SUFFICIENT TO ASSURE THAT THE EFFECT OF TURBINE BUILDING STRUCTURAL FAILURE HAD BEEN ADEQUATELY ADDRESSED. DURING IMPLEMENTATION OF ISAP V.C, THE PROJECT INITIATED THE PIPING REQUALIFICATION PROGRAM UNDER STONE AND WEBSTER ENGINEERING CORPORATION (SWEC) TO RESOLVE A NUMBER OF ISSUES RELATED TO THE DESIGN OF ASME PIPING AND SUPPORTS. CPRT OVERVIEW OF THE SWEC REQUALIFICATION PROGRAM INCLUDED PROVISIONS FOR REANALYSES OF SEISMIC CATEGORY I LINES WHICH, OF NECESSITY,

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		THAT THE PIPING SYSTEMS ROUTED BETWEEN SEISMIC CATEGORY I AND NON SEISMIC CATEGORY I BUILDINGS MEET THE STATED FSAR CRITERIA.	INCLUDED ANY SEISMIC TO NON-SEISMIC TRANSITION REGION FOR THOSE LINES. THE REANALYSIS AND EVALUATION OF THE RESTRAINT DESIGN FOR THE NON-SEISMIC CATEGORY I HIGH AND MODERATE ENERGY LINES WAS ALSO COVERED BY THE SWEC PROGRAM. (ISAP V.C RESULTS REPORT, PG 4 AND 10). DSAP IX ALSO ADDRESSES THIS ISSUE. THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 10 ALLEG: SRT-05 ITEM: 10.037	TRAINING FOR INSPECTORS ON THE MEASUREMENT OF STRUT AND SNUBBER ORIENTATION ANGLES WAS WEAK. REF. PG. N-241.	TRT --- WITH REFERENCE TO THE CONFUSION AMONG QC INSPECTORS CONCERNING THE INSTALLATION TOLERANCE ON STRUT AND SNUBBER ORIENTATION, TRT REVIEWED TU ELECTRIC's RESPONSE TO THE NRC SPECIAL REVIEW TEAM REPORT AND FOUND THAT COMMITTED RESPONSES HAD BEEN CARRIED OUT AND THAT THE ALLEGATION DID NOT HAVE SAFETY SIGNIFICANCE. HOWEVER, TRT WAS CONCERNED ABOUT POTENTIAL GENERIC IMPLICATIONS ON PREVIOUSLY INSPECTED STRUTS AND SNUBBERS. TRT REVIEWED DOCUMENTATION THAT SNUBBERS HAD BEEN INSPECTED FOR POTENTIAL BINDING DURING HOT FUNCTIONAL TESTING. HOWEVER, NO DOCUMENTATION COULD BE PRODUCED BY PIPE SUPPORT ENGINEERING (PSE) THAT STRUTS HAD BEEN SIMILARLY REINSPECTED. BOTH BROWN & ROOT (B&R) QA AND PSE ATTEMPTED TO PROVIDE INDIRECT ASSURANCE THAT, IN THEIR OPINION, BASED UPON OTHER INSPECTIONS AND DOCUMENTED PIPE POSITIONS, NO STRUTS WERE BINDING TO CAUSE A PROBLEM. HOWEVER, TRT DISAGREED WITH THEIR CONCLUSIONS.	CPRT ---- CPRT, UNDER ISAP VII.C,REINSPECTED PIPE SUPPORT INSTALLATIONS FOR ANGULARITY AND BINDING/OFFSET. IN THE LARGE BORE PIPE SUPPORT-RIGID CATEGORY, A FINDING WAS IDENTIFIED FOR INCORRECT ANGULARITY OF SNUBBER ASSEMBLY. THE RECOMMENDED CORRECTIVE ACTION INCLUDED REINSPECTION OF SWAY STRUTS AND SNUBBERS FOR ORIENTATION, ANGULARITY AND BINDING IN ALL PIPE SUPPORT CATEGORIES. (ISAP VII.C RESULTS REPORT, APPENDIX 26, PG 44) IN THE LARGE BORE PIPE SUPPORT-RIGID CATEGORY UNDER ISAP VII.C, CPRT IDENTIFIED A RELATED FINDING FOR INCORRECT COMPONENTS WITH THE POTENTIAL TO CAUSE BINDING. THE RECOMMENDED CORRECTIVE ACTION INCLUDED REINSPECTION OF SUPPORTS CONTAINING VENDOR SUPPLIED COMPONENTS. (ISAP VII.C RESULTS REPORT, APPENDIX 25, PG 8 AND 47) UNDER ISAP VII.B.3, CPRT ALSO CONFIRMED THE TRT AS-BUILT REVIEW (AQ-50) THAT IDENTIFIED TWO HANGERS WITH STRUTS EXCEEDING THE FIVE DEGREE ANGULARITY LIMITATION. THE CORRECTIVE ACTION IDENTIFIED BY CPRT UNDER ISAP VII.C ENCOMPASSED THE ISAP VII.B.3 FINDINGS. (ISAP VII.B.3 RESULTS REPORT, PG 19, 37, AND 40). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 10 ALLEG: AQP-23 ITEM: 10.038	THE TUEC QA PROGRAM DID NOT APPLY TO CLASS 5 (NON-SEISMIC) HANGERS AND SUPPORTS. REF. PG N-251.	TRT --- NRC REGION IV INSPECTION REPORT (IR) 80-15, THAT COVERED REGION IV INSPECTIONS PERFORMED IN JUNE 1980, REPORTED THAT THERE WAS NO QUALITY ASSURANCE EFFORT BEING MADE BY TU ELECTRIC REGARDING CLASS 5 PIPE HANGERS AND SUPPORTS. TRT FOUND THAT TU ELECTRIC, IN RESPONSE TO IR80-15, HAD IMPLEMENTED A QA PROGRAM FOR	CPRT ---- CPRT RESOLUTION OF ISSUES REGARDING THE TU ELECTRIC QA AUDIT PROGRAM IS SUMMARIZED UNDER ITEM 11.84G.

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		CLASS 5 PIPE HANGERS AND SUPPORTS. NRC REGION IV IR84-32/84-11, DATED FEBRUARY 12,1985, ISSUED A NOTICE OF VIOLATION TO TU ELECTRIC CITING TU ELECTRIC'S FAILURE TO ESTABLISH AND IMPLEMENT A COMPREHENSIVE SYSTEM OF PLANNED AND PERIODIC AUDITS. TRT'S FINDING OF VIOLATIONS IN THE TU ELECTRIC QA AUDIT SYSTEM WAS CONSISTENT WITH IR84-32/84-11.	
SSER: 10 ALLEG: AW-65 ITEM: 10.040	THE CIRCUMFERENTIAL BUTT WELDS IN THE UNIT 1 AND 2 FUEL TRANSFER TUBES HAD INCOMPLETE PENETRATION. REF. PG N-291.	TRT --- IN THE VISUAL EXAMINATION OF FUEL TRANSFER TUBES FOR UNITS 1 AND 2, TRT FOUND NO CIRCUMFERENTIAL BUTT WELDS, AS ALLEGED. THE TUBES WERE FABRICATED AS REQUIRED BY WESTINGHOUSE DRAWING 1209E53, NOTE 7. THE ALLEGATION, THEREFORE, WAS NOT SUBSTANTIATED. IT WAS TRT's OPINION THAT THE ALLEGER MAY ACTUALLY HAVE BEEN REFERRING TO ONE OR MORE OF THE WELDS BETWEEN THE PENETRATION SLEEVES AND THE EXPANSION JOINT ASSEMBLIES. THESE WERE ORIGINALLY BUTT WELDS THAT WERE REDESIGNED BECAUSE OF A DIAMETRICAL MISMATCH. TRT's VISUAL EXAMINATION FOUND THE MODIFIED WELDS TO BE VISUALLY SOUND AND TO HAVE A MUCH GREATER CROSS-SECTIONAL AREA THAN THE DESIGNED BELLOWS WELD REQUIREMENT IN THE SAME SEAL BARRIER BOUNDRY. TRT CONCLUDED THAT THIS ALLEGATION HAD NO SAFETY SIGNIFICANCE. HOWEVER, TRT OBSERVED MISCELLANEOUS DEBRIS IN AND AROUND THE EXPANSION JOINT ASSEMBLIES.	CPRT ---- CPRT EVALUATED PLANT HOUSEKEEPING UNDER ISAP VII.A.7, AND DETERMINED THAT BROWN & ROOT (B&R) CONSTRUCTION PROCEDURES THAT DEFINED HOUSEKEEPING AND CLEANLINESS REQUIREMENTS WERE ADEQUATE TO MEET FSAR COMMITMENTS. CPRT CONSIDERED EXISTING HOUSEKEEPING PRACTICES AND PROCEDURES SATISFACTORY AND IN COMPLIANCE WITH COMMITMENTS. (ISAP VII.A.7 RESULTS REPORT PG 24). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 10 ALLEG: AB-07B ITEM: 10.048	THE COMPONENT COOLING WATER SURGE TANK ANCHOR BOLTS WERE MISALIGNED WITH THE BASEPLATE HOLES, AND THE ANCHOR BOLTS WERE BENT TO FIT THE HOLES. REF. PG N-140.	TRT --- THIS ALLEGATION IS STILL UNDER REVIEW. THE RESULTS OF THIS REVIEW WILL BE REPORTED IN A FUTURE SSER.	
SSER: 10 ALLEG: AB-13 ITEM: 10.053	DURING INSTALLATION OF APPROXIMATELY 1000 HANGERS, SOME BOLT HOLES WERE DRILLED TOO LARGE, CAUSING AN EXCESSIVE	TRT --- THIS ALLEGATION WILL BE ADDRESSED IN THE STAFF'S SUMMARY DISPOSITIONS ON THE WALSH/DOYLE ALLEGATIONS	

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
	BOLT-TO-BOLT HOLE GAP IN THE BASEPLATES.	CONCERNING THE DESIGN OF PIPE SUPPORTS.	
SSER: 10 ALLEG: AQW-18 ITEM: 10.093	EBASCO INSPECTORS DID NOT PROPERLY INSPECT WELDS. REF. PG N-187.	TRT --- TRT FOUND THAT EBASCO INSPECTION PERSONNEL WERE TRAINED AND CERTIFIED IN THE SAME MANNER AS TU ELECTRIC EMPLOYEES. THE SUBJECT OF TU ELECTRIC INSPECTOR TRAINING AND QUALIFICATION IS ADDRESSED IN QA/QC CATEGORY 4.	CPRT ---- SEE ITEM 11.83D
SSER: 10 ALLEG: AQW-19 ITEM: 10.093A	THE BACKFIT INSPECTION PROGRAM WAS NOT COMPLETELY IMPLEMENTED. REF. PG. N-187.	TRT --- THE SUBJECT OF INSPECTOR QUALIFICATIONS WILL BE ADDRESSED IN QA/QC CATEGORY 4.	CPRT ---- SEE ITEM 11.83D.
SSER: 10 ALLEG: AQW-22 ITEM: 10.095	AN NCR ON DEFECTIVE WELDS IN CB&I PIPE WHIP RESTRAINTS WAS NEVER ASSIGNED AN NCR NUMBER AND WAS NOT PROPERLY PROCESSED OR DISPOSITIONED. REF. PG N-289.	TRT EVALUATION IS ON-GOING AND WILL BE INCLUDED IN A FUTURE SSER.	
SSER: 10 ALLEG: AW-39 ITEM: 10.096-A	VENDOR WELDS WERE DEFECTIVE ON A CBI-SUPPLIED PIPE WHIP RESTRAINT IN THE UNIT 1 PRESSURE RELIEF TANK ROOM. REF. PG N-289	TRT EVALUATION IS ON-GOING AND WILL BE INCLUDED IN A FUTURE SSER.	
SSER: 10 ALLEG: AW-53 ITEM: 10.096-B	THERE WERE WELD DEFICIENCIES IN PIPE HANGERS. REF. PG N-289	TRT EVALUATION IS ON-GOING AND WILL BE INCLUDED IN A FUTURE SSER.	
SSER: 10 ALLEG: AW-57 ITEM: 10.096-C	THERE WERE DEFECTIVE WELDS IN PIPE WHIP RESTRAINTS SUPPLIED BY NPS INDUSTRIES. REF. PG N-289	TRT EVALUATION IS ON-GOING AND WILL BE INCLUDED IN A FUTURE SSER.	
SSER: 10	(THIS ALLEGATION DUPLICATES	TRT EVALUATION IS ON-GOING AND WILL BE INCLUDED IN A	

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
ALLEG: AW-84 ITEM: 10.090-D	AW-57.) REF. PG N-289	FUTURE SSER.	
SSER: 10 ALLEG: AQW-69 ITEM: 10.116	THERE WAS WIDESPREAD USE OF INADEQUATELY QUALIFIED MECHANICAL AND WELDING INSPECTORS. REF. PG N-187.	TRT --- THE ALLEGATION THAT EIGHT BROWN & ROOT (B&R) QC PERSONNEL MIGHT NOT HAVE HAD EITHER HIGH SCHOOL DIPLOMAS OR GED CERTIFICATES AND THEREFORE WERE NOT QUALIFIED TO BE INSPECTORS WILL BE ADDRESSED IN QA/QC CATEGORY 4.	CPRT ---- SEE ITEM 11.83D
SSER: 10 ALLEG: SRT-04 ITEM: 10.131	THE ALLOWED TOLERANCES FOR STRUT AND SNUBBER ORIENTATION ANGLES WEREN'T CLEARLY STATED IN APPLICABLE INSPECTION PROCEDURES. REF. PG N-241	SEE ITEM 10.037, SRT-05.	
SSER: 11 ALLEG: AQ-003 ITEM: 11.02	DOCUMENTATION SYSTEM WAS TOTALLY OUT OF CONTROL. REF. PG. G-45.	TRT --- TRT FOUND THAT THE PORTION OF THE ALLEGATION CONCERNING CONTROL OF PROCEDURES AND INSTRUCTIONS WAS NOT SUBSTANTIATED. SINCE JULY 1984, THE PROGRAM FOR CONTROLLING DESIGN DOCUMENTS, THOUGH CUMBERSOME, HAS BEEN EFFECTIVE. PROBLEMS THAT MAY HAVE EXISTED PRIOR TO JULY 1984 ARE COVERED IN AQ-50. DEFICIENCIES PRIOR TO JULY 1984 HAD THE POTENTIAL FOR CONTRIBUTING TO PROBLEMS IN CONSTRUCTION, INSTALLATION AND INSPECTION.	CPRT ---- CPRT RESOLUTION OF CONCERNS REGARDING THE DOCUMENT CONTROL CENTER IS SUMMARIZED UNDER ITEM 11.83B.
SSER: 11 ALLEG: AQ-102 ITEM: 11.06	A DOCUMENT CONTROL CENTER SATELLITE SUPERVISOR'S ACTION RESULTED IN PROCEDURAL VIOLATIONS THAT WERE NOT REPORTED TO TUEC QUALITY ASSURANCE REPRESENTATIVES FOR REVIEW AND CONSIDERATION OF A REPORTABLE DEFICIENCY PURSUANT TO 10 CFR 50.55(E). REF. PG. 0-65.	TRT --- THE CONCERN THAT THE DOCUMENT CONTROL CENTER (DCC) SATELLITE SUPERVISOR TOOK ACTIONS THAT RESULTED IN PROCEDURAL VIOLATIONS WAS SUBSTANTIATED. THE CONCERN THAT TU ELECTRIC DCC PROCEDURAL VIOLATIONS WERE NOT REPORTED TO TU ELECTRIC FOR POTENTIAL REPORTABILITY UNDER 10 CFR 50.55(E) WAS NOT SUBSTANTIATED. IN THE COURSE OF ASSESSING THIS ALLEGATION, TRT DETERMINED THAT TU ELECTRIC'S DEFINITION OF REPORTABLE DEFICIENCIES WAS TOO VAGUE. TU ELECTRIC'S NONCONFORMANCE REPORT (NCR) PROCEDURE LACKED	CPRT ---- UNDER ISAP VII.A.2, CPRT CONCLUDED THAT THE PROCEDURES GOVERNING THE REPORTABILITY SYSTEM WERE CONSIDERED ADEQUATE FROM PROJECT INCEPTION TO OCTOBER 1979. FROM THAT DATE THROUGH NOVEMBER 1985, CHANGES IN THE PROCEDURES REDUCED THE EFFECTIVENESS OF CONTROLS AT CPSES. CPRT ASSESSED THE IMPACT OF THESE PROCEDURAL INADEQUACIES DURING THE EVALUATION OF THE IMPLEMENTATION OF THE REPORTABILITY SYSTEM. THE ISSUE OF A NEW PROCEDURE IN NOVEMBER 1985 CORRECTED MOST PROCEDURAL SHORTCOMINGS AND PROVIDED AN ADEQUATE FRAMEWORK FOR THE REPORTABILITY SYSTEM.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		REFERENCES AND DID NOT ADDRESS CORRELATION OF NCRS TO REPORTABILITY UNDER 10 CFR 50.55(E). THE PROCEDURE ON SIGNIFICANT DEFICIENCIES LACKED SPECIFICITY AS TO WHAT WAS A SIGNIFICANT BREAKDOWN IN ANY PORTION OF THE QA PROGRAM OR THE MECHANISM FOR REVIEW OF NCRs FOR POTENTIAL REPORTABILITY. THIS CONCERN HAS GENERIC IMPLICATIONS IN THAT SIGNIFICANT QUALITY PROGRAM DEFICIENCIES COULD GO UNREPORTED TO THE NRC.	AS TO IMPLEMENTATION OF THE REPORTABILITY SYSTEM, CPRT FOUND THAT DECISIONS ON REPORTABILITY AND NON-REPORTABILITY WERE GENERALLY SOUND AND THAT THE PROGRAM, IN GENERAL, HAS BEEN ADEQUATE AND IN COMPLIANCE WITH REGULATORY REQUIREMENTS. THE LACK OF SUFFICIENT PROCEDURAL CONTROL FROM OCTOBER 1979 TO NOVEMBER 1985 DID NOT REDUCE THE EFFECTIVENESS OF IMPLEMENTATION RELATIVE TO REGULATORY REQUIREMENTS. CPRT DID IDENTIFY IMPROVEMENTS IN THE NONCONFORMANCE SYSTEM THAT WOULD ASSURE ALL NCRs WERE EVALUATED FOR REPORTABILITY. THE PROJECT HAS IMPLEMENTED THESE RECOMMENDED IMPROVEMENTS. (ISAP VII.A.2 RESULTS REPORT NG 51, 56, AND 57). THE CPRT RESULTS RESOLVE THIS ISSUE. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
USER: 11 ALLEG: AQ-023 ITEM: 11.13A	QUALITY CONTROL INSPECTION TRAINING WAS DEFICIENT. REF. PG. 0-107.	TRT --- BASED ON A REVIEW OF ALLEGATIONS CONCERNING INSPECTOR QUALIFICATIONS, CERTIFICATION, AND TRAINING, TRT CONCLUDED THAT THE TRAINING AND CERTIFICATION PROGRAM AS WRITTEN FOR THE ASME INSPECTION PERSONNEL WAS ADEQUATE WITH SOME EXCEPTIONS. HOWEVER, IN ACTUAL PRACTICE, THIS PROGRAM WAS NOT FOLLOWED SCRUPULOUSLY. IN THE NON-ASME TRAINING AND CERTIFICATION PROGRAM, TRT FOUND A LACK OF PROGRAMMATIC CONTROLS TO ENSURE THAT THE PROGRAM ACHIEVED AND MAINTAINED REQUIREMENTS AS SET FORTH IN 10 CFR 50, APPENDIX B. PROBLEM AREAS WERE IN (1) THE DOCUMENTATION FOR QUALIFICATION, INCLUDING VERIFICATION OF EDUCATION AND EXPERIENCE, (2) THE TRAINING AND CERTIFICATION PROGRAM, (3) THE RECERTIFICATION PROGRAM, AND (4) THE CERTIFICATION TESTING PROGRAM. TRT CONCLUDED THAT THE DEFICIENCIES IN PROCEDURAL REQUIREMENTS AND GUIDELINES IN THE TRAINING AND CERTIFICATION PROGRAMS WERE OF MAJOR CONCERN. TRT DID NOT INFER THAT ALL TU ELECTRIC AND BROWN & ROOT INSPECTORS WERE UNQUALIFIED. HOWEVER, IDENTIFIED INSPECTION DEFICIENCIES (AS ENUMERATED IN THE TRT's ELECTRICAL AND CIVIL AND STRUCTURAL SSERs), OR LACK OF INSPECTION, INDICATED A ROOT PROBLEM WITH INSPECTION QUALIFICATION THAT WAS DIRECTLY TRACEABLE TO TU ELECTRIC's AND BROWN & ROOT's LACK OF PROGRAMMATIC CONTROLS AND USE OF MINIMUM REQUIREMENTS FOR THE	CPRT ---- THE CPRT RESOLUTION OF ISSUES REGARDING THE QC INSPECTOR TRAINING AND CERTIFICATION PROGRAMS IS SUMMARIZED UNDER ITEM 11.33D.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		INSPECTION CERTIFICATION PROGRAM.	
SSER: 11 ALLEG: AQ-026 ITEM: 11.13C	DUE TO INADEQUATE TRAINING, QUALITY CONTROL INSPECTORS WERE NOT QUALIFIED. REF. PG. 0-107.	SEE ITEM 11.13A, AQ-023.	
SSER: 11 ALLEG: AQ-028 ITEM: 11.13F	TRAINING RECORDS INCORRECTLY STATED THE TRAINING RECEIVED BY INDIVIDUAL QC INSPECTORS. REF. PG. 0-107.	SEE ITEM 11.13A, AQ-023.	
SSER: 11 ALLEG: AQ-108 ITEM: 11.13F	THE QUALITY CONTROL INSPECTORS INITIALLY ASSIGNED TO INSPECT SOME 2500 CLASS 5 SUPPORTS WERE INADEQUATELY TRAINED AND SUPERVISED. REF. PG. 0-107.	TRT --- TRT REVIEWED THE ALLEGATION THAT SPECIFICALLY QUESTIONED THE QUALIFICATIONS OF PERSONNEL INSPECTING SOME 2500 CLASS 5 SUPPORTS. TRT REVIEWED THE QUALIFICATIONS FOR 19 INSPECTORS INVOLVED WITH THIS ACTIVITY AND CONCLUDED THAT ONLY 1 INSPECTOR HAD QUESTIONABLE QUALIFICATIONS. TRT's POSITION WAS THAT ALTHOUGH A SMALL PERCENTAGE OF THE INSPECTORS WERE NOT QUALIFIED, THE QUALITY OF SOME OF THE HARDWARE MIGHT BE SUSPECT. THEREFORE, THE ALLEGATION HAD SUBSTANCE.	CPRT ---- THE CPRT RESOLUTION OF ISSUES CONCERNING THE QC INSPECTOR TRAINING AND CERTIFICATION PROGRAM IS SUMMARIZED UNDER ITEM 11.83D. CLASS 5 SUPPORTS ARE ADDRESSED BY THE PROJECT CORRECTIVE ACTION PROGRAM (CAP).
SSER: 11 ALLEG: AQ-073 ITEM: 11.14	DOCUMENT CONTROL CLERKS RECEIVED LITTLE TRAINING AND LEARNED HOW TO PROCESS TRAVELERS AND OTHER TYPES OF DOCUMENT PACKAGES ON THE JOB. REF. PG. 0-113.	TRT --- TRT CONCLUDED THAT THIS ALLEGATION WAS SUBSTANTIATED. TRT FOUND NO EVIDENCE OF ANY TYPE OF FORMAL TRAINING PROGRAM FOR DOCUMENT CONTROL CLERKS PRIOR TO THE ISSUANCE OF DCP-3, REV. 16, IN AUGUST 1983.	CPRT ---- CPRT DID NOT INVESTIGATE THIS SPECIFIC ITEM. HOWEVER, CPRT, UNDER ISAP VII.A.3, CONCLUDED, BASED ON THE FINDINGS OF ISAPs VII.C AND III.D, THAT THERE WAS REASONABLE ASSURANCE THAT THERE WERE NO ADVERSE HARDWARE CONDITIONS IN THE PLANT RESULTING FROM PAST PROBLEMS WITH THE OPERATION OF THE DOCUMENT CONTROL CENTER (DCC). (ISAP VII.A.3 RESULTS REPORT, PG 11). OPERATION OF THE DCC IS DESCRIBED IN PROCEDURE DCP-3, CPSES DOCUMENT CONTROL PROGRAM. BASED ON THE REVIEW OF REVISION 10 OF THIS PROCEDURE, CPRT CONCLUDED THAT ADEQUATE CONTROLS WERE IN PLACE TO ENSURE COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF 10CFR50, APPENDIX B, CRITERION VI AND THE CPSES FSAR. CPRT CONCLUDED THAT THE CONTROLS FOR, AND OPERATION OF, THE DCC PERTAINING TO THE DISTRIBUTION OF DRAWINGS AND DRAWING CHANGES WAS SATISFACTORY. (ISAP VII.A.3 RESULTS REPORT PG 9 AND 11).

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
			THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 11 ALLEG: AQ-052 ITEM: 11.16A	SITE PERSONNEL INTERCHANGED PARTS OF UNIDENTIFIED DIAPHRAGM VALVES DURING SITE DISASSEMBLY AND REASSEMBLY OPERATIONS. PART TRACEABILITY TO VALVES WAS LOST AND OPERABILITY OF THE VALVES MAY BE AFFECTED. REF. PG. 0-117	TRT --- TRT CONCLUDED THAT THE ALLEGATION CONCERNING INTERCHANGED VALVE PARTS WAS SUBSTANTIATED. TRT ALSO CONCLUDED THAT THIS CONDITION HAD POTENTIAL QUALITY SIGNIFICANCE DUE TO GENERIC IMPLICATIONS. THE GENERIC IMPLICATIONS WERE BASED ON DOCUMENTED EVIDENCE THAT THE INTERCHANGE OF VALVE PARTS HAD OCCURRED AND EFFECTIVE PROGRAMMATIC CORRECTIVE ACTION HAD NOT BEEN IMPLEMENTED TO IDENTIFY THE PROBLEM AND PREVENT THE LOSS, DAMAGE AND INTERCHANGE OF THE PARTS.	CPRT ---- CPRT, UNDER ISAP VII.B.2, EVALUATED THE ADEQUACY OF CURRENT PROCEDURES TO CONTROL THE DISASSEMBLY AND REASSEMBLY OF VALVES AND THE PHYSICAL STATUS OF VALVES INSTALLED IN THE PLANT THAT HAD BEEN DISASSEMBLED AND REASSEMBLED. CPRT DETERMINED THAT PROCEDURES FOR DISASSEMBLING AND REASSEMBLING VALVES DID PROVIDE ADEQUATE CONTROL OF VALVE COMPONENTS EXCEPT IN CASES WHERE LARGE NUMBERS OF SIMILAR VALVES WERE DISASSEMBLED SIMULTANEOUSLY. A RELATIVELY LARGE NUMBER OF ITT-GRINNELL DIAPHRAGM VALVES WERE DISASSEMBLED AT THE SAME TIME, AND PROBLEMS CONTROLLING VALVE COMPONENTS RESULTED. PROCEDURES WERE REVISED TO PREVENT RECURRENCE OF THOSE PROBLEMS. THE REVISIONS ADDED REQUIREMENTS TO RECORD BODY AND BONNET IDENTIFICATION NUMBERS UPON DISASSEMBLY AND VERIFY PROPER NUMBERS UPON REASSEMBLY. THIS ENSURED THAT PROPER BONNET ASSEMBLIES WERE RETURNED TO VALVES. (ISAP VII.B.2 RESULTS REPORT PG 2, 15, 16, AND 20). CPRT, THEREFORE, SUBSTANTIATED THE CONCERN THAT PARTS FROM SOME DIAPHRAGM VALVES HAD BEEN INTERCHANGED, BUT DUE TO THE TYPES OF VALVES SUPPLIED FOR THE PLANT, DEFICIENCIES COULD NOT OCCUR FROM SUCH INTERCHANGES. MOREOVER, THERE IS A 95 PERCENT CONFIDENCE THAT AT LEAST 95 PERCENT OF VALVES THAT WERE DISASSEMBLED WERE REASSEMBLED IN A FUNCTIONALLY CORRECT MANNER. CURRENT PROCEDURES ENSURE THAT VALVE COMPONENTS WILL BE INSTALLED PROPERLY. (ISAP VII.B.2 RESULTS REPORT PG 16, 19, AND 20). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 11 ALLEG: AQ-061 ITEM: 11.19B	SUPERVISORS TOLD WELDERS TO WELD-UP A GOUGED HOLE RATHER THAN WAIT FOR THE AUTHORIZATION THAT FOLLOWS THE ENGINEERING DISPOSITION OF A DISCREPANT CONDITION. REF. PG 0-131.	TRT --- THE ALLEGATION CONCERNING A GOUGED HOLE IS ADDRESSED IN MECHANICAL AND PIPING CATEGORY 1, ALLEGATIONS AW-38 AND AQW-24. IN THIS ASSESSMENT, TRT EXAMINED THE PROGRAMMATIC CONTROLS USE TO ADDRESS WELD REPAIRS OF THIS TYPE. TRT FOUND THAT SPECIFIC WRITTEN PROCEDURES DEFINED THE CRITERIA THAT DETERMINED WHEN DEFECTS REQUIRED MAJOR, MINOR, OR INPROCESS WELDING REPAIRS. THESE PROCEDURES ALSO INCLUDED TABLES DEFINING REQUIRED INSPECTIONS FOR EACH TYPE OF WELD FABRICATION.	

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		TRT FOUND THAT WELDERS WERE TRAINED IN THE CONTENTS OF THE CONSTRUCTION AND WELDING PROCEDURES AND THAT THIS TRAINING WAS UPDATED AS EACH PROCEDURE WAS REVISED. TRT ALSO FOUND THAT WELD TECHNICIANS SUPERVISED THE WELDING AND SERVED AS THE FIRST, UNOFFICIAL, WELD INSPECTORS. QUALITY CONTROL PERSONNEL THEN INSPECTED THE WELDS AND ACCEPTED THEM OR IDENTIFIED DEFECTS REQUIRING MAJOR OR MINOR REPAIRS. REPAIR PROCESS SHEETS, WHICH DEFINED THE OPERATIONAL STEPS FOR MAKING THE REPAIRS, WERE THEN GENERATED FOR EACH WELD REPAIR. TRT CONCLUDED THAT THIS ALLEGATION WAS NOT SUBSTANTIATED. THE ALLEGATION THAT SUPERVISORS TOLD WELDERS TO PERFORM UNAUTHORIZED REPAIR IS NOT ADDRESSED IN THIS ASSESSMENT AND WILL BE AN OPEN ITEM TO BE FOLLOWED UP BY THE NRC STAFF.	
SSER: 11 ALLEG: AQ-138 ITEM: 11.22A-7	CRAFT PERSONNEL WERE ASKED TO PERFORM WORK WITHOUT PROPER PAPERWORK. TWELVE CONCERNS WERE INCLUDED IN THIS ALLEGATION. REF. PG. 0-143.	TRT --- IN ASSESSING THE TWELVE CONCERNS ABOUT ONSITE FABRICATION ENCOMPASSED BY THIS ALLEGATION, TRT REVIEWED PROCEDURES AND DOCUMENTATION, AUDITED FABRICATION WORK IN PROCESS, WITNESSED THE FABRICATION AND LIQUID PENETRANT EXAMINATION OF A COMPARISON SAMPLE, WITNESSED THE FABRICATION OF THREADED RODS, AND CONDUCTED A WALKDOWN VERIFICATION OF THE MATERIAL LAYDOWN STORAGE AREAS. THE ASSESSMENT ALSO INCLUDED INTERVIEWS WITH BROWN & ROOT (B&R) SHOP FOREMEN AND CRAFT PERSONNEL, QC INSPECTORS, QUALITY ENGINEERS, MATERIAL CONTROL PERSONNEL, AND A TU ELECTRIC INSTRUMENTATION ENGINEER. TRT CONCLUDED THAT SIX OF THE TWELVE CONCERNS WERE NOT SUBSTANTIATED AND ANOTHER FIVE CONCERNS COULD BE NEITHER SUBSTANTIATED NOR REFUTED. TRT FOUND PROCEDURAL NONCOMPLIANCES. HOWEVER, THE DOCUMENTATION EXAMINED BY TRT IN THE IRON FABRICATION SHOP INDICATED THAT REQUIRED QC INSPECTIONS WERE PERFORMED AND MATERIAL TRACEABILITY WAS MAINTAINED AND DOCUMENTED.	CPRT ---- SEE ITEM 11.22A-3.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		TRT CONCLUDED THAT THE PROCEDURAL VIOLATIONS HAD QUALITY SIGNIFICANCE AND GENERIC IMPLICATIONS.	
SSER: 11 ALLEG: AQ-138 ITEM: 11.22A-3	NON-SAFETY RELATED MATERIAL WAS MIXED WITH SAFETY RELATED MATERIAL. REF. PG. 0-143.	TRT --- TRT'S ASSESSMENT FOUND THE CONCERN THAT SAFETY AND NON-SAFETY MATERIALS WERE MIXED WAS NOT SUBSTANTIATED. HOWEVER, TRT FOUND A PILE OF SCRAP MATERIAL, WHICH ALTHOUGH IT WAS SEPARATED FROM OTHER MATERIAL, WAS NOT IDENTIFIED AS SCRAP MATERIAL, NOR WAS THE AREA IN WHICH IT WAS FOUND IDENTIFIED AS A SCRAP/SALVAGE AREA. TRT ALSO FOUND THAT UNIDENTIFIED BULK MATERIALS WERE MINGLED WITH SAFETY AND WITH NONSAFETY MATERIAL IN THE LAYDOWN YARD ADJACENT TO THE FORMER ELECTRICAL HANGER SHOP. THIS CONDITION WAS IN NONCOMPLIANCE WITH PROCEDURE CP-CPM-8.1, SECTIONS 3.3 AND 3.5. THESE SECTIONS REQUIRE SAFETY-RELATED ITEMS TO BE PHYSICALLY SEPARATED FROM NONSAFETY-RELATED ITEMS AND IDENTIFIED UNLESS SEGREGATION IS NOT PRACTICAL DUE TO SIZE, CONFIGURATION, OR SPECIAL STORAGE REQUIREMENTS. WHEN SEPARATION IS NOT POSSIBLE, POSITIVE IDENTIFICATION OF THE MATERIAL MUST BE MAINTAINED. ALSO, MATERIAL WITHDRAWN FROM A WAREHOUSE AND NOT NEEDED, MUST BE RETURNED TO THE WAREHOUSE USING A MATERIAL RETURN TO WAREHOUSE FORM. IN ADDITION, TRT NOTED THAT PROCEDURE QI-QP-11.14-1, INSPECTION OF SITE FABRICATION AND INSTALLATION OF STRUCTURAL/MISCELLANEOUS STEEL, SECTION 3.1, REQUIRED THAT QC INSPECTORS PERFORM RANDOM SURVEILLANCE OF STORAGE AND CONTROL OF MATERIALS IN THE STRUCTURAL/MISCELLANEOUS STEEL SHOP AREA. TRT FOUND NO EVIDENCE THAT THE REQUIRED RANDOM SURVEILLANCES WERE PERFORMED, A CONDITION IN NONCOMPLIANCE WITH THE PROCEDURE. TRT COULD NOT SUBSTANTIATE THE ALLEGATION THAT SAFETY AND NONSAFETY MATERIALS WERE MIXED. HOWEVER, TRT FOUND PROCEDURAL NONCOMPLIANCES. TRT, THEREFORE, CONCLUDED THAT THE PROCEDURAL VIOLATIONS HAVE QUALITY SIGNIFICANCE AND GENERIC IMPLICATIONS.	CPRT ---- UNDER ISAP VII.B.1, CPRT EVALUATED EACH OF THE TRT FINDINGS REGARDING PAST ONSITE FABRICATION SHOP ACTIVITIES AND THE NRC CONCLUSIONS THERETO. AN INDEPTH SURVEY AND EVALUATION OF PRESENT ACTIVITIES RELATIVE TO THE IDENTIFIED ISSUES/CONCERNS REVEALED NO DISCREPANCIES. ALTHOUGH INADEQUACIES RELATABLE TO THE TRT FINDINGS AND OTHER EXTERNAL SOURCE ISSUES WERE IDENTIFIED IN THE HISTORICAL PROCEDURES AND THE QC RECORDS EVALUATED, CPRT CONCLUDED THAT EXISTING CONTROLS IN THE FABRICATION SHOP EFFECTIVELY ADDRESSED THOSE ISSUES AND CONCERNS. THIRTY-TWO DEVIATION REPORTS AND TWO QA/QC PROGRAM DEVIATION REPORTS WERE ISSUED TO DOCUMENT THE DEVIATIONS IDENTIFIED THROUGH IMPLEMENTATION OF ISAP VII.B.1. MOST OF THESE DEVIATIONS WERE IDENTIFIED IN THE HISTORICAL DOCUMENTATION PACKAGES. THESE DEVIATIONS CONFIRMED TRT FINDINGS CONCERNING PAST PROCEDURAL INADEQUACIES AND IMPLEMENTATION PROBLEMS RELATIVE TO MANAGEMENT AND INSPECTION CONTROLS OF ONSITE FABRICATION ACTIVITIES. THE DEVIATIONS DESCRIBED IN THESE REPORTS HAVE BEEN EVALUATED AND DETERMINED TO HAVE NO SAFETY-SIGNIFICANT HARDWARE EFFECT ON THE COMPONENT SUPPORT SYSTEMS. (ISAP VII.B.1 RESULTS REPORT PG 27 AND 28). THE OVERALL CPRT EVALUATION OF THE ADEQUACY OF PROCEDURES IS SUMMARIZED UNDER ITEM 11.84B. THE CPRT RESULTS RESOLVE THIS ISSUE. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT. SEE ALSO ITEM 11.25 FOR CPRT RELATED RESULTS REGARDING MATERIAL TRACEABILITY.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
SSER: 11 ALLEG: AQ-054 ITEM: 11.23A	CLEANING PROCEDURES FOR AND CLEANLINESS OF COMPONENTS AND AREAS WERE NOT MAINTAINED DURING CONSTRUCTION OF THE PLANT. REF. PG 0-155.	TRT --- BASED ON THE REVIEW OF RECORDS OF QC SURVEILLANCES FOR JANUARY AND FEBRUARY 1979, AND INSPECTION REPORTS FOR 1981 AND 1982, TRT FOUND SOME MERIT IN THE ALLEGATION RELATING TO INADEQUATE CLEANLINESS CONTROLS DURING THE EARLY STAGES OF CONSTRUCTION. TRT CONCLUDED THAT THE CLEANLINESS CONTROLS IMPLEMENTED SINCE 1981 INDICATED THAT MANAGEMENT RECOGNIZED THE CLEANLINESS PROBLEM AND IMPLEMENTED PROCEDURES TO CORRECT IT. TRT NOTED, HOWEVER, THAT FP-55-08 REQUIRED ONLY TWO SWIPE TESTS OF THE REACTOR VESSEL (ONE ON THE SIDE, ONE ON THE BOTTOM). ALTHOUGH THE PROCEDURE WAS STILL A DRAFT, TRT EXPRESSED CONCERN ABOUT THE ADEQUACY OF PERFORMING ONLY TWO SWIPE TESTS TO VERIFY CLEANLINESS OF AN ITEM THE SIZE OF THE REACTOR VESSEL.	CPRT ---- UNDER ISAP VII.A.7, CPRT EVALUATED PLANT HOUSEKEEPING AND SYSTEM CLEANLINESS. CPRT CONCLUDED THAT BROWN & ROOT CONSTRUCTION PROCEDURES THAT DEFINE HOUSEKEEPING AND CLEANLINESS REQUIREMENTS WERE ADEQUATE TO MEET FSAR COMMITMENTS. (ISAP VII.A.7 RESULTS REPORT, PG 8 AND 20). EXISTING HOUSEKEEPING PRACTICE AND PROCEDURES WERE CONSIDERED SATISFACTORY AND COMPLY WITH THE PROGRAM BASIS. THIS CONCLUSION REFLECTS THE RESULTS OF THE OBSERVATIONS OF TU ELECTRIC SURVEILLANCES OF UNIT 1 AND 2 AREAS AND FACILITIES (WAREHOUSES, LAY-DOWN AREAS, IN-PLACE STORAGE, ETC.) WHICH VERIFIED THE FOLLOWING: - SATISFACTORY ACCESS CONTROL - ABSENCE OF EVIDENCE OF DAMAGE TO OR DETERIORATION OF PLANT MATERIALS AND EQUIPMENT - SATISFACTORY PROTECTION OF EQUIPMENT FROM HARMFUL ENVIRONMENTAL AND WORK INDUCED CONDITIONS. (ISAP VII.A.7 RESULTS REPORT, PG 24). EXISTING PLANT AND STORAGE SURVEILLANCE PROCEDURES ALSO COMPLY WITH THE PROGRAM BASIS WITH ONLY MINOR INADEQUACIES. THOSE INADEQUACIES INCLUDED THE NEED TO ESTABLISH A MINIMUM DISTRIBUTION OF SURVEILLANCE REPORTS TO ENSURE THE REPORTS WERE APPROPRIATELY EVALUATED AND TO DEFINE ATTRIBUTES AND CRITERIA FOR THE SURVEILLANCES. THE EXISTING SURVEILLANCE PROGRAM WAS ADEQUATELY IMPLEMENTED AND WAS EFFECTIVE IN IDENTIFYING AND OBTAINING RESOLUTION OF UNSATISFACTORY CONDITIONS. (ISAP VII.A.7 RESULTS REPORT, PG 10, 23, AND 24). IN ADDITION, CPRT EVALUATED REACTOR VESSEL CLEANLINESS. THE INTENT OF THE TU ELECTRIC FLUSH PLAN FP 55-08 WAS TO REQUIRE A MINIMUM OF ONE SWIPE ON A VERTICAL SURFACE AND ONE SWIPE ON A HORIZONTAL SURFACE. THE ACTUAL NUMBER AND LOCATION OF SWIPE TESTS WAS LEFT TO THE DISCRETION OF TEST LAB PERSONNEL. ALTHOUGH TWO SWIPE TESTS OF THE REACTOR VESSEL AS REQUIRED BY FP 55-08 MIGHT NOT HAVE BEEN SUFFICIENT TO INSURE THAT THE SURFACES HAD BEEN ADEQUATELY CLEANED AND MET CHLORIDE AND FLUORIDE LIMITS, EIGHT SWIPES WERE ACTUALLY TAKEN AND ANALYZED. CPRT CONSIDERED EIGHT SWIPES SUFFICIENT TO

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			VERIFY THE CLEANLINESS OF THE REACTOR VESSEL. (ISAP VII.A.7 RESULTS REPORT, PG 20). THE RESULTS OF THE SWIPE TESTS FOR THE REACTOR VESSEL WERE ACCEPTABLE FOR CLASS C CLEANLINESS OF INTERIOR SURFACES. CLASS C CLEANLINESS WAS PRESCRIBED FOR THE REACTOR VESSEL BY WESTINGHOUSE SPECIFICATION PS 202722. (ISAP VII.A.7 RESULTS REPORT PG 20, 21, AND 24). THE CPRT RESULTS RESOLVE THIS ISSUE. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
SSER: 11 ALLEG: AQ-035 ITEM: 11.24E	A B&R QUALITY CNTRL MGR ISSUED ORAL & WRITTEN INSTR THAT STATED THAT IR'S WERE TO BE USED TO DOCUMENT DEFICIENCIES, RATHER THAN NCR'S, BECAUSE NCRS REQUIRED ENGR REVIEW & DISPOSITION FOR CLOSURE, WHEREAS IRS COULD BE CLOSED BY ANYONE. REF. PG O-161.	TRT --- ALTHOUGH THE ALLEGATION WAS NOT SUBSTANTIATED THAT A BROWN & ROOT (B&R) QC MANAGER ISSUED INSTRUCTIONS TO DOCUMENT DEFICIENCIES ON INSPECTION REPORTS INSTEAD OF NONCONFORMANCE REPORTS (NCRs), THE TRT REVIEW DID IDENTIFY CONCERNS. THE GENERIC SIGNIFICANCE OF THESE CONCERNS IS DISCUSSED IN QA/QC CATEGORY 8, ALLEGATION AQ-135, WHICH STATES THAT THE ALLEGATION ON THE INADEQUATE REVIEW OF DEFICIENCIES LED TRT TO IDENTIFY A PROGRAMMATIC WEAKNESS INVOLVING THE LACK OF GUIDANCE ON THE LEVEL OF DEFICIENCY NEEDED TO INITIATE AN NCR. THIS FINDING HAS GENERIC IMPLICATIONS FOR TU ELECTRIC's OTHER INSPECTION AND CORRECTIVE ACTION PROGRAMS FOR THE DESIGN AND CONSTRUCTION OF CPSES. REVIEW OF ALLEGATION AQ-135 ALSO LED TRT TO CONCLUDE THAT TU ELECTRIC's PROGRAM FOR TRENDING NONCONFORMANCES WAS WEAK.	CPRT ---- THE CPRT RESOLUTION OF THESE TRT CONCERNS IS SUMMARIZED UNDER ITEM 11.37A, AQ-135.
SSER: 11 ALLEG: AQ-097 ITEM: 11.24N	BECAUSE THE DOCUMENTATION DID NOT MATCH THE LOG BOOK, PERMANENT DOCUMENTS WERE REMOVED FROM THE VAULTS AND NEW NCRs WERE WRITTEN RELEVANT TO OLD PROBLEMS. REF. PG. O-161.	TRT --- THE ALLEGATION THAT PERMANENT DOCUMENTATION WAS PULLED OUT OF THE RECORDS VAULT AND NONCONFORMANCE REPORTS (NCRs) WERE WRITTEN BECAUSE DOCUMENTATION DID NOT MATCH THE "LOG BOOK" WAS SUBSTANTIATED. HOWEVER, THE OCCURRENCES WERE CONDUCTED ACCORDING TO PROCEDURE AND HAVE NO GENERIC IMPLICATIONS. THE INITIAL NONCONFORMANCE REPORTING PROCESS WAS DEFICIENT IN SOME AREAS. HOWEVER, A NUMBER OF AUDITS HAD RESULTED IN REVISIONS TO PROCEDURES TO CORRECT THOSE DEFICIENCIES.	CPRT ---- CPRT RESOLUTION OF CONCERNS REGARDING THE CORRECTIVE ACTION (CAR) SYSTEM IS SUMMARIZED UNDER 11.84E.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		EXISTING PROCEDURES WERE GENERALLY ADEQUATE, WITH SOME WEAKNESSES AS NOTED IN THIS ALLEGATION AND AQ-34, AQ-36, AQ-114, AND AQ-124. REVIEW OF THE BROWN & ROOT NCR LOG INDICATED THAT FIFTY NCRs, RELATED TO INCORRECT DOCUMENTATION, WERE ISSUED DURING AUGUST 1984. TRT ATTRIBUTED PART OF THIS INCREASE TO AN INCREASE IN THE AMOUNT OF DOCUMENTATION BEING TRANSMITTED TO THE RECORDS VAULT. THE ISSUANCE OF THAT MANY NCRs WOULD SEEM TO WARRANT THE PREPARATION OF A CORRECTIVE ACTION REQUEST (CAR). HOWEVER, NO CAR WAS WRITTEN. TRT NOTED OTHER INSTANCES IN WHICH SPECIFIC NONCONFORMANCES WERE CORRECTED, BUT PROGRAMMATIC CORRECTIVE ACTION WAS NOT TAKEN. TRT NOTED FROM THE CAR LOG THAT NO CARs HAD BEEN ISSUED BETWEEN JUNE 1,1980, AND JANUARY 14, 1982, BUT FOUR SEPARATE CARS HAD BEEN ISSUED RELATING TO HOLD POINT VIOLATIONS. THIS LACK OF ISSUANCE OF ANY CARs FOR 19 MONTHS AND REPETITIVE ISSUANCE OF FOUR CARs FOR THE SAME SUBJECT, INDICATED TO TRT THAT THIS PORTION OF THE QA PROGRAM WAS NOT EFFECTIVE. THE NCR FORM DID NOT IDENTIFY A REVIEW OF NCRs BY AN ELEMENT OF THE QA ORGANIZATION. THE QA REVIEW IDENTIFIED IN TU ELECTRIC PROCEDURE CP-QP-16.0, PARAGRAPH 3.2.6, WAS IN REALITY A QUALITY ENGINEER (QE) REVIEW, AND THE ONLY REFERENCE TO A QA REVIEW IN BROWN & ROOT PROCEDURE CP-QAP-16.1, WAS TO A MANAGERIAL REVIEW. ALLEGATION AQ-97 WAS SUBSTANTIATED, BUT THE ALLEGED OCCURRENCES WERE CONDUCTED ACCORDING TO PROCEDURE. TRT NOTED, HOWEVER, A WEAKNESS IN THE CAR SYSTEM.	
SSER: 11 ALLEG: AQ-124 ITEM: 11.24T	SOME NONCONFORMANCE REPORTS (NCRs) WERE DISPOSITIONED INACCURATELY. REF. PG. O-101.	TRT --- TRT DID IDENTIFY SPECIFIC CASES OF IMPROPER DISPOSITIONING OF NONCONFORMANCE REPORTS (NCRs). THIS ALLEGATION WAS, THEREFORE, CONSIDERED SUBSTANTIATED.	CPRT ---- SEE ITEM 11.84E.
SSER: 11	THERE WAS A LACK OF MATERIAL	TRT	CPRT

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
ALLEG: AQ-005 ITEM: 11.25	TRACEABILITY FOR SAFETY-RELATED MATERIALS AND COMPONENTS. REF. PG. O-175	--- BASED ON ITS REVIEW, TRT CONCLUDED THAT THE ALLEGATION THAT TU ELECTRIC FAILED TO MAINTAIN MATERIAL TRACEABILITY FOR SAFETY-RELATED MATERIAL FOR NUMEROUS HARDWARE COMPONENTS PRIOR TO OCTOBER 1981, WAS SUBSTANTIATED. TU ELECTRIC DID HAVE PROCEDURES FOR MATERIAL TRACEABILITY, AS REQUIRED BY 10 CFR 50, APPENDIX B, CRITERION VIII; HOWEVER, TU ELECTRIC DID NOT FOLLOW THESE PROCEDURES, RESULTING IN A PARTIAL BREAKDOWN IN THE QA PROGRAM. ALTHOUGH CORRECTIVE ACTIONS WERE TAKEN AND WERE DOCUMENTED (NCRs M-3033 AND M-3258) IN ACCORDANCE WITH TU ELECTRIC QA PROCEDURE CP-QAP-8.5, TU ELECTRIC FAILED TO REPORT THIS PARTIAL BREAKDOWN TO NRC IN ACCORDANCE WITH 10 CFR 50.55(E) REQUIREMENTS.	---- CPRT, UNDER ISAP VII.A.1, DETERMINED THAT THE NRC LETTER OF JANUARY 8, 1985 REFERENCED THE 1981 ASME SURVEY AND INDICATED THAT THE MATERIAL TRACEABILITY ISSUES IDENTIFIED THEREIN WERE NOT REPORTED IN ACCORDANCE WITH 10CFR50.55(e). BASED UPON THE DISCREPANCIES IDENTIFIED FOR MATERIAL TRACEABILITY DURING THE 1981 ASME SURVEY, THE SURVEY TEAM DID NOT IDENTIFY A SIGNIFICANT BREAKDOWN IN THE MATERIAL TRACEABILITY PROGRAM OF BROWN & ROOT. THE DECISION OF THE SURVEY TEAM, BASED UPON THEIR TOTAL FINDINGS, WAS TO ALLOW THE NA AND NPT CERTIFICATES TO EXPIRE, NOT TO REVOKE THE CERTIFICATES. A REVOCATION WOULD HAVE SIGNALED A SIGNIFICANT BREAKDOWN AND WOULD HAVE BEEN REPORTABLE. THEREFORE, CPRT CONCLUDED THAT THIS ISSUE WAS NOT REPORTABLE IN ACCORDANCE WITH THE REQUIREMENTS OF 10CFR50.55(e). (ISAP VII.A.1 RESULTS REPORT, PG 10 AND 11). CPRT CONCLUDED THAT THE MATERIAL CONTROL/TRACEABILITY PROGRAM WAS IN ACCORDANCE WITH TU ELECTRIC COMMITMENTS IN THE FSAR. THE IMPLEMENTATION OF THIS PROGRAM, EVEN THOUGH SOME PROCEDURES WERE CONSIDERED TO HAVE WEAK CONTROLS, WAS GENERALLY ADEQUATE. THE OVERALL PROGRAM COULD BE IMPROVED BY IMPLEMENTING A MORE RIGID CONTROL OF THE PURCHASE OF ALL MATERIALS OR THE IMPLEMENTATION OF AN INTEGRATED PROCEDURE SYSTEM TO PROVIDE STRONGER OVERALL MATERIAL CONTROL. (ISAP VII.A.1 RESULTS REPORT, PG 22). THE CPRT RESULTS RESOLVE THIS ISSUE. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
SSER: 11 ALLEG: AQ-038 ITEM: 11.26	QC INSPECTORS WERE HARASSED BY BEING TOLD TO IGNORE PROBLEMS. REF. PG. O-195.	TRT --- THIS ALLEGATION, WHICH RELATED SPECIFICALLY TO THE INSPECTION OF CHICAGE BRIDGE & IRON COMPANY (CB&I) PIPE WHIP RESTRAINTS AND INVOLVED AN INSPECTOR NOTICING WELD DEFECTS ON VENDOR INSPECTED RESTRAINTS RECEIVED AT THE SITE, WAS PREVIOUSLY EVALUATED BY NRC REVION IV (RIV) IN INSPECTION REPORT (IR) 82 10/82-05. THE RIV EVALUATION STATED THAT A NONCONFORMANCE REPORT (NCR) WRITTEN BY THE ALLEGER, A QC INSPECTOR, AGAINST PIPE WHIP RESTRAINTS IN JANUARY 1982 COULD NOT BE LOCATED. A SUBSEQUENT NCR WRITTEN BY THE INSPECTOR FOR DEFECTS ON FOUR PIPE WHIP RESTRAINTS WAS DISPOSITIONED IN MARCH 1982 AS REQUIRING REPAIRS. TRT COULD NOT ADEQUATELY IDENTIFY THE CIRCUMSTANCES SURROUNDING THE LACK OF SUBMITTAL OF THE INITIAL NCR IN JANUARY 1982.	CPRT ---- THE ISSUE REGARDING DISPOSITION OF THESE VENDOR WELDS IS ADDRESSED BY THE PROJECT. (DR-C-87-4114). THE CPRT CONSIDERATION OF INSPECTOR HARASSMENT AND INTIMIDATION FOLLOWS: DATA WAS EVALUATED TO RESOLVE CONCERNS REGARDING THE POTENTIAL FOR ADVERSE IMPACTS ON THE QUALITY OF INSTALLED HARDWARE THAT COULD BE ATTRIBUTABLE TO POTENTIAL HARASSMENT OR INTIMIDATION OF QC INSPECTORS. A COMPREHENSIVE SEARCH OF EXTERNAL SOURCE ISSUES WAS PERFORMED TO IDENTIFY ALL CONCERNS. THIS SEARCH OF EXTERNAL SOURCES, INCLUDING NRC REPORTS, WHICH ALSO COVERED ALLEGATIONS AND INDEPENDENT

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		HOWEVER, THE GENERATION OF THE ADDITIONAL NCRs CAUSED THE WELD DEFECTS TO RECEIVE SOME DEGREE OF EVALUATION AND DISPOSITION IN ACCORDANCE WITH THE NCR SYSTEM. BECAUSE OF THE LACK OF SPECIFIC INFORMATION PROVIDED BY TU ELECTRIC RELATED TO PAINT REMOVAL AND THE WELD REINSPECTION PROCESS, TRT COULD NEITHER CONFIRM NOR REFUTE THAT THE EVALUATION AND DISPOSITION WERE ADEQUATE. CONSEQUENTLY, ADDITIONAL EXPLANATION FOR THIS REINSPECTION PROCESS HAS BEEN REQUESTED FROM TU ELECTRIC. THE DECISION REGARDING THE ALLEGATION OF INSPECTOR HARASSMENT IS DOCUMENTED IN BROWN & ROOT vs. DONOVAN, 747 F.2D 1029 (5th CIR. 1984). VENDOR WELD DEFECTS INITIALLY NOTICED BY THE INSPECTOR, WHICH CAUSED QC MANAGEMENT TO WARN THE INSPECTOR TO STAY WITHIN THE SCOPE OF HIS RESPONSIBILITY AND WHICH MAY HAVE BEEN A CONTRIBUTING FACTOR IN TERMINATING HIS EMPLOYMENT, WERE SUBSEQUENTLY IDENTIFIED AND ULTIMATELY DISPOSITIONED IN ACCORDANCE WITH THE NCR SYSTEM. THEREFORE, THE ALLEGATION THAT INSPECTORS WERE TOLD TO IGNORE PROBLEMS WAS ESSENTIALLY SUBSTANTIATED. THE OPEN ISSUE REGARDING WELD REINSPECTION WILL BE EVALUATED AND DOCUMENTED IN A SUBSEQUENT SSER.	AUDITOR's REPORTS, WAS DEVELOPED INTO A MATRIX OF EXTERNAL SOURCE ISSUES, WHICH WAS USED TO ASSURE THAT VALID CONCERNS WERE CONSIDERED IN THE CPRT EVALUATION PROCESS. THE NRC REPORTS IDENTIFIED SOME INSTANCES OF POTENTIAL INTIMIDATION, AND REPORTED NRC INVESTIGATION RESULTS (NOT COMPLETE AS OF THE DATE OF THE REPORTS) REVEALED APPROPRIATE ACTION TAKEN BY TU ELECTRIC TO PREVENT INSPECTOR INTIMIDATION. AS PART OF THE ASLB CONTENTION 2 PROCEEDINGS, TWO EXTERNAL PANELS REVIEWED AND REPORTED ON ALLEGATIONS OF INTIMIDATION. THEY CONCLUDED THAT THERE WERE SOME INCIDENTS BUT NO "CLIMATE OF INTIMIDATION." NEITHER STUDY SUGGESTS THAT POOR-QUALITY WORK RESULTED FROM THE INCIDENTS THAT DID OCCUR. THE REVIEW OF SAFETEAM RECORDS REVEALED A FEW EMPLOYEE CONCERNS RELATED TO HARASSMENT AND INTIMIDATION. IN EACH CASE EFFECTIVE AND COMPLETE ACTION WAS TAKEN BY TU ELECTRIC OR SUBCONTRACTOR MANAGEMENT TO RESOLVE THE CONCERN. CPRT, UNDER ISAP VII.A.6, DETERMINED THAT THE SAFETEAM PROGRAM DOES "EFFECTIVELY ENCOURAGE EMPLOYEES TO VOICE CONCERNS AND PROVIDES ADEQUATE MEANS TO DO SO." THE ASSESSMENTS OF IDENTIFIED DEFICIENCIES, ADVERSE TRENDS, AND UNCLASSIFIED TRENDS PERFORMED UNDER VII.C INCLUDED AN INVESTIGATION OF ROOT CAUSES FOR EACH SUCH FINDING. IN CASES WHERE THE ROOT CAUSE WAS DETERMINED TO BE INSPECTOR ERROR, THE POTENTIAL FOR QC INSPECTOR INTIMIDATION MIGHT HAVE EXISTED. IN SOME OF THESE CASES, OTHER LIKELY CAUSES FOR INSPECTOR ERROR WERE DETERMINED, AND NO POSITIVE INDICATION OF HARASSMENT OR INTIMIDATION WAS IDENTIFIED. IN OTHER CASES, INVOLVING A LOW FREQUENCY OF ERRORS, HARASSMENT OR INTIMIDATION, WHILE NOT LIKELY AS A WIDESPREAD FACTOR, COULD NOT BE RULED OUT AS A POSSIBILITY IN INDIVIDUAL INSTANCES. THESE FEW SITUATIONS, AS AN EXTRA CAUTION, WERE REFERRED TO TU ELECTRIC SAFETEAM FOR FURTHER INVESTIGATION AND RESOLUTION. HAD THERE BEEN A CLIMATE OF HARASSMENT AND INTIMIDATION AFFECTING HARDWARE QUALITY, THE EXTENSIVE INVESTIGATIONS BY CPRT AND OTHER ORGANIZATIONS WOULD HAVE REVEALED SOME EVIDENCE OF IT. THEREFORE, IT IS CONCLUDED THAT, SUBJECT TO CONFIRMATION BY THE SAFETEAM INVESTIGATION, INSPECTOR HARASSMENT AND INTIMIDATION DID NOT HAVE A SIGNIFICANT EFFECT ON THE ADEQUACY OF HARDWARE OR INSPECTIONS AT CPSES. (ISAP VII.C RESULTS REPORT, PG 135-136).
SSER: 11	FUEL TRANSFER CANAL LINER	TRT	CPRT

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ALLEG: AQ-055 ITEM: 11.27A	DOCUMENTATION WAS FALSIFIED. REQUIRED WELD RADIOGRAPHY WAS NOT COMPLETED. REF. PG. C-199.	--- THE ALLEGATION THAT REQUIRED RADIOGRAPHY WAS NOT COMPLETED WAS NOT SUBSTANTIATED, BECAUSE TRT FOUND RECORDS SHOWING THE RESULTS OF RADIOGRAPHY OF THOSE WELDS. THE PRIMARY SUBJECT OF THIS ALLEGATION WAS THE FALSIFICATION OR IMPROPER SIGN-OFF OF RECORDS, I.E., INSPECTION TRAVELERS. TRT COULD NOT CONCLUDE THAT THE IRREGULARITIES NOTED CONSTITUTED FALSIFICATION. APPARENTLY, THESE IRREGULARITIES OCCURRED BECAUSE OF POOR PRACTICES AND INADEQUATE INSPECTION FORMS. SOME TRAVELERS ALSO APPEARED TO HAVE BEEN SIGNED OFF IMPROPERLY. TRT CONCLUDED THAT THERE WERE RECORD ANOMALIES APPARENT IN THE LINER PLATE TRAVELERS WHICH WERE NOT ADEQUATELY EXPLAINED ON THE FACE OF THE TRAVELERS (e.g., DATES CHANGED), WHICH VIOLATED PROCEDURES (e.g., FAILURE TO TRANSFER SIGN-OFF FROM CHITS TO TRAVELERS DAILY), AND WHICH WERE DUE TO UNCLEAR PROCEDURES (i.e., CONFUSION OVER THE USE OF THE FIVE-LINE TRAVELER). IT APPEARED TO TRT THAT THE QC DOCUMENTATION RELATING TO THE LINER PLATE WELDS DID NOT MEET THE STANDARDS EXPECTED OF AN EFFECTIVE QA/QC PROGRAM, OR THE STANDARDS REQUIRED BY GIBBS & HILL SPECIFICATION 2323-SS-18 AND 10 CFR 50, APPENDIX B.	---- AS A RESULT OF THEIR INVESTIGATION, TRT CONCLUDED THAT THESE TRAVELERS WERE SIGNED OFF IMPROPERLY, i.e., WITHOUT SUBSTANTIATED OR PERSONAL INSPECTION OF THE INSIDE WELD. TRT DID NOT CONSIDER THIS IMPROPER SIGN-OFF TO BE FALSIFICATION, AS STATED BY THE ALLEGER. CPRT, UNDER ISAP VII.A.8, CONCURRED IN THIS CONCLUSION AS NO EVIDENCE WAS NOTED DURING THE CPRT REVIEW OF SIXTY FUEL POOL INSPECTION TRAVELER PACKAGES TO INDICATE THAT ENTRIES HAD BEEN FRAUDULENTLY MADE OR THAT INSPECTION CONCLUSIONS HAD BEEN ALTERED. DESPITE THE DOCUMENTATION PROBLEMS, THERE IS A SUBSTANTIAL AMOUNT OF INFORMATION AVAILABLE TO INDICATE THAT IT IS LIKELY THAT THE FUEL POOL LINER SYSTEM WAS GENERALLY FABRICATED AND INSTALLED USING QUALIFIED WELD PROCEDURES AND WELDERS AND THAT APPROPRIATE INSPECTIONS AND TESTS WERE ACTUALLY CONDUCTED. (ISAP VII.A.8 RESULTS REPORT, PG 22 AND 23). THE CPRT RESULTS RESOLVE THIS ISSUE. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
SSER: 11 ALLEG: AQ-078 ITEM: 11.27B	HOLD POINTS FOR INSPECTION ON TRAVELERS FOR THE FUEL BUILDING WERE SIGNED OFF IMPROPERLY. REF. PG O-199	TRT --- TU ELECTRIC REPRESENTATIVES INDICATED THAT IT WAS COMMON PRACTICE FOR THE MILLWRIGHT DEPARTMENT TO WRITE "SAT" AND, IN SOME INSTANCES, THE SCHEDULED DATE FOR INSPECTION OF THE COMPLETED WELD ON THE TRAVELER, WITH THE INTENTION OF OBTAINING THE INSPECTOR'S SIGNATURE WHEN THE WELD WAS COMPLETED AND INSPECTED. WELDING PRIORITIES APPARENTLY WERE THEN RESCHEDULED AND THE PRE-ENTERED DATES WERE CORRECTED WHEN THE TRAVELER WAS SIGNED. TRT CONCLUDED THAT THERE WERE RECORD ANOMALIES APPARENT IN THE LINER PLATE TRAVELERS THAT WERE NOT ADEQUATELY EXPLAINED ON THE FACE OF THE TRAVELERS (E.G., DATES CHANGED), VIOLATED PROCEDURES (E.G.,	CPRT ---- SEE ITEM 11.27A.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		FAILURE TO TRANSFER SIGN-OFF FROM CHITS TO TRAVELERS DAILY), AND WERE DUE TO UNCLEAR PROCEDURES (I.E., CONFUSION OVER THE USE OF THE FIVE-LINE TRAVELER). IT APPEARES TO TRT THAT THE QC DOCUMENTATION RELATING TO THE LINER PLATE WELDS DID NOT MEET THE STANDARDS EXPECTED OF AN EFFECTIVE QA/QC PROGRAM, OR THE STANDARDS REQUIRED BY GIBBS & HILL SPECIFICATION 2323-SS-18 AND 10 CFR 50 APPENDIX B.	
SSER: 11 ALLEG: AQ-126 ITEM: 11.28B	BETWEEN DECEMBER 1983 AND FEBRUARY 1984, FORMER CRAFTSMEN AND INSPECTORS WERE PERFORMING A RECORD VERIFICATION OF DOCUMENT PACKAGES THAT CONTAINED RECORDS OF THEIR OWN WORK OR INSPECTIONS. REF. PG. O-209.	TRT --- BROWN & ROOT (B&R) ACKNOWLEDGED THAT THERE WERE INSTANCES IN THE PAST WHERE THIS SITUATION HAD OCCURRED, BUT THEY COULD NOT IDENTIFY SPECIFIC INSTANCES OF THIS PRACTICE. TRT INTERVIEWED THE AUTHORIZED NUCLEAR INSPECTORS (ANIs) WHO STATED THAT WHEN THEY FOUND INSPECTORS VERIFYING THEIR OWN WORK AT UNIT 1, THEY RETURNED THE PACKAGES TO B&R FOR REVERIFICATION BY ANOTHER PERSON. TRT ATTEMPTED TO IDENTIFY INSTANCES OF THIS TYPE OF POTENTIAL CONFLICT OF INTEREST BUT WAS UNABLE TO DO SO. TRT REVIEWED THE 66 FIELD WELD DATA CARD PACKAGES TRANSMITTED BY THE N-5 GROUP TO THE PERMANENT PLANT RECORDS VAULT FROM NOVEMBER 1, 1983, TO MARCH 31, 1984. TRT COULD NOT IDENTIFY A SPECIFIC INSTANCE WHERE THE DOCUMENT REVIEWER WAS THE SAME PERSON AS THE QC INSPECTOR, WELDER, OR WELD FILLER METAL ISSUER. TRT ALSO SELECTED 92 PIPE HANGER RECORD PACKAGES, ONE FROM EACH N-5 GROUP, TRANSMITTED TO THE PERMANENT PLANT RECORDS VAULT FROM DECEMBER 1, 1983, TO FEBRUARY 29, 1984. EACH PACKAGE CONTAINED ONE TO SIX WELD DATA CARDS (THE AVERAGE WAS THREE). TRT COULD FIND NO INSTANCE WHERE THE DOCUMENT REVIEWER WAS THE SAME INDIVIDUAL AS THE CRAFT PERSON OR THE QC INSPECTOR. BASED ON INTERVIEWS WITH ANIs AND WITH B&R MANAGEMENT, WHO WERE DIRECTLY RESPONSIBLE FOR ESTABLISHING THE RECORD REVIEW GROUP, TRT SUBSTANTIATED THE ALLEGATION OF THE POTENTIAL FOR INSPECTORS REVIEWING RECORDS OF THEIR OWN WORK, ALTHOUGH SPECIFIC EXAMPLES WERE NOT	CPRT ---- THE CPRT EVALUATION OF THE OVERALL EFFECTIVENESS OF THE BROWN & ROOT QA PROGRAM IS SUMMARIZED UNDER ITEM 11.83K.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		FOUND. THE SITUATION WAS CREATED BY THE INTERPRETATION OF B&R QA MANAGEMENT THAT 10 CFR PART 50, APPENDIX B, CRITERION X WAS NOT VIOLATED. TRT QUESTIONED THE EFFECTIVENESS OF A QA PROGRAM WHEN INSPECTORS ARE PLACED IN COMPROMISING POSITIONS IN WHICH FALSIFICATION OF RECORDS COULD OCCUR.	
SSER: 11 ALLEG: AQ-069 ITEM: 11.30A	THERE WAS A LACK OF JOB COORDINATION AS EVIDENCED BY SHODDY WORKMANSHIP, POOR SUPERVISION, WASTE OF MATERIALS, AND HUNDREDS OF DEFECTS THAT WERE NOT REPORTED. REF. PG. O-219.	TRT --- IN THE EVIDENCE PRESENTED, THE CONCERN THAT THERE WAS A LACK OF JOB COORDINATION WAS SUBSTANTIATED ONLY IN THE AREA OF CARELESS WORKMANSHIP. THE DETAILS FOUND BY TRT INDICATING CARELESS WORKMANSHIP WERE OUTLINED IN THE RESULTS REPORTED IN QA/QC CATEGORY 8. TRT CONCLUDED THAT TU ELECTRIC HAD ADEQUATE MEASURES TO ASSURE GOOD SITE COORDINATION.	CPRT ---- CPRT RESOLUTION OF CONCERNS REGARDING WORKMANSHIP IS SUMMARIZED UNDER ITEM 11.84D.
SSER: 11 ALLEG: AQ-113 ITEM: 11.31	TEXAS UTILITIES ELEC. CO. (TUEC) MANAGEMENT LACKED COMMITMENT TO AN ADEQUATE QUALITY ASSURANCE AND CONTROL PROGRAM IN THE UNTIMELY REPORTING OF TRANSFORMER FAILURES TO NRC. REF. PG. O-223.	TRT --- BASED ON THE ASSESSMENT OF TU ELECTRIC'S UNTIMELY REPORTING UNDER 10 CPR50.55(e) OF THE FERRORESONANT TRANSFORMER FAILURES, TRT CONCLUDED THAT THE ALLEGATION WAS SUBSTANTIATED AND THAT THIS VIOLATION COULD INDICATE A LACK OF MANAGEMENT COMMITMENT TO AN EFFECTIVE QA/QC PROGRAM. IT APPEARED THAT THIS PARTICULAR VIOLATION WAS CAUSED BY INEFFECTIVE PROCEDURAL IMPLEMENTATION. THIS EXAMPLE OF INEFFECTIVE 10 CFR 50.55(E) REPORTING, WHICH WAS NOT AN ISOLATED OCCURRENCE, HAS POTENTIAL GENERIC IMPLICATIONS, AS NOTED IN QA/QC CATEGORY 2, ALLEGATION AQ-102. TU ELECTRIC PROCEDURES FOR REPORTING SIGNIFICANT CONSTRUCTION DEFICIENCIES LACKED SPECIFICITY. NRC PREPARED NOTICE OF VIOLATION 445/84-22-V-02 FOR THIS FAILURE TO REPORT AS REQUIRED AND CLOSED IT ON MARCH 6, 1986 BY INSPECTION REPORT (IR) 445/85-14; 446/85-11 (IR) 445/85-14; 446/85-11.	CPRT ---- CPRT RESOLUTION OF CONCERNS REGARDING THE 10 CFR 50.55(e) REPORTABILITY SYSTEM IS SUMMARIZED UNDER ITEM 11.06.
SSER: 11 ALLEG: AQ-132	TEXAS UTILITIES ELECTRIC COMPANY'S (TUEC'S) QUALITY	TRT ---	CPRT ----

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
ITEM: 11.33	ASSURANCE AUDITS AND AUDITORS WERE NOT INDEPENDENT OF THE AREA BEING AUDITED, AND AUDIT REPORTS WERE CHANGED TO REFLECT WHAT MANAGEMENT WANTED THEM TO STATE. REF. PG. 0-233.	TRT SUBSTANTIATED THE ALLEGATION TO THE EXTENT THAT A QA SUPERVISOR HAD REWRITTEN TU ELECTRIC AUDIT REPORT TCP-66. HOWEVER, AFTER AN IN-DEPTH REVIEW OF THE REPORT, TRT CONCLUDED THAT THE BASIS FOR THE REWRITE WAS APPROPRIATE. TRT FOUND A WEAKNESS IN THE QUALIFICATIONS OF TU ELECTRIC AUDIT PERSONNEL IN THAT THEY HAD ONLY MINIMAL TECHNICAL EDUCATION AND EXPERIENCE. BASED ON INTERVIEWS WITH TU ELECTRIC QA MANAGEMENT AND REVIEWS OF QA AUDIT REPORTS, TRT CONCLUDED THAT NO INDEPENDENT MANAGEMENT AUDITS OF THE TU ELECTRIC QA PROGRAM AT CPSES HAD BEEN CONDUCTED.	CPRT, UNDER ISAP VII.A.4, CONCLUDED THAT THE AUDIT PERSONNEL QUALIFICATION PROGRAM ADEQUATELY REFLECTED THE REQUIREMENTS OF THE APPROPRIATE GOVERNING STANDARDS AND REGULATORY GUIDANCE AND, THEREFORE, RESULTED IN NO ADVERSE EFFECT ON THE AUDIT PROGRAM. (ISAP VII.A.4 RESULTS REPORT, PG 38). SINCE THE FORMATION OF A DESIGNATED AUDIT STAFF IN 1979, IT HAD BEEN THE PRACTICE OF TU ELECTRIC TO SUPPLEMENT THE STAFF AS NEEDED WITH OTHER QUALIFIED MEMBERS OF THE QA ORGANIZATION TO FUNCTION AS AUDITORS AND LEAD AUDITORS. CPRT, THEREFORE, CONCLUDED THAT BASED ON THE EVALUATION OF THE YEARS 1981 THROUGH 1983, THE FORMALLY DESIGNATED AUDIT STAFF COULD BE CONSIDERED DEFICIENT IN NUMBERS AND TECHNICAL QUALIFICATIONS, BUT THAT THE EFFECTIVE AUDIT STAFF OF QUALITY ASSURANCE PERSONNEL WAS ADEQUATE IN BOTH NUMBERS AND QUALIFICATIONS.(ISAP VII.A.4 RESULTS REPORT, PG 19). BASED ON THE REVIEWS PERFORMED, CPRT CONCLUDED THAT INDIVIDUALS DID NOT AUDIT ACTIVITIES THAT THEY WERE RESPONSIBLE FOR PERFORMING, AND THAT AUDIT STAFFING WAS ADEQUATE TO IMPLEMENT THE AUDIT PROGRAM AND SCHEDULES DURING THE PERIODS OF INTEREST. (ISAP VII.A.4 RESULTS REPORT PG 19). CPRT, UNDER ISAP VII.A.5, DETERMINED THAT WITH THE ISSUE OF THE TU ELECTRIC CORPORATE NUCLEAR POLICY IN AUGUST 1985, THE SUBSEQUENT DEVELOPMENT OF THE NUCLEAR ENGINEERING AND OPERATIONS (NEO) POLICIES AND PROCEDURES MANUAL TABLE OF CONTENTS, AND THE SUBSEQUENT DEVELOPMENT OF INDIVIDUAL POLICIES AND PROCEDURES, TU ELECTRIC MANAGEMENT HAS TAKEN POSITIVE STEPS TO DEFINE AN EFFECTIVE SYSTEM TO PROVIDE THE NECESSARY CONTROLS AND GUIDANCE TO ENSURE THE ADEQUATE AND EFFECTIVE IMPLEMENTATION AND REVIEW OF THE QA PROGRAM. CPRT FURTHER CONCLUDED THAT, BASED ON DISCUSSIONS WITH THE EXECUTIVE VICE PRESIDENT, NEO, AND HIS VICE PRESIDENTS AND REVIEW OF COMMITTEE ACTIVITIES, CURRENT MANAGEMENT AT THIS LEVEL UNDERSTANDS THE IMPORTANCE OF AN EFFECTIVE QA PROGRAM AND ALSO THE NEED FOR REGULAR REVIEW OF THE PROGRAM TO MEASURE ITS ADEQUACY AND EFFECTIVENESS. (ISAP VII.A.5 RESULTS REPORT, PG 2 AND 10). THE CPRT RESULTS RESOLVE THIS ISSUE. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
SSER: 11 ALLEG: AQ-133 ITEM: 11.34	MANAGEMENT OF TUEC'S PERSONNEL EXIT INTERVIEW PROGRAM WAS INADEQUATE AND THE PROGRAM WAS NOT EFFECTIVE. REF. PG. 0-237.	TRT --- TU ELECTRIC INITIATED AN EXIT INTERVIEW PROGRAM IN OCTOBER 1983. IN APRIL 1984, TU ELECTRIC ALSO	CPRT ---- CPRT, UNDER ISAP VII.A.6, CONCLUDED THAT THE EXIT INTERVIEW PROGRAM IN EFFECT BETWEEN DECEMBER 1983 AND MAY 1985 MET THE

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		INITIATED A QUALITY AWARENESS PROGRAM THAT INCLUDED A HOTLINE FOR EMPLOYEES TO CALL IN QUALITY MATTERS. TRT SUBSTANTIATED THE CONCERN REGARDING THE ADEQUACY AND EFFECTIVENESS OF THE EXIT INTERVIEW PROGRAM. THE EXIT INTERVIEW QUESTIONNAIRE AND FOLLOWUP DID NOT APPEAR TO MEET PROGRAM OBJECTIVES.	INTENT OF ITEM SEVEN OF TU ELECTRIC's RESPONSE TO THE NRC NOTICE OF VIOLATION IN THAT THE PROGRAM AFFORDED QA/QC EMPLOYEES THE OPPORTUNITY TO STATE CONCERNS REGARDING QUALITY PRIOR TO DISASSOCIATION FROM THE QA/QC DEPARTMENT AND PROVIDED A MECHANISM FOR EVALUATING AND DISPOSITIONING SUCH CONCERNS. HOWEVER, THE PROGRAM DID NOT FULLY MEET THE CRITERIA OF TU ELECTRIC's COMMITMENTS MADE IN RESPONSE TO THE NRC ENFORCEMENT ACTION AND AVAILABLE INDUSTRY PRACTICES. THE EXIT INTERVIEW PROGRAM HAS BEEN REPLACED WITH THE SAFETEAM PROGRAM. THE SAFETEAM PROGRAM AND ITS IMPLEMENTATION REPRESENTED A SIGNIFICANT IMPROVEMENT OVER THE PREVIOUS EXIT INTERVIEW PROGRAM. THE PROGRAM EFFECTIVELY ENCOURAGES EMPLOYEES TO VOICE CONCERNS AND PROVIDES ADEQUATE MEANS TO DO SO. RESOLUTION OF EMPLOYEES'CONCERNS APPEARED SATISFACTORY; HOWEVER, RELATED ISSUES, WHICH AROSE DURING INVESTIGATIONS AND MIGHT HAVE HAD QUALITY IMPLICATIONS, WERE NOT IN ALL CASES ADDRESSED. WITH THE ASSIGNMENT OF THESE RELATED ISSUES AS A RESPONSIBILITY OF THE QA MEMBER OF THE STEERING COMMITTEE OF THE SAFETEAM PROGRAM, EFFECTIVE RESPONSES TO ALL QA RAMIFICATIONS OF EMPLOYEE CONCERNS CAN BE ACHIEVED. (ISAP VII.A.6 RESULTS REPORT, PG 36). THE CPRT RESULTS RESOLVE THIS ISSUE.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36A-4	DEFICIENCIES SUCH AS LOOSE BOLTS OR BAD WELDS WERE NOT REPORTED. REF. PG. 0-245.	TRT --- IDENTIFYING THESE TYPES OF DEFICIENCIES WAS NOT THE PRINCIPAL PURPOSE OF THE NRC OFFICE OF INSPECTION AND ENFORCEMENT BULLETIN (IEB) 79-14 PROGRAM. HOWEVER, THESE TYPES OF DEFICIENCIES, WHEN DETECTED, SHOULD HAVE BEEN REPORTED TO THE INSTALLATION QC INSPECTOR. WHEN THE QC INSPECTOR WAS NOTIFIED OF ANY DEFICIENCIES, NONCONFORMANCE REPORTS SHOULD HAVE BEEN PROCESSED BY THE QC INSPECTOR AS APPROPRIATE. NO SPECIFIC DETAILS WERE PROVIDED BY THE ALLEGER. HOWEVER, AN INDEPENDENT INSPECTION BY TRT, USING QC INSTALLATION INSPECTION CRITERIA, IS DISCUSSED IN SECTION 4.B OF THE TRT ASSESSMENT OF AQ-50.	CPRT ---- FOR CPRT RESPONSES TO ITEMS DISCUSSED IN SECTION 4.B OF THE TRT ASSESSMENT, SEE ITEM NUMBERS 11.36B-1 THRU 11.36B-6, AQ-050.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36B-1	IN THE COURSE OF INSPECTING 42 PIPE SUPPORTS, TRT FOUND POTENTIALLY GENERIC	TRT --- STRUT AND SNUBBER LOAD PIN SPHERICAL BEARING CLEARANCE	CPRT ---- UNDER ISAP VII.B.3, CPRT REINSPECTED THE PIPE SUPPORTS INSPECTED

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	DEFICIENCIES. REF. PG 0-253.	WITH WASHERS WAS EXCESSIVE. BROWN & ROOT PROCEDURE QI-QAP-11.1-28, SEC. 3.7.3.1, REV. 25 DEFINED BEARING GAP AS THE SPACE BETWEEN THE OUTSIDE SURFACE OF THE BEARING RACE AND THE INSIDE SURFACE OF THE CLEVIS BRACKET AND SPECIFIED THAT THE SPACE MAY NOT BE MORE THAN ONE THICKNESS OF THE VENDOR-SUPPLIED SPACER WASHER TO PREVENT BEARINGS FROM DISLODGING FROM THEIR SEATS. BEARING DISLODGEMENT COULD CAUSE SNUBBER OR STRUT MISALIGNMENT AND CHANGE ITS MOMENT RANGE, OR ANGLE OF LOADING, THUS DEGRADING THE SNUBBER'S OR STRUT'S LOADING CAPACITY.	BY TRT TO VERIFY THE VALIDITY OF TRT RESULTS. TRT RESULTS WERE CONFIRMED. THE DEVIATIONS NOTED FOR SPHERICAL BEARING CLEARANCE WERE DETERMINED NOT TO BE SAFETY SIGNIFICANT. HOWEVER, IT WAS NOTED THAT INSTALLATION OF VENDOR SPECIFIED WASHERS WAS NOT SUFFICIENT TO PREVENT PARTIAL DISLODGEMENT OF THE SPHERICAL BEARINGS. MISSING WASHERS COULD LEAD TO TOTAL DISLODGEMENT IN SOME DESIGNS. A RECOMMENDATION WAS MADE TO REINSPECT ASME CODE CLASS 1, 2, AND 3 SNUBBERS AND STRUTS. (ISAP VII.B.3 RESULTS REPORT, PG 13, 14, AND 41). UNDER ISAP VII.C, CPRT REINSPECTED A RANDOM SAMPLE OF PIPE SUPPORT SNUBBERS AND SWAY STRUTS FOR VENDOR SUPPLIED COMPONENTS INCLUDING BEARING SPACERS. THE DEVIATIONS NOTED FOR SPHERICAL BEARING CLEARANCE WERE DETERMINED NOT TO BE SAFETY SIGNIFICANT. (ISAP VII.C RESULTS REPORT, APPENDIX 25, PG 23, 24, AND 49; APPENDIX 26, PG 22 AND 23; AND APPENDIX 27, PG 18). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36B-2	IN THE COURSE OF INSPECTING 42 PIPE SUPPORTS, THE TRT FOUND POTENTIALLY GENERIC DEFICIENCIES. REF. PG 0-253.	TRT --- STRUT AND SNUBBER LOAD PIN LOCKING DEVICES (COTTER PINS OR SNAP-LOCK RINGS) WERE MISSING. QI-QAP-11.1-28 DID NOT ADDRESS LOAD PIN LOCKING DEVICES. THIS PROCEDURE APPEARED TO BE INADEQUATE.	CPRT ---- UNDER ISAP VII.B.3, CPRT REINSPECTED THE PIPE SUPPORTS INSPECTED BY TRT TO VERIFY THE VALIDITY OF TRT RESULTS. TRT RESULTS WERE CONFIRMED. ONE FINDING WAS IDENTIFIED FOR A MISSING COTTER PIN. THE FINDING WAS COMPARABLE TO A FINDING IDENTIFIED FOR BROKEN COTTER KEYS IN THE LARGE-BORE PIPE SUPPORT POPULATION OF ISAP VII.C. THE RECOMMENDED CORRECTIVE ACTION INCLUDED REINSPECTION OF PIPE SUPPORTS FOR BROKEN, MISSING AND UNDERSIZED COTTER PINS AND SNAP RINGS. (ISAP VII.B.3 RESULTS REPORT, PG 16, 29,AND 38-40). UNDER ISAP VII.C, CPRT REINSPECTED A RANDOM SAMPLE OF PIPE SUPPORTS FOR FASTENERS. FINDINGS RELATED TO IMPROPER FASTENERS WERE IDENTIFIED IN EACH POPULATION. RECOMMENDED CORRECTIVE ACTION INCLUDED REINSPECTION TO ESTABLISH THAT PIPE CLAMPS WERE SECURELY ATTACHED TO PIPES AND FASTENERS WERE IN PLACE. (ISAP VII.C RESULTS REPORT, APPENDIX 25, PG 27, 28, 29, 47, AND 49; APPENDIX 26, PG 26, 27, 40, 41, AND 44; AND APPENDIX 27, PG 20, 21, 31-33, AND 35). INSPECTION REQUIREMENTS FOR LOCKING DEVICES WERE INCLUDED IN PROCEDURE QI-QAP-11.1-28 AND THE CHECKLIST IN 1984. (ISAP VII.C RESULTS REPORT,APPENDIX 25, PG 40).

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			THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36B-3	IN THE COURSE OF INSPECTING 42 PIPE SUPPORTS, THE TRT FOUND POTENTIALLY GENERIC DEFICIENCIES. REF. PG 0-253.	TRT --- PIPE CLAMP HALVES ON THE LOAD SIDE WERE NOT PARALLEL.	CPRT ---- UNDER ISAP VII.B.3, CPRT REINSPECTED THE PIPE SUPPORTS INSPECTED BY TRT TO VERIFY THE VALIDITY OF THEIR RESULTS. TRT RESULTS WERE CONFIRMED. THE DEVIATIONS NOTED FOR PIPE CLAMP HALVES NOT PARALLEL WERE DETERMINED TO BE NOT SAFETY SIGNIFICANT. A SIMILAR DEVIATION IDENTIFIED IN THE LARGE-BORE PIPE SUPPORT-RIGID POPULATION OF ISAP VII.C WAS DETERMINED TO BE A FINDING. DESIGN CONCERNS RELATED TO THE ADEQUACY OF PIPE CLAMP LOAD PINS WILL BE ADDRESSED BY THE PROJECT. (ISAP VII.B.3 RESULTS REPORT, PG 16, 17, AND 28-31). UNDER ISAP VII.C, CPRT REINSPECTED PIPE SUPPORTS FOR INSTALLATION OF PROPER SPACERS. THE FINDING DISCUSSED ABOVE WAS IDENTIFIED FOR INCORRECT INSTALLATION OF A PIPE CLAMP SPACER. RECOMMENDED CORRECTIVE ACTION INCLUDED REINSPECTION OF PIPE SUPPORTS HAVING PIPE CLAMPS FOR PROPER SPACERS. (ISAP VII.C RESULTS REPORT, APPENDIX 25, PG 21, 22, 42-44, AND 49; APPENDIX 26, PG 23 AND 24; AND APPENDIX 27, PG 16 AND 17).
			THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36B-4	IN THE COURSE OF INSPECTING 42 PIPE SUPPORTS, TRT FOUND POTENTIALLY GENERIC DEFICIENCIES. REF. PG 0-253.	TRT --- THREAD ENGAGEMENT OF BOLTS INTO TAPPED HOLES OF SNUBBER ADAPTER PLATE WAS LESS THAN FULL.	CPRT ---- UNDER ISAP VII.B.3, CPRT REINSPECTED THE PIPE SUPPORTS INSPECTED BY TRT TO VERIFY VALIDITY OF TRT RESULTS. TRT RESULTS WERE CONFIRMED IN THAT THE CPRT REINSPECTION IDENTIFIED LESS THAN FULL THREAD ENGAGEMENT IN THE SNUBBER ADAPTER PLATE. HOWEVER, THE MINIMUM THREAD ENGAGEMENT SPECIFIED BY BROWN & ROOT (B&R) PROCEDURES WAS MET. TRT CONCERNS WERE THAT MINIMUM BOLT ENGAGEMENT LENGTHS SHOULD BE EQUAL TO THE SNUBBER ADAPTER PLATE THICKNESS AND THAT THE MINIMUM BOLT ENGAGEMENT ALLOWED BY THE B&R PROCEDURES WAS INADEQUATE. CPRT INSPECTION RESULTS REPORTED BOLTS WITH THREAD ENGAGEMENT LESS THAN THE THICKNESS OF THE PLATE; HOWEVER, NO DEVIATIONS FROM THE MINIMUM ENGAGEMENT LENGTHS USED BY B&R WERE IDENTIFIED. DESIGN CONCERNS RELATIVE TO SNUBBER ADAPTER PLATE BOLTING HAVE BEEN TRANSMITTED TO THE PROJECT. THE ADEQUACY OF THIS CONDITION WILL BE EVALUATED BY THE PROJECT. (ISAP VII.B.3 RESULTS REPORT PG. 15 AND 31).

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			THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36B-5	IN THE COURSE OF INSPECTING 42 PIPE SUPPORTS, TRT FOUND POTENTIALLY GENERIC DEFICIENCIES. REF. PG 0-253.	TRT --- HILTI KWIK BOLTS (CONCRETE EXPANSION ANCHORS) AS INSTALLED DID NOT MEET MINIMUM EFFECTIVE EMBEDMENT CRITERIA.	CPRT ---- CPRT, UNDER ISAP VII.B 4, REVIEWED THE IN-PLACE CONDITION OF APPROXIMATELY 3,000 HILTI BOLTS OF VARYING DIAMETER. HILTI BOLTS WERE REINSPECTED TO VERIFY THAT THE EMBEDMENT OF THE BOLTS MET THE MINIMUM REQUIRED. THERE WERE 15 EMBEDMENT DEVIATIONS IDENTIFIED DURING THE REINSPECTIONS. THE DEVIATIONS RANGED FROM 1/32 INCH TO 3/4 INCH LESS THAN THE REQUIRED MINIMUM EMBEDMENT. EVALUATION OF ALL THESE DEVIATIONS DETERMINED THAT EVEN WITH THESE REDUCED EMBEDMENTS, THE RESULTING INSTALLED CAPACITY OF EACH BOLT STILL MAINTAINED A DESIGN FACTOR OF SAFETY AGAINST ULTIMATE TENSILE FAILURE OF 4.0. SHOULD SIMILAR DEVIATIONS OCCUR IN THE UNINSPECTED PORTION OF THE HILTI BOLT POPULATION, IT IS CONCEIVABLE THAT THE FACTOR OF SAFETY AGAINST ULTIMATE TENSILE FAILURE OF SOME OF THESE BOLTS COULD DROP BELOW THE DESIGN FACTOR OF SAFETY. HOWEVER, THE ABILITY OF THE BOLT TO SUSTAIN THE DESIGN LOAD WOULD NOT CHANGE; THAT IS, IT WOULD STILL BE ABLE TO PERFORM ITS FUNCTION. THE DIFFERENCE WOULD BE THAT A BOLT WITH LESS THAN THE REQUIRED EMBEDMENT WOULD BE ABLE TO ACHIEVE AN ULTIMATE TENSILE CAPACITY SOMEWHAT LESS THAN THE CAPACITY IT WOULD HAVE ACHIEVED WITH THE REQUIRED EMBEDMENT. REVIEW OF THE MANUFACTURER's TEST DATA INDICATED THAT THE AMOUNT OF LOAD TO CAUSE INITIAL SLIP IN THE ANCHOR DECREASES, BUT NOT SIGNIFICANTLY WHEN THE EMBEDMENT DEPTH IS DECREASED IN THE RANGE OF MAGNITUDE OF THE IDENTIFIED DEVIATIONS. ADDITIONALLY, THE ULTIMATE VALUES USED IN THE DESIGN CRITERIA ARE BASED ON A CONCRETE STRENGTH AT 28 DAYS OF 4000 PSI. THE TEST RESULTS REVIEWED IN ISAP II.B INDICATED, HOWEVER, THAT THE CONCRETE STRENGTH AT 28 DAYS AT CPSES IS TYPICALLY MUCH HIGHER. THIS INCREASE WOULD ADD ADDITIONAL CONSERVATISM IN THE DESIGN OF HILTI BOLTS. THE TREND EVALUATION CONCLUDED THAT, IN THE LIMITING CASE WHERE THE ACTUAL EMBEDMENT WAS 25 PERCENT LESS THAN REQUIRED, THE BOLT's ABILITY TO CARRY THE FULL ALLOWABLE LOAD WOULD LIKELY BE UNCHANGED, AND SUCH A DEVIATION WOULD NOT BE SAFETY-SIGNIFICANT. THEREFORE, NO ADVERSE TREND WAS IDENTIFIED. (ISAP VII.B.4 RESULTS REPORT PG 12 AND 13).

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			THE ISAP VII.B.4 RESULTS REPORT ADDRESSES HILTI BOLT EMBEDMENT LENGTHS FOR ALL POPULATIONS OF ISAP VII.C. HILTI BOLT EMBEDMENT LENGTHS FOR CABLE TRAY SUPPORTS ARE ADDRESSED UNDER THE CABLE TRAY DESIGN ADEQUACY VERIFICATION PROGRAM. THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36B-6	IN THE COURSE OF INSPECTING 42 PIPE SUPPORTS, TRT FOUND POTENTIALLY GENERIC DEFICIENCIES. REF. PG 0-253.	TRT --- LOCKING DEVICES FOR THREADED FASTENERS WERE MISSING OR OF A NON-APPROVED TYPE.	CPRT ---- UNDER ISAP VII.B.3, CPRT REINSPECTED THE PIPE SUPPORTS INSPECTED BY TRT TO VERIFY THE VALIDITY OF TRT RESULTS. TRT RESULTS WERE CONFIRMED. DEVIATIONS FOR NO LOCKING DEVICES AND BROKEN AND MISSING LOCKWASHERS ON THREADED FASTENERS WERE DETERMINED TO BE FINDINGS. THESE FINDINGS WERE SIMILAR TO FINDINGS IDENTIFIED IN THE PIPE SUPPORT POPULATIONS REINSPECTED UNDER ISAP VII.C. RECOMMENDED CORRECTIVE ACTION INCLUDED REINSPECTION OF PIPE SUPPORT BOLTS AND STUDS, OTHER THAN HIGH STRENGTH BOLTS USED IN HIGH STRENGTH BOLT APPLICATIONS, FOR PROPER INSTALLATION OF APPROVED LOCKING DEVICES. (ISAP VII.B.3 RESULTS REPORT, PG 9, 31, 32, 34, 35, 38, AND 39). UNDER ISAP VII.C, CPRT REINSPECTED PIPE SUPPORTS FOR LOCKING DEVICES ON THREADED FASTENERS. FINDINGS RELATED TO MISSING OR IMPROPER LOCKING DEVICES WERE IDENTIFIED IN EACH POPULATION. RECOMMENDED CORRECTIVE ACTION INCLUDED INSTALLATION OF SUITABLE LOCKING DEVICES ON VENDOR SUPPLIED COMPONENTS THAT COULD NOT BE IDENTIFIED AS HAVING HIGH-STRENGTH BOLTING. HIGH STRENGTH BOLTING HAS TO BE TORQUED TO AN ACCEPTABLE PRELOAD TO BE EXEMPT FROM THE LOCKING DEVICE REQUIREMENT. (ISAP VII.C RESULTS REPORT, APPENDIX 25, PG 15, 39-42, AND 48; APPENDIX 26, PG 14, 35-38, AND 43; AND APPENDIX 27, PG 11-12, 28-31, AND 34-35). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36B-7	AS-BUILT VERIFICATION EFFORT CONDUCTED BY TRT OF ELECTRICAL RACEWAY SUPPORTS PROVIDES EVIDENCE OF FAULTY CONSTRUCTION BY CRAFT, INSTALLED HARDWARE THAT DOES NOT MATCH AS-BUILT DRAWINGS, AND INEFFECTIVE QA	TRT --- TRT INSPECTED SEVEN CLASS IE CABLE TRAY AND CONDUIT SUPPORTS IN THE CABLE SPREADING ROOM, AUXILIARY BUILDING, AND CONTAINMENT BUILDING. THESE SUPPORTS HAD BEEN INSPECTED AND ACCEPTED BY QC. A HIGH PERCENTAGE OF INSPECTABLE CHARACTERISTICS FAILED ON TRT	CPRT ---- CPRT, UNDER ISAP VII.C, PERFORMED A REINSPECTION AND DOCUMENTATION REVIEW OF 155 CONDUIT SUPPORTS. SIXTY-FIVE DEVIATION REPORTS WERE ISSUED DESCRIBING 102 DEVIATIONS IN APPROXIMATELY 19,000 INSPECTION POINTS ENCOUNTERED IN PERFORMING THE REINSPECTIONS. ONE HUNDRED AND NINETY DEVIATION REPORTS WERE ISSUED DESCRIBING 242

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	AND QC INSPECTIONS. REF. PG 0-256	INSPECTION. PROBLEM AREAS INCLUDED UNDERSIZED WELDS, MISLOCATED WELDS, EXCESSIVELY SKEWED ANCHOR BOLTS, MINIMUM BOLT HOLE TO EDGE DISTANCE VIOLATIONS, UNMARKED HILTI BOLTS, UNDERSIZED NUTS, MISSING WASHERS, AND WRONG SIZE FRAME CLIPS. BASED ON THE INSPECTION, TRT CONCLUDED THAT THE BROWN & ROOT (B&R) INSPECTION OF THESE ELECTRICAL CABLE TRAY AND CONDUIT SUPPORTS WAS UNSATISFACTORY AND THAT OBJECTIVE EVIDENCE OF COMPLIANCE WITH SPECIFIED ENGINEERING AND CONSTRUCTION CRITERIA WAS NOT PROVIDED.	DEVIATIONS IN APPROXIMATELY 1,000 REVIEW POINTS ENCOUNTERED IN PERFORMING DOCUMENTATION REVIEWS. NO CONSTRUCTION DEFICIENCIES AND NO ADVERSE TRENDS WERE IDENTIFIED. BASED ON THE FINDINGS OF THE REINSPECTIONS AND DOCUMENTATION REVIEWS AND THE CONCLUSIONS STATED IN ISAP VII.C FOR WELDING AND ISAP VII.B.4 FOR HILTI BOLTS, THERE IS REASONABLE ASSURANCE THAT THE HARDWARE IN THE CONDUIT SUPPORT CONSTRUCTION WORK CATEGORY WAS ADEQUATELY INSTALLED TO PERFORM ITS SAFETY-INTENDED FUNCTION. (ISAP VII.C RESULTS REPORT, APPENDIX 32, PG 3 AND 21). ELECTRICAL CABLE TRAY SUPPORTS ARE ADDRESSED UNDER DSAP VIII, THE CABLE TRAY DESIGN ADEQUACY VERIFICATION PROGRAM. THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36B-8	TU ELECTRIC FAILED TO REPORT VIOLATION OF ASME CODE TO NRC. REF. PG. 0-259	TRT --- TRT's FINDINGS WITH REGARD TO TU ELECTRIC's OMISSION OF LOCKING DEVICES FOR ASME CODE NF SUPPORT THREADED FASTENERS WERE THAT QA/QC FAILED TO REPORT THE VIOLATION OF THE REQUIREMENTS OF ASME III, NF, SUBARTICLE 4725, BY A FORMAL NONCONFORMANCE REPORT (NCR). FURTHER, TU ELECTRIC FAILED TO REPORT THE ASME CODE VIOLATION TO NRC AND WAS, THEREFORE, IN NONCOMPLIANCE WITH THE REQUIREMENTS OF 10CFR50.55(e).	CPRT ---- CPRT RESOLUTION OF ISSUES REGARDING THE 10 CFR 50.55(e) REPORTABILITY SYSTEM IS SUMMARIZED UNDER ITEM 11.06.
SSER: 11 ALLEG: AQ-050 ITEM: 11.36C-1	POTENTIAL EXISTED FOR EXCESSIVE RADIAL WELD SHRINKAGE, ESPECIALLY FOR THIN-WALLED STAINLESS STEEL PIPE. REF. PG. 0-263.	TRT --- TRT MEASURED SHRINKAGE IN A WELD JOINT OF A 12 INCH DIAMETER SAFETY INJECTION LINE. THE SHRINKAGE EXCEEDED THE 3/16 INCH CRITERIA THAT WAS INCORPORATED BY DESIGN CHANGE AUTHORIZATION (DCA) 13,335 IN THE GIBBS & HILL PIPING ERECTION SPECIFICATION IN 1982. TRT ACKNOWLEDGED THAT THE QC INSPECTION CRITERIA FOR THE WELD JOINT INVOLVING RADIAL WELD SHRINKAGE WAS NOT VIOLATED AT THE TIME OF THE VISUAL TEST INSPECTION AND THAT THE ASME CODE PRIOR TO 1987 DID NOT SPECIFICALLY ADDRESS ACCEPTANCE CRITERIA FOR WELD SHRINKAGE. TRT REQUESTED THAT TU ELECTRIC ASSESS THE SAFETY SIGNIFICANCE OF WELD SHRINKAGE ESPECIALLY FOR THIN	CPRT ---- CPRT, UNDER ISAP VII.c, REINSPECTED A SAMPLE OF SAFETY-RELATED PIPE WELDS. ONE OF THE ATTRIBUTES USED IN THE INSPECTION WAS A DIMENSIONAL CHECK FOR RADIAL WELD SHRINKAGE USING THE SAME CRITERIA AS THAT CONTAINED IN DCA-13335. ONLY ONE DEVIATION WAS IDENTIFIED IN 256 INSPECTION POINTS INVOLVING APPROXIMATELY 90 BUTT WELDS. TWENTY-SIX OF THE BUTT WELDS WERE LOCATED ON SCHEDULE 80 OR THINNER STAINLESS STEEL PIPE WHICH IS SUSCEPTIBLE TO RADIAL WELD SHRINKAGE. THAT DEVIATION WAS EVALUATED AS INSIGNIFICANT. HOWEVER, BECAUSE RADIAL WELD SHRINKAGE CRITERIA WAS NOT INCORPORATED IN THE SPECIFICATION AND IN CONSTRUCTION AND INSPECTION PROCEDURES PRIOR TO 1982, CPRT RECOMMENDED THAT TU ELECTRIC REINSPECT, AND CORRECT AS NECESSARY, BUTT WELDS IN

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		WALLED STAINLESS STEEL PIPE.	SCHEDULE 80 AND THINNER STAINLESS STEEL PIPING THAT WERE REPLACED OR RECEIVED EXTENSIVE REPAIRS PRIOR TO DECEMBER 1982. CPRT ALSO RECOMMENDED THAT RADIAL WELD SHRINKAGE CRITERIA BE INCORPORATED IN APPLICABLE SPECIFICATIONS AND PROCEDURES. (ISAP VII.C RESULTS REPORT, APPENDIX 12, PG 7, 8, 9, 19-23, 25, AND 26). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: AQ-135 ITEM: 11.37A	PCVP FAILED TO ADEQUATELY PROCESS THE RESULTS OF QC INSPECTIONS AS REQUIRED BY 10CFR50, APPENDIX B. REF. PG 0-267	TRT --- TRT CONCLUDED THAT THE POST CONSTRUCTION VERIFICATION PROGRAM (PCVP) MET THE REQUIREMENTS OF IEEE-336. MOST ASPECTS OF THE ALLEGATION WERE NOT SUBSTANTIATED AND HAD NO GENERIC IMPLICATION. HOWEVER, THE ALLEGATION OF INADEQUATE REVIEW OF IDENTIFIED DEFICIENCIES LED TRT TO IDENTIFY A PROGRAMMATIC WEAKNESS INVOLVING THE LACK OF GUIDANCE ON THE LEVEL OF DEFICIENCY NEEDED TO INITIATE A NONCONFORMANCE REPORT (NCR). THIS FINDING HAS GENERIC IMPLICATIONS FOR TU ELECTRIC AND OTHER INSPECTION AND CORRECTIVE ACTION PROGRAMS IN THE DESIGN AND CONSTRUCTION OF CPSES. REVIEW OF THIS ALLEGATION ALSO LED TRT TO CONCLUDE THAT TU ELECTRIC'S PROGRAM FOR TRENDING NONCONFORMANCES WAS WEAK.	CPRT ---- CPRT, UNDER ISAP VII.A.2, DETERMINED THAT NCR PROCEDURES PROVIDED ADEQUATE DIRECTIONS ON PREPARING NCRs TO PERSONNEL PERFORMING INSPECTIONS. IN GENERAL, THE DIRECTION, ALSO DETAILED IN THE FSAR, WAS TO PREPARE AN NCR IF THE ITEM COULD NOT BE BROUGHT INTO CONFORMANCE (REWORKED) THROUGH NORMAL CONSTRUCTION PRACTICE OR IF THE ITEM HAD BEEN PREVIOUSLY ACCEPTED IN FINAL INSPECTION. (ISAP VII.A.2 RESULTS REPORT, PG 25 AND 27). CPRT, ALSO, EVALUATED THE CPSES TREND ANALYSIS PROGRAM AND DETERMINED THAT, WITH TIME, THE PROGRAM IMPROVED AND AT THE TIME OF THE EVALUATION WAS CONSIDERED TO BE COMPREHENSIVE. THE PROGRAM PROVIDED TU ELECTRIC MANAGEMENT WITH APPROPRIATE DATA CONCERNING ADVERSE TRENDS ON ALL CONSTRUCTION ACTIVITIES, INCLUDING STARTUP ACTIVITIES. UPDATED PROCEDURES PROVIDED INFORMATION ON THE INITIATION OF DISCREPANCY REPORTS. BOTH STARTUP AND CONSTRUCTION NOW USE THE SAME DISCREPANCY REPORTING SYSTEM. (ISAP VII.A.2 RESULTS REPORT, PG 45). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT. SEE ALSO ITEM 11.84F, QA INSPECTION, AND ITEM 11.84E, NONCONFORMANCES AND CORRECTIVE ACTIONS.
SSER: 11 ALLEG: AQ-135 ITEM: 11.37B	PCVP HAD INADEQUATE SCOPE AND DEPTH, INADEQUATE REVIEW OF IDENTIFIED DEFICIENCIES, AND INADEQUATE FOLLOWUP OF PROGRAM RESULTS. REF. PG. 0-267	SEE ITEM 11.37A, AQ-135.	
SSER: 11 ALLEG: AQ-008 ITEM: 11.41	THERE WAS AN INTENTIONAL COVERUP OF KNOWN DEFICIENCIES IN THE DOCUMENT CONTROL SYSTEM.	TRT REFERRED THIS ALLEGATION TO NRC OFFICE OF INVESTIGATIONS.	

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
	REF. PG. 0-21.		
SSER: 11 ALLEG: TRT-01 ITEM: 11.83A	DESIGN PROCESS ISSUES. REF PG 0-9	SEE ITEM 11.84A, TRT-P1.	
SSER: 11 ALLEG: TRT-02 ITEM: 11.83B	DOCUMENT CONTROL ISSUES. REF. PG 0-10	TRT --- OF THE THIRTY ALLEGATIONS AND CONCERNS PERTAINING TO DOCUMENT CONTROL, ELEVEN COULD NOT BE SUBSTANTIATED, THIRTEEN WERE SUBSTANTIATED, AND SIX WERE PARTIALLY SUBSTANTIATED. THOSE THAT WERE SUBSTANTIATED IN WHOLE OR PART RELATED TO PROCEDURAL DEVIATIONS OR ADMINISTRATIVE FLAWS IN THE DOCUMENT CONTROL FUNCTION, AS IT EXISTED AT THE TIME WHEN THE ALLEGATIONS ORIGINATED. TRT FOUND THAT PRIOR TO 1984, THERE WERE NUMEROUS RECURRING ADMINISTRATIVE AND PROCEDURAL DEVIATIONS IN THE DOCUMENT CONTROL FUNCTION. MANY OF THESE RECURRING DEFICIENCIES WERE IDENTIFIED BY INTERNAL AND EXTERNAL AUDITS. BUT THERE WAS LITTLE FOLLOW-UP OR VERIFICATION BY TU ELECTRIC MANAGEMENT THAT EFFECTIVE CORRECTIVE ACTIONS WERE TAKEN, UNTIL EARLY IN 1984 WHEN THE DOCUMENT CONTROL CENTER (DCC) MONITORING TEAM BEGAN REPORTING TO SENIOR MANAGEMENT. THE CURRENT DOCUMENT CONTROL PROGRAM, WITH AN ESTIMATED ERROR RATE OF ONE PERCENT OR LESS, WAS FOUND TO BE ADEQUATELY STAFFED AND EFFECTIVE. THE PROBLEM OF INCORRECT AND INCOMPLETE DRAWING PACKAGES APPEARED TO HAVE BEEN CORRECTED. TRT FOUND THAT TU ELECTRIC HAD NOT REPORTED THE IDENTIFIED DEFICIENCIES WITHIN THE DCC TO NRC AS REQUIRED BY 10 CFR 50.55(e). ONLY DEFICIENCIES IDENTIFIED BY ENGINEERING, CRAFT, AND TESTING DISCIPLINES WERE SUBMITTED TO NRC AS 10 CFR 50.55(e) ITEMS. (SEE ATTACHMENT 2, QA/QC CATEGORY 2.) ALTHOUGH IT WAS ASSUMED BY QC THAT PAST FINAL INSPECTIONS AND ACCEPTANCE OF COMPLETED WORK WERE PERFORMED USING THE LATEST ISSUE OF DESIGN DRAWINGS, THE POTENTIAL EXISTED FOR ISSUING INCOMPLETE DOCUMENT PACKAGES TO CRAFT PERSONNEL, THUS THE LATEST REVISION OF DOCUMENTS MIGHT NOT ALWAYS HAVE BEEN USED.	CPRT ---- CPRT EVALUATED THE IMPLICATIONS OF PAST DOCUMENT CONTROL INADEQUACIES ON INSTALLED AND TESTED HARDWARE UNDER ISAP VII.a.3. THE RESULTS OF THIS EVALUATION ARE SUMMARIZED BELOW. BASED ON ITS EVALUATION OF THE CURRENT AND HISTORICAL QA DOCUMENT CONTROL PROGRAM AT CPSES, CPRT CONCLUDED THE FOLLOWING: - CURRENT QA DOCUMENT CONTROL PROGRAMS WERE ADEQUATE UNDER 10CFR50, APPENDIX B, CRITERION VI. - HISTORICAL QA DOCUMENT CONTROL PROGRAMS, WITH THE EXCEPTION OF DOCUMENT CONTROL CENTER (DCC) OPERATIONS PRIOR TO MID-1984, WERE ADEQUATE. - PROBLEMS WITH THE OPERATION OF THE DCC THAT EXISTED PRIOR TO MID-1984 WERE CORRECTED BY THAT TIME. CPRT CONCLUDED THAT THERE WAS REASONABLE ASSURANCE THAT THERE WERE NO UNIDENTIFIED AND UNCORRECTED ADVERSE HARDWARE CONDITIONS RESULTING FROM PAST DOCUMENT CONTROL PROGRAM PROBLEMS. (CER, PART IV, PG 31 - 34). THE CPRT RESULTS RESOLVE THESE ISSUES. THE CPRT RESOLUTION OF CONCERNS REGARDING THE 10CFR50.55(e) REPORTABILITY SYSTEM IS SUMMARIZED UNDER ITEM 11 06.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		ACCORDINGLY, TRT PHYSICALLY COMPARED A SAMPLE OF INSTALLED HARDWARE TO THE AS-BUILT DOCUMENTATION IN THE PLANT PERMANENT RECORDS VAULT. THE RESULTS OF THIS COMPARISON AS PRESENTED IN CATEGORY 8 OF ATTACHMENT 2 (AQ-50) GIVES EXAMPLES OF WHERE THE HARDWARE CONSTRUCTION DID NOT MATCH THE DRAWINGS. IN SUMMARY, TRT FOUND THE CURRENT DOCUMENTATION CONTROL PROGRAM TO BE ACCEPTABLE. HOWEVER, PRIOR TO 1984, AS IDENTIFIED BY THE NRC CONSTRUCTION ASSESSMENT TEAM AND TU ELECTRIC, THERE WAS A DOCUMENT CONTROL BREAKDOWN. ALTHOUGH MANY OF THE DOCUMENT CONTROL DEFICIENCIES HAVE BEEN CORRECTED, THE IMPLICATION OF PAST INADEQUACIES ON CONSTRUCTION AND INSPECTION HAD POTENTIAL GENERIC SIGNIFICANCE WHICH HAD NOT BEEN FULLY ANALYZED BY TU ELECTRIC.	
SSER: 11 ALLEG: TRT-04 ITEM: 11.83D	TRAINING AND QUALIFICATION ISSUES. REF. PG 0-10	TRT --- OF EIGHT ALLEGATIONS IN THIS CATEGORY, THREE COULD NOT BE SUBSTANTIATED. FIVE ALLEGATIONS WERE SUBSTANTIATED, OR WERE OF SUFFICIENT SUBSTANCE TO CAUSE CONCERN. TRT FOUND NUMEROUS DEFICIENCIES IN THE SITE INSPECTOR QUALIFICATION AND CERTIFICATION PROGRAM, INCLUDING THE FOLLOWING: AN IDENTICAL CERTIFICATION TEST COULD BE TAKEN AFTER FAILING THE FIRST ONE, AND THERE WAS NO LIMIT ON HOW MANY TIMES AN EXAMINATION COULD BE RETAKEN; TWENTY PERCENT OF THE 102 TRAINING RECORDS REVIEWED CONTAINED NO VERIFICATION OF EDUCATION OR WORK EXPERIENCE; THERE WERE NO GUIDELINES PROVIDED FOR THE USE OF WAIVERS FOR ON-THE-JOB TRAINING, ALTHOUGH WAIVERS WERE FREQUENTLY USED; SEVEN INSPECTORS WERE IDENTIFIED AS HAVING QUESTIONABLE QUALIFICATIONS; AND WHITE-OUT WAS USED ON CERTIFICATION TESTS. THERE ALSO WERE NUMEROUS PROBLEMS IN THE NON-ASME (TU ELECTRIC) INSPECTOR CERTIFICATION TESTING, SUCH AS: NO REQUIREMENTS FOR ADDITIONAL TRAINING BETWEEN A FAILED TEST AND THE RETEST; NO TIME LIMITATION BETWEEN A FAILED TEST AND A RETEST; DIFFERENT SCORING METHODS TO GRADE THE ORIGINAL TEST AND THE RETEST; NO GUIDELINES ON HOW A TEST QUESTION SHOULD BE	CPRT ---- CPRT, UNDER ISAP I.D.2, DETERMINED THAT TU ELECTRIC HAD CORRECTED PROCEDURAL PROBLEMS AND HAD IMPLEMENTED SATISFACTORILY AN EFFECTIVE QC INSPECTOR CERTIFICATION PROGRAM THAT MET THE REQUIREMENTS OF REGULATORY GUIDE 1.58, REVISION 1, AND ANSI N45.2.6-1978 (ISAP I.D.2 RESULTS REPORT PG 28). CPRT REVIEWED REVISED PROCEDURES TO VERIFY COMPLIANCE WITH REGULATORY GUIDE 1.58 AND ANSI N45.2.6 AS COMMITTED TO BY THE CPSES FSAR AND TO DETERMINE IF THE REVISED PROCEDURES WERE ADEQUATE. THE REVISED PROCEDURES WERE MUCH MORE DEFINITIVE AND WERE JUDGED TO BE IN COMPLIANCE WITH FSAR REQUIREMENTS. ONLY ONE AREA OF POSSIBLE CONCERN REMAINED AS A RESULT OF THIS REVIEW. THE REVISED PROCEDURES ALLOWED SPECIFIC REQUIREMENTS, WITH THE EXCEPTION OF EDUCATION AND EXPERIENCE, TO BE REDUCED OR WAIVED. THIS CONCERN WAS DISCUSSED WITH TU ELECTRIC AND THEY ISSUED A REVISION TO THE APPROPRIATE PROCEDURE. THE REVISION CLARIFIED TU ELECTRIC's INTENT AND ADEQUATELY ADDRESSED THE CPRT CONCERN. IN ADDITION, CPRT CONDUCTED A VERIFICATION OF THE IMPLEMENTATION OF THE REVISED PROCEDURE. THE SCOPE OF THIS VERIFICATION INCLUDED THE REVIEW OF DOCUMENTATION FOR SEVENTEEN INSPECTORS AND INSPECTOR

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		DISQUALIFIED; NO PROGRAM FOR PERIODICALLY ESTABLISHING NEW TESTS, EXCEPT WHEN PROCEDURES CHANGED; AND NO DETAILS ON HOW THE ADMINISTRATION OF TESTS SHOULD BE MONITORED. TRT ALSO FOUND THAT THERE WERE FIVE CRAFT PERSONNEL WHO TRANSFERRED INTO QC INSPECTION WITH NO PRIOR BACKGROUND OR EXPERIENCE IN INSPECTION AND WITH QUESTIONABLE QUALIFICATIONS. THESE PROBLEMS AMOUNT TO A PATTERN OF ACTIVITIES INDICATING INADEQUATE CONTROLS TO ENSURE CORRECT APPLICATION OF A QC TRAINING AND QUALIFICATION PROGRAM, I.E., TO ASSURE THAT THE PROGRAM ACHIEVES, IMPLEMENTS, AND MAINTAINS REQUIREMENTS AS SET FORTH BY 10 CFR PART 50, APPENDIX B. ALTHOUGH ON PAPER THE ASME (BROWN & ROOT (B&R)) PERSONNEL TRAINING AND CERTIFICATION PROGRAM, AS ESTABLISHED BY TU ELECTRIC AND B&R PROCEDURES, MET THE REQUIREMENTS OF ANSI N45.2.6, AND REGULATORY GUIDE 1.58, IN PRACTICE THESE GUIDELINES WERE NOT FOLLOWED. INSTEAD, THE PROGRAM, IN PRACTICE, FOLLOWED THE "EXCEPTION TO THE RULE" AND USED "OTHER FACTORS" AS THE NORMAL METHOD OF QUALIFICATION. OF THE 102 INSPECTOR RECORDS SAMPLED, MORE THAN EIGHTY PERCENT OF THE INSPECTORS WERE QUALIFIED UNDER THE "EXCEPTION TO THE RULE" FACTOR. TRT NOTED THAT NOT ALL QC INSPECTORS HAD DOUBTFUL QUALIFICATIONS. FOR EXAMPLE, IN SOME SMALL GROUPS, SUCH AS THE DESIGN CHANGE VERIFICATION GROUP (DCVG), TRT FOUND ONLY ONE OF 19 INSPECTORS THAT HAD QUESTIONABLE QUALIFICATIONS. BUT, TRT ALSO NOTED THAT OVER EIGHTY PERCENT OF ALL SITE LINE QC INSPECTORS WERE QUALIFIED TO THE SECONDARY "EXCEPTION TO THE RULE" CLAUSE; AND THEN TO MAKE MATTERS MORE SERIOUS, THIS SECONDARY PROGRAM HAD MANY DEFICIENCIES AND EXCESSES (PREVIOUSLY NOTED) THAT FURTHER DEMEANED THE CREDIBILITY OF THE QUALIFICATIONS. TRT CONCLUDED THAT THE WEAK QC QUALIFICATION PROGRAM MIGHT HAVE RESULTED IN THE NON-DETECTION OF OR FAILURE TO REPORT THE HARDWARE DEFICIENCIES IDENTIFIED IN QA/QC CATEGORY 8, AQ-50, AND IN SSERs 7 THROUGH 10. TRT CONCLUDED THAT THE WIDESPREAD DEFICIENCIES AND MINIMAL REQUIREMENTS IN THE QC INSPECTOR QUALIFICATION	CANDIDATES CERTIFIED BY TU ELECTRIC FROM AUGUST 19, 1985 UNTIL APRIL 16, 1986. ALTHOUGH SOME MINOR DOCUMENTATION ERRORS AND ONE CONCERN REGARDING ALTERNATE COLOR VISION TESTS WERE IDENTIFIED, THE OVERALL COMPLIANCE WAS SATISFACTORY AND PROVIDED ASSURANCE THAT INSPECTORS WERE CERTIFIED IN ACCORDANCE WITH FSAR COMMITMENTS. FURTHER DISCUSSION WITH TU ELECTRIC PERSONNEL RESOLVED THE CPRT CONCERN REGARDING ALTERNATE COLOR VISION TESTS. (ISAP I.D.2 RESULTS REPORT PG 16, 17 AND 18). CPRT, UNDER ISAP I.D.1, DETERMINED THAT THE TU ELECTRIC QC INSPECTOR CERTIFICATION PROGRAM, PARTICULARLY THE HISTORICAL ELECTRICAL QC CERTIFICATION PORTION, PRODUCED A NUMBER OF INSPECTORS WHO WERE CERTIFIED WITH QUESTIONABLE QUALIFICATIONS. THIS PROGRAM IMPROVED OVER TIME AS ILLUSTRATED BY THE FACT THAT INITIALLY, 93.9 PERCENT OF TU ELECTRIC HISTORICAL QC INSPECTORS WERE ACCEPTABLE COMPARED TO 99.4 PERCENT CURRENTLY. A TOTAL OF 587 INSPECTORS WHO WERE CERTIFIED BY TU ELECTRIC, BROWN & ROOT AND SUBCONTRACTORS WERE EVALUATED. THE QUALIFICATIONS OF 69 INSPECTORS REQUIRED FURTHER EVALUATION, INCLUDING REINSPECTION OF COMPLETED WORK, TO DETERMINE WHETHER, DESPITE DEVIATIONS FROM QUALIFICATION REQUIREMENTS, THEY WERE CAPABLE OF SATISFACTORILY CONDUCTING INSPECTIONS. FOUR INSPECTORS FAILED THIS LATER EVALUATION, THE WORK OF FIVE INSPECTORS INVOLVING NON-RECREATABLE CABLE PULLING INSPECTIONS WAS DECLARED AN UNCLASSIFIED TREND AND FOUR QA/QC PROGRAM DEFICIENCIES WERE IDENTIFIED. CORRECTIVE ACTION WAS RECOMMENDED BASED ON THE RESULTS OF A ROOT CAUSE AND GENERIC IMPLICATIONS ANALYSIS FOR EACH OF THE FINDINGS. CPRT CONCLUDED THAT THE PAST TU ELECTRIC QC INSPECTOR CERTIFICATION PROGRAM, DESPITE THE PROCEDURAL INADEQUACIES DESCRIBED IN THE ISAP I.D.2 RESULTS REPORT, WAS ADEQUATE IN THAT ITS APPLICATION CONSISTENTLY RESULTED IN THE CERTIFICATION OF A HIGH PERCENTAGE OF INSPECTORS CAPABLE OF CONDUCTING REQUIRED INSPECTIONS. (ISAP I.D.1 RESULTS REPORT PG 59 AND 76-81). THIS ISSUE WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.

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		PROGRAM HAD POTENTIAL QUALITY AND GENERIC IMPLICATIONS.	
SSER: 11 ALLEG: TRT-05A ITEM: 11.83E	REPAIR, REWORK AND MAINTENANCE ISSUES. REF. PG 0-11	TRT --- OF THIRTEEN ALLEGATIONS IN THIS CATEGORY, TEN WERE SUBSTANTIATED. TRT FOUND THAT WELDERS FOLLOWED SPECIFIC WRITTEN PROCEDURES THAT DEFINED THE CRITERIA FOR DETERMINING WHEN DEFECTS REQUIRED INPROCESS WELDING REPAIRS FOR EACH TYPE OF WELD FABRICATION. WELD REPAIRS WERE MADE IN ACCORDANCE WITH REPAIR PROCESS SHEETS, WHICH DEFINED OPERATIONAL STEPS FOR MAKING REPAIRS. TU ELECTRIC FIELD WELDS ON THE AUXILIARY FEEDWATER AND COMPONENT COOLING WATER SYSTEMS, ALTHOUGH NOT REQUIRED BY ASME CODE SECTION III, CLASS 3, WERE EXAMINED RADIOGRAPHICALLY. THE RADIOGRAPHS WERE NOT INTERPRETED PROMPTLY, WHICH RESULTED IN DELAYED REPAIRS OF IDENTIFIED DEFECTIVE WELDS. THERE WERE NO ASME ACCEPTANCE CRITERIA FOR PROMPTNESS FOR WELDS THAT THE ASME CODE DID NOT REQUIRE TO BE RADIOGRAPHED. THE IDENTIFIED DEFECTIVE WELDS WERE SUBSEQUENTLY REPAIRED, RERADIOGRAPHED, ACCEPTED, DOCUMENTED AND SIGNED OFF PRIOR TO HYDROSTATIC TESTING OF THESE SYSTEMS. TRT FOUND NO OTHER EXAMPLES OF EXTENSIVE DELAYS IN THE REPAIR OF ASME RADIOGRAPHED MATERIAL. ALTHOUGH ALLEGATIONS CONCERNING MISSED PERIODIC MAINTENANCE, AND CRAFT WORKERS "BOOTLEGGING" REWORK WERE SUBSTANTIATED, THESE OCCURRENCES WERE DOCUMENTED ON NONCONFORMANCE REPORTS (NCRs) OR PERMANENT EQUIPMENT TRANSFERS (PETs). AS ALLEGED, A DUPLICATION OF PAPERWORK ON FLANGE TRAVELERS DID OCCUR, BUT WAS IDENTIFIED BY TU ELECTRIC AND CORRECTED BY THE PAPER FLOW GROUP (PFG). TRT FOUND THAT THE VALVE DISC NUMBER ON THE TRAVELER DIFFERED FROM THAT ON THE DATA REPORT, BUT THIS MISMATCH OF NUMBERS WAS ONLY A NOMENCLATURE ERROR AND THE VALVE IN QUESTION HAD THE PROPER DISC INSTALLED. NO OTHER SPECIFIC EXAMPLES WERE FOUND. TRT FOUND THAT THE VALVE DISASSEMBLY AND REASSEMBLY PROCESS FOR INSTALLATION, MAINTENANCE AND TESTING	CPRT --- CPRT CONCLUSIONS REGARDING THE ISSUE OF VALVE DISASSEMBLY AND REASSEMBLY ARE SUMMARIZED IN ITEM 11.16A. CPRT CONCLUSIONS REGARDING GENERAL CONSTRUCTION PRACTICES ARE SUMMARIZED UNDER ITEM 11.84D, TRT-P4, CONSTRUCTION AND TESTING, AND PERFORMANCE OF THE CORRECTIVE ACTION SYSTEM ARE SUMMARIZED UNDER ITEM 11.84E, TRT-P5, NONCONFORMANCES AND CORRECTIVE ACTIONS.

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		RESULTED IN COMPONENTS BEING LOST, DAMAGED, OR INTERCHANGED. THE RECURRENCES DOCUMENTED IN NCRs AND PETs WERE INDICATIVE OF A PROBLEM WITH QUALITY IMPLICATIONS. HOWEVER, TRT COULD FIND NO EVIDENCE THAT CORRECTIVE ACTION WAS INITIATED TO DETERMINE THE ROOT CAUSE AND PREVENT RECURRENCE OF THE PROBLEM. TRT CONCLUDED THAT THE FAILURE OF THE CORRECTIVE ACTION SYSTEM TO ADEQUATELY ADDRESS THIS RECURRING PROBLEM HAD QUALITY AND GENERIC IMPLICATIONS BECAUSE GALLING OR EVEN VALVE FAILURE MIGHT OCCUR IF VALVE BONNETS AND BODIES OF DIFFERENT PRESSURE AND TEMPERATURE RATINGS WERE MIXED. IN SUMMARY, ALTHOUGH TEN ALLEGATIONS WERE CONFIRMED, THE ITEMS WERE IDENTIFIED AND CORRECTED BY TU ELECTRIC. THE MAJOR EXCEPTION WAS THE RECURRING PROBLEM WITH VALVE PARTS BEING LOST, DAMAGED, OR INTERCHANGED AND THE FAILURE TO DETERMINE ROOT CAUSE AND PREVENT RECURRENCE. AS STATED, THIS ITEM HAD QUALITY AND GENERIC IMPLICATIONS.	
SSER: 11 ALLEG: TRT-05B ITEM: 11.83F	ONSITE FABRICATION ISSUES. REF PG 6-13	TRT --- THREE ALLEGATIONS WERE ASSESSED; ONE ALLEGATION CONSISTING OF TWELVE ITEMS OF CONCERN, WAS PARTIALLY SUBSTANTIATED. TRT's ASSESSMENT SUBSTANTIATED THE EXISTENCE OF PROCEDURAL NONCOMPLIANCES THAT CREATED CONDITIONS POTENTIALLY ADVERSE TO QUALITY, AND THAT HAD GENERIC IMPLICATIONS. THE SUBSTANTIATED CONCERNS ARE IDENTIFIED AS FOLLOWS. TRT FOUND THAT THE IRON FABRICATION SHOP FABRICATED ITEMS BASED ON MATERIAL REQUISITIONS USING A MEMO OR A SKETCH INSTEAD OF THE HANGER PACKAGE, CONTROLLED DRAWING, OR TRAVELER, AS REQUIRED BY PROCEDURES, AND THAT FABRICATION SHOP FOREMEN WERE NOT FAMILIAR WITH THE FABRICATION PROCEDURES THAT CONTROLLED THE WORK PERFORMED UNDER THEIR SUPERVISION. ADDITIONALLY, FABRICATION PROCEDURES DID NOT IDENTIFY THE DESIGN SPECIFICATION REQUIREMENT OR A STANDARD FOR THREADS FABRICATED ON SITE. SITE QC SURVEILLANCES OF MISCELLANEOUS STEEL STORAGE AREAS WERE NOT PERFORMED.	CPRT ---- CPRT, UNDER ISAP VII.B.1, ADDRESSED AND RESOLVED ONSITE FABRICATION ISSUES. CPRT CONCLUSIONS ARE SUMMARIZED BELOW. THE IMPLEMENTATION OF ISAP VII.B.1 EVALUATED EACH OF THE TRT FINDINGS REGARDING PAST ONSITE FABRICATION SHOP ACTIVITIES AND THE NRC CONCLUSIONS THERETO. AN INDEPTH SURVEY AND EVALUATION OF PRESENT ACTIVITIES RELATIVE TO THE IDENTIFIED ISSUES/CONCERNS REVEALED NO DISCREPANCIES. ALTHOUGH INADEQUACIES RELATABLE TO TRT FINDINGS AND OTHER EXTERNAL SOURCE ISSUES WERE IDENTIFIED IN THE HISTORICAL PROCEDURES AND THE QC RECORDS EVALUATED, CPRT CONCLUDED THAT CURRENTLY IMPLEMENTED CONTROLS IN THE FABRICATION SHOP EFFECTIVELY ADDRESSED THOSE ISSUES AND CONCERNS. BECAUSE CPRT, UNDER VII.A.8, FUEL POOL LINER DOCUMENTATION, IDENTIFIED A LARGE NUMBER OF DOCUMENTATION DEVIATIONS RESULTING FROM FAILURE TO IMPLEMENT PROCEDURES AND THE LACK OF DEFINITIVE PROCEDURAL DIRECTION, ISAP VII.B.1 WAS EXPANDED TO EVALUATE ONSITE FABRICATION ACTIVITIES IN GENERAL, WHETHER PERFORMED IN THE FABRICATION SHOP OR OTHER PLANT AREAS. ALTHOUGH DEVIATIONS SIMILAR

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
		THERE WAS INADEQUATE CONTROL OF THE SCRAP/SALVAGE MATERIAL IN THE IRON FABRICATION SHOP LAYDOWN YARD IN THAT THE MATERIAL WAS NOT IDENTIFIED AS SCRAP NOR WAS THE AREA RESTRICTED TO ACCESS, AND UNIDENTIFIED MATERIAL, RETURNED FROM THE FIELD, WAS MINGLED WITH SAFETY AND NONSAFETY-RELATED MATERIAL. ALTHOUGH TRT DID NOT FIND ANY EXAMPLES OF THE LOSS OF MATERIAL TRACEABILITY, THE MATERIAL REQUISITIONS PREPARED IN THE IRON FABRICATION SHOP DID NOT COMPLY WITH THE APPLICABLE PROCEDURE BECAUSE THE INTENDED USE DESCRIPTIONS WERE VAGUE, AND IN MANY CASES THE CODE CLASS WAS NOT IDENTIFIED. TRT FOUND THAT THE SUBSTANTIATED CONCERNS CONSTITUTED NONCOMPLIANCES WITH SITE PROCEDURES; HOWEVER, TRT, IN ITS REVIEW, OBSERVATIONS AND WALKDOWNS, DID NOT FIND ANY EVIDENCE OF POOR WORKMANSHIP OR UNACCEPTABLE QUALITY OF THE FABRICATED ITEMS RELEASED TO CONSTRUCTION. TRT FOUND THAT THE NONCOMPLIANCES INDICATED A LACK OF PROCEDURAL AND MANAGERIAL CONTROL OF WORK FUNCTIONS IN THE IRON FABRICATION SHOP AND THE POTENTIAL FOR HARDWARE FABRICATION ERRORS PRESENTED A QUALITY CONCERN OF POSSIBLE GENERIC IMPLICATIONS.	TO THOSE IDENTIFIED BY ISAP VII.A.8 WERE IDENTIFIED IN THE SAMPLE PACKAGES THAT WERE EVALUATED, DETERMINATIONS WERE MADE THAT NONE OF THE DEVIATIONS RESULTED IN A SAFETY-SIGNIFICANT EFFECT ON THE HARDWARE REPRESENTED BY THESE DOCUMENTATION PACKAGES. THE FABRICATION SHOP WAS UNDER THE DIRECTION OF BROWN & ROOT. CONSTRUCTION AND INSPECTION ACTIVITIES IN THE FABRICATION SHOP AND OTHER PLANT AREAS WERE GOVERNED BY BROWN & ROOT AND TU ELECTRIC PROCEDURES WHICH EVOLVED OVER THE SEVEN YEAR TIME PERIOD ENCOMPASSED BY THIS REVIEW. THE REVIEW OF PROCEDURES, FORMS AND DOCUMENTATION PACKAGES INDICATED THAT THE CONSTRUCTION METHODOLOGY AND DETAILS WERE UNDERSTOOD. HOWEVER, THE APPLICABLE INSPECTION REQUIREMENTS WERE CONVEYED IN NUMEROUS PROCEDURES THAT PROVIDED OVERLAPPING AND DIFFERENTLY STATED REQUIREMENTS AND CRITERIA. THESE PROCEDURES WERE FREQUENTLY CHANGED, AND IMPLEMENTATION OF THE PROCEDURES WAS INADEQUATELY SUPERVISED. THE ABOVE FACTORS, COUPLED WITH A LACK OF DETAILED GUIDANCE WITHIN INDIVIDUAL PROCEDURES (RELATIVE TO DATA ENTRIES, CROSS-REFERENCES TO OTHER APPLICABLE PROCEDURES, ETC.), CONTRIBUTED TO INCONSISTENCIES AND GAPS IN THE DOCUMENTATION OF INSPECTION RESULTS. IN TURN, THE LACK OF APPROPRIATE SUPERVISORY OVERVIEW AND TIMELY QA MONITORING OF THE INSPECTION RECORDS RESULTED IN PLACEMENT OF UNSATISFACTORY QA DOCUMENTATION IN PERMANENT PLANT RECORDS. THIRTY-TWO DEVIATION REPORTS AND TWO QA/QC PROGRAM DEVIATION REPORTS WERE ISSUED TO DOCUMENT THE DEVIATIONS IDENTIFIED THROUGH IMPLEMENTATION OF ISAP VII.B.1. MOST OF THESE DEVIATIONS WERE IDENTIFIED IN THE HISTORICAL DOCUMENTATION PACKAGES. THESE DEVIATIONS CONFIRMED TRT FINDINGS CONCERNING PAST PROCEDURAL INADEQUACIES AND IMPLEMENTATION PROBLEMS RELATIVE TO MANAGEMENT AND INSPECTION CONTROLS OF ONSITE FABRICATION ACTIVITIES. THE DEVIATIONS DESCRIBED IN THESE REPORTS HAVE BEEN EVALUATED AND DETERMINED TO HAVE NO SAFETY-SIGNIFICANT HARDWARE EFFECT ON THE COMPONENT SUPPORT SYSTEMS. AS DESCRIBED ABOVE UNDER THE SUMMARY OF GENERAL DEVIATIONS, BROWN & ROOT AND TU ELECTRIC PROCEDURES HAVE BEEN ESTABLISHED FOR ENSURING THE ADEQUACY OF INSPECTION RECORDS IN COMPLETED DOCUMENTATION PACKAGES. EFFECTIVE IMPLEMENTATION OF THESE PROCEDURES WILL ASSURE THAT COMPLETE AND ACCEPTABLE DOCUMENTATION PACKAGES ARE MAINTAINED FOR SAFETY-RELATED COMPONENT SUPPORTS. (ISAP VII.B.1 RESULTS REPORT PG 40 AND 41).

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			BASED ON THE SUBSTANTIAL NUMBER OF DEVIATIONS IDENTIFIED, THE STATUS OF THE DOCUMENTATION IS INDICATIVE OF A DEVIATION FROM SPECIFICATION REQUIREMENTS. CPRT RECOMMENDED THAT THE ENGINEER PERFORM AN ANALYSIS TO CONFIRM THE ACCEPTABILITY OF THE SAFETY-RELATED COMPONENT SUPPORT INSTALLATIONS, WITH SPECIFIC EMPHASIS ON THE EFFECT OF INADEQUATE INSPECTION AND MATERIAL TRACEABILITY DOCUMENTATION. (ISAP VII.B.1 RESULTS REPORT PG 26). THE CPRT RESULTS RESOLVE THESE ISSUES. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
SSER: 11 ALLEG: TRT-05C ITEM: 11.83G	HOUSEKEEPING ISSUES. REF PG 0-13	TRT --- TWO ALLEGATIONS WERE INVESTIGATED BY TRT. THE ALLEGATION RELATING TO INADEQUATE CLEANLINESS CONTROLS DURING THE EARLY STAGES OF CONSTRUCTION (AQ-54) WAS SUBSTANTIATED. TU ELECTRIC's QA SURVEILLANCE INSPECTIONS REPORTED A SUBSTANTIAL NUMBER OF CLEANLINESS PROCEDURE VIOLATIONS, WHICH WERE SUBSEQUENTLY CORRECTED. THE OTHER ALLEGATION, CONCERNING A SUPERVISOR's INSTRUCTIONS TO DISREGARD SOME REACTOR VESSEL CLEANLINESS CONTROL REQUIREMENTS (AQ-65), COULD NOT BE SUBSTANTIATED. TRT ASSESSED THE CURRENT HOUSEKEEPING SYSTEM OF CLEANLINESS AND EQUIPMENT PROTECTION, PERFORMED A WALKDOWN SURVEILLANCE OF UNITS 1 AND 2, AND REVIEWED CLEANLINESS CONTROL PROCEDURES, AND FOUND THAT THE OVERALL PROGRAM FOR DETECTION AND CORRECTION OF HOUSEKEEPING DEFICIENCIES APPEARED TO BE SATISFACTORY. DURING THE TRT ASSESSMENT, TWO ITEMS WERE IDENTIFIED THAT REQUIRED TU ELECTRIC's ACTION. THE FIRST PERTAINED TO THE NUMBER OF SWIPE TESTS REQUIRED BY DRAFT PROCEDURE FP-55-08 TO ASSURE THAT THE REACTOR VESSEL HAD BEEN ADEQUATELY CLEANED. THE SECOND PERTAINED TO AN OBSERVATION THAT NOT ALL PIPE SUPPORT SNUBBERS WERE PROTECTED FROM ONGOING CONSTRUCTION ACTIVITY.	CPRT ---- CPRT ASSESSED THE ADEQUACY OF THE HOUSEKEEPING AND SYSTEM CLEANLINESS PROGRAM AT CPSES DURING IMPLEMENTATION OF ISAP VII.a.7. BASED ON THIS ASSESSMENT, CPRT CONCLUDED THAT BROWN & ROOT (B&R) CONSTRUCTION PROCEDURES, THAT DEFINE HOUSEKEEPING AND CLEANLINESS REQUIREMENTS, WERE ADEQUATE TO MEET FSAR COMMITMENTS. CURRENT HOUSEKEEPING PRACTICES AND PROCEDURES ARE CONSIDERED SATISFACTORY AND COMPLY WITH THE PROGRAM BASIS. THIS CONCLUSION REFLECTS THE RESULTS OF THE OBSERVATIONS OF TU ELECTRIC SURVEILLANCES OF UNIT 1 AND 2 AREAS AND FACILITIES (WAREHOUSE, LAY-DOWN AREAS, IN-PLACE STORAGE, ETC.) WHICH VERIFIED THE FOLLOWING: - SATISFACTORY ACCESS CONTROL - ABSENCE OF EVIDENCE OF DAMAGE TO OR DETERIORATION OF PLANT MATERIALS AND EQUIPMENT - SATISFACTORY PROTECTION OF EQUIPMENT FROM HARMFUL ENVIRONMENTAL AND WORK INDUCED CONDITIONS. CURRENT PLANT AND STORAGE SURVEILLANCE PROCEDURES COMPLY WITH THE PROGRAM BASIS. THE CURRENT PROGRAM IS BEING ADEQUATELY IMPLEMENTED AND IS EFFECTIVE IN IDENTIFYING AND OBTAINING RESOLUTION OF UNSATISFACTORY CONDITIONS. IN THE INVESTIGATION OF REACTOR VESSEL CLEANLINESS, CPRT DETERMINED THAT THE WESTINGHOUSE SPECIFICATION STATED THAT THE

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			SAMPLING FOR SURFACE CONTAMINATION MUST BE SUFFICIENT TO INSURE THAT THE SURFACES ARE ADEQUATELY CLEANED. ACCORDING TO TU ELECTRIC STARTUP PERSONNEL, THE INTENT OF THE TWO SWIPES REQUIRED BY FP-55-08 WAS TO BE A MINIMUM NUMBER, WITH ONE SWIPE (MINIMUM) ON A VERTICAL SURFACE AND ONE SWIPE (MINIMUM) ON A HORIZONTAL SURFACE. THE ACTUAL NUMBER AND SPECIFIC LOCATION OF SWIPE TESTS WAS LEFT TO THE DISCRETION OF THE CHEMIST PERFORMING THE SWIPES. ACCORDINGLY, TEST LAB PERSONNEL TOOK SWIPE TESTS AT EIGHT LOCATIONS IN THE REACTOR VESSEL. CPRT CONSIDERS THESE EIGHT SWIPE TESTS PLUS WATER CHEMISTRY SAMPLES TO BE ADEQUATE TO DEMONSTRATE ACCEPTABLE CLEANLINESS OF THE REACTOR VESSEL. IN ADDITION, THE REACTOR VESSEL CLEANLINESS UNDER FP 55-08 WAS MAINTAINED TO CLASS B ALTHOUGH WESTINGHOUSE SPECIFICATIONS ONLY REQUIRED THE LESS STRINGENT CLASS C FOR THE INTERNAL SURFACES. (ISAP VII.a.7 RESULTS REPORT, PG 18, 24, AND 25). THE CPRT RESULTS RESOLVE THESE ISSUES. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
SSER: 11 ALLEG: TRT-05D ITEM: 11.83H	NONCONFORMANCE REPORT ISSUES. REF PG 0-14	SEE ITEM 11.84E, TRT-P5.	
SSER: 11 ALLEG: TRT-06 ITEM: 11.83J	QC INSPECTION ISSUES. REF PG 0-15	TRT --- SIX ALLEGATIONS WERE REVIEWED BY TRT. ONE ALLEGATION WAS PARTIALLY SUBSTANTIATED (AQ-78). THE ALLEGATION THAT AN INSPECTOR WAS TOLD TO IGNORE PROBLEMS WITH PIPE WHIP RESTRAINTS WAS SUBSTANTIATED (AQ-38). NUMEROUS VENDOR WELD IRREGULARITIES WERE IDENTIFIED BY SITE QA INSPECTORS ON CHICAGO BRIDGE AND IRON (CB&I) PIPE WHIP RESTRAINTS. GIBBS & HILL (G&H) STRUCTURAL ENGINEERING EVALUATED THE SERIOUSNESS OF DEFECTS IN EACH RESTRAINT. BASED ON THIS REVIEW, G&H DISPOSITIONED 67 RESTRAINTS AS HAVING INSIGNIFICANT DEFECTS. OF THE 48 REMAINING RESTRAINTS WITH IDENTIFIED DEFECTS, 21 WERE SELECTED AS WORST CASE AND THE WELDS ON THESE 21 RESTRAINTS WERE REINSPECTED THROUGH PAINT IN SOME CASES. A STRESS ANALYSIS WAS ALSO RERUN FOR THESE 21 RESTRAINTS, AND BASED ON THIS INSPECTION AND ANALYSIS, ALL RESTRAINTS WERE FOUND ACCEPTABLE. TRT FOUND THAT THE SELECTION OF WORST CASE	CPRT ---- THE ISSUE REGARDING WELD IRREGULARITIES ON PIPE WHIP RESTRAINTS IS ADDRESSED BY THE PROJECT. (DR-C-87-4114). CPRT RESOLUTION OF THE ALLEGATION REGARDING THE FUEL POOL LINER IS SUMMARIZED UNDER ITEM II.27A, AQ-55. CPRT COLLECTIVE EVALUATION AND RESOLUTION OF ALL QC INSPECTION ISSUES AND THEIR IMPLICATIONS ARE ADDRESSED UNDER ITEM 11.84F, TRT-P6.

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		WELDS AND THEIR REANALYSIS WAS NOT ADEQUATELY DOCUMENTED TO PERMIT REVIEW. ACCORDINGLY, TRT CONCLUDED THAT THE TECHNICAL CONCERN RELEVANT TO THIS ISSUE HAD BEEN SUBSTANTIATED AND HAD POTENTIAL QUALITY AND GENERIC IMPLICATIONS. THE ALLEGATION THAT FUEL POOL WELD RADIOGRAPHY WAS NOT COMPLETED WAS NOT SUBSTANTIATED (PART OF AQ-55). TRT FOUND AN EXCESSIVE NUMBER OF IRREGULARITIES IN THE INSPECTION TRAVELERS FOR THE FUEL POOL LINERS. THESE DOCUMENTATION ANOMALIES DID NOT APPEAR TO BE FALSIFICATIONS, BUT OCCURRED BECAUSE OF POOR QA PRACTICES. TRT CONCLUDED THAT DOCUMENTATION ANOMALIES HAD RESULTED FROM A POOR SYSTEM FOR CONTROL OF THESE PARTICULAR TRAVELERS AND FROM A POORLY IMPLEMENTED QC INSPECTION PROGRAM.	
SSER: 11 ALLEG: TRT-07 ITEM: 11.83K	QA SCOPE ISSUES. REF. PG 0-16	TRT --- TRT REVIEWED THIRTEEN ALLEGATIONS IN THIS CATEGORY. FOUR ALLEGATIONS WERE SUBSTANTIATED, THREE WERE PARTIALLY SUBSTANTIATED, AND SIX WERE NOT SUBSTANTIATED. BASED ON REVIEWS AND INTERVIEWS CONDUCTED BY TRT, THE ALLEGATION AND CONCERNS THAT QC WAS RELUCTANT TO REPORT DFFICIENCIES IN THE PAST COULD NOT BE SUBSTANTIATED OR REFUTED. IN REGARDS TO THE ALLEGATION OF CARELESS WORKMANSHIP DURING ITS AS-BUILT INSPECTIONS, TRT FOUND OBVIOUS CARELESS WORKMANSHIP THAT QC FAILED TO IDENTIFY. WITH RESPECT TO THE RECEIPT OF NONCONFORMING MATERIAL AT CPSES, TRT FOUND THAT THE RECEIVING INSPECTION SYSTEM USED AT CPSES WAS ADEQUATE TO PRECLUDE INSUFFICIENTLY EXAMINED OR NONCONFORMING MATERIAL FROM BEING RELEASED FOR INSTALLATION. TRT COULD NOT SUBSTANTIATE THE ALLEGATION AND CONCERN IN REGARDS TO THE QUALIFICATIONS OF BROWN & ROOT QA CONSTRUCTION MANAGERS. BROWN & ROOT's QA MANAGEMENT AND ENGINEERS JOB CLASSIFICATION/POSITION PREREQUISITES INCLUDED SPECIFIC EDUCATION AND	CPRT ---- THE CPRT RESOLUTION OF THE SPECIFIC ASPECTS OF THE TRT EVALUATION IDENTIFIED IN THE TRT SUMMARY HAS BEEN SUMMARIZED UNDER EACH ALLEGATION AS APPROPRIATE. THE RESULTS OF THE OVERALL CPRT EVALUATION OF THE TU ELECTRIC AND CONTRACTOR QA PROGRAMS ARE SUMMARIZED IN THE FOLLOWING PARAGRAPHS. CPRT EVALUATED THE ADEQUACY OF THE CURRENT QA PROGRAM FOR CONSTRUCTION OF CPSES UNDER EACH OF THE APPLICABLE CRITERIA OF 10 CFR 50, APPENDIX B. IN EACH CASE, CPRT DETERMINED THAT THE CURRENT CPSES QA PROGRAM IS EFFECTIVE AND COMPLIES WITH THE CPSES FSAR, SECTION 17.1 AND APPLICABLE ELEMENTS OF THE NRC STANDARD REVIEW PLAN. ADDITIONALLY, CPRT DETERMINED THAT APPROPRIATE CORRECTIVE ACTION, INCLUDING ACTION TO PREVENT RECURRENCE, HAS BEEN IDENTIFIED AND IS UNDERWAY TO RESOLVE PROBLEMS STEMMING FROM WEAKNESSES IN THE HISTORICAL QA PROGRAM FOR CONSTRUCTION OF CPSES. THEREFORE, CPRT CONCLUDED THAT THE CURRENT CPSES QA PROGRAM FOR CONSTRUCTION OF CPSES EFFECTIVELY IMPLEMENTS 10 CFR 50, APPENDIX B. CPRT ALSO EVALUATED THE ADEQUACY OF THE HISTORICAL QA PROGRAM FOR CONSTRUCTION OF CPSES. IN GENERAL, IMPLEMENTATION OF THE HISTORICAL QA PROGRAM WAS EFFECTIVE AND SATISFIED THE APPLICABLE

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		EXPERIENCE REQUIREMENTS. BASED ON THE REVIEW OF SELECTED MANAGERS QUALIFICATIONS (EDUCATION/TRAINING), TRT NOTED THAT THE EDUCATION REQUIREMENTS FOR FOUR UPPER MANAGEMENT POSITIONS WERE WAIVED USING AN EXCLUSION CLAUSE. THIS PERMITTED WORK EXPERIENCE TO BE WHOLLY SUBSTITUTED FOR EDUCATION REQUIREMENTS. THE ALTERATION OF MANAGEMENT POSITION PREREQUISITES WAS NOT A VIOLATION OF NRC REQUIREMENTS. NEVERTHELESS, SUCH PRACTICE WAS ANOTHER EXAMPLE OF BROWN & ROOT OVERUSE OF THE "EXCEPTION TO THE RULE CLAUSE." TRT SUBSTANTIATED THE ALLEGATION AND CONCERNS OF THE POTENTIAL FOR CRAFT PERSONNEL AND QC INSPECTORS REVIEWING RECORDS OF THEIR OWN WORK. BOTH BROWN & ROOT AND THE AUTHORIZED NUCLEAR INSPECTOR (ANI) ACKNOWLEDGED THAT PAST INSTANCES OCCURRED IN WHICH RECORD REVIEWERS VERIFIED/ACCEPTED INSPECTION RECORDS THAT CONTAINED THE RESULTS OF THEIR OWN QC INSPECTIONS. THE ANI REQUIRED SUCH RECORDS TO BE INDEPENDENTLY REVERIFIED. BECAUSE RECORD REVIEWERS WERE PLACED IN A POSITION TO REVIEW THEIR OWN WORK, THE INDEPENDENCE OF RECORD REVIEWERS IN THE PAST WAS SUSPECT. THE ALLEGATION AND CONCERN THAT QC LACKED ORGANIZATIONAL INDEPENDENCE FROM CONSTRUCTION COULD NOT BE SUBSTANTIATED OR REFUTED. TRT ALSO CONCLUDED THAT IMPROVEMENTS NEEDED TO BE MADE IN THE MANAGEMENT OF TU ELECTRIC's EXIT INTERVIEW PROGRAM, WHICH APPEARED TO LACK OBJECTIVITY AND EFFECTIVENESS. WITH RESPECT TO TU ELECTRIC's AUDITS AND AUDITORS, TRT FOUND THAT DURING THE PEAK CONSTRUCTION PERIOD OF 1981-1982, THE AUDIT GROUP CONSISTED OF ONLY FOUR AUDITORS. WITH RESPECT TO THE ALLEGATION AND CONCERN THAT AUDIT REPORTS WERE CHANGED, TRT FOUND THAT THE IDENTIFIED AUDIT REPORT WAS BASED ON INCORRECT REGULATORY REQUIREMENTS. THE CHANGES MADE BY THE QA SUPERVISOR WERE APPROPRIATE. TRT NOTED THAT WHAT WAS IMPORTANT WAS THAT THE AUDITORS WERE INADEQUATELY TRAINED AND DID NOT HAVE ADEQUATE PROCEDURES TO PERFORM THEIR AUDIT TASK CORRECTLY.	REQUIREMENTS OF 10 CFR 50, APPENDIX B. HOWEVER, CPRT DID IDENTIFY WEAKNESSES IN LIMITED AREAS OF THE QA PROGRAM RELATED TO CRITERIA I, II, V, VII, X, XV, AND XVIII OF 10 CFR 50, APPENDIX B. THE MAJOR AREAS OF CONCERN IN THE HISTORICAL QA PROGRAM UNDER THESE CRITERIA INVOLVED INSTANCES OF INADEQUATE CONSTRUCTION AND INSPECTION PROCEDURES AS RELATED TO CRITERIA V AND X REQUIREMENTS, THE LACK OF TIMELY IDENTIFICATION AND CORRECTION OF PROBLEMS WITH BAHNSON AS RELATED TO CRITERION VII, AND INADEQUATE VERIFICATION OF ACTIVITIES INVOLVED WITH THE PROCUREMENT OF ELECTRICAL EQUIPMENT AS RELATED TO CRITERION VII. A TU ELECTRIC AUDIT PROGRAM, THAT WAS NOT ALWAYS EFFECTIVE IN THE DETECTION AND RESOLUTION OF PROBLEMS, AND A LACK OF A WELL-COORDINATED QA SURVEILLANCE PROGRAM TO COMPLEMENT THE AUDIT PROGRAM CONTRIBUTED TO THESE PROBLEMS. IN ADDITION, UNTIL 1986 TU ELECTRIC DID NOT HAVE A FORMAL METHOD OF REGULARLY ASSESSING THE ADEQUACY OF THEIR QA PROGRAM AS IS REQUIRED BY CRITERION II. THIS ALSO MAY HAVE CONTRIBUTED TO THE EXISTENCE OF THESE AREAS OF CONCERN. ONE RECOMMENDATION RESULTED FROM BOTH THE QA PROGRAM AND QUALITY OF CONSTRUCTION COLLECTIVE EVALUATIONS. THIS RECOMMENDATION INVOLVED REVIEW OF HISTORICAL QC INSPECTION PROCEDURES TO IDENTIFY PERIODS OF TIME DURING WHICH SOME SAFETY-RELATED ATTRIBUTES MAY NOT HAVE BEEN ADEQUATELY INSPECTED AND TO RESOLVE THE POTENTIAL QUALITY OF CONSTRUCTION IMPACT OF ANY IDENTIFIED WEAKNESSES NOT ADDRESSED BY ESTABLISHED CORRECTIVE ACTION PROGRAMS. APPROPRIATE CORRECTIVE ACTION TO RESOLVE THE REMAINING QA PROGRAM-RELATED FINDINGS NOTED BY CPRT HAS BEEN OR IS BEING TAKEN. THE CORRECTIVE ACTIONS INCLUDED A SUBSTANTIAL INCREASE IN THE LEVEL OF NUCLEAR AND QUALITY ASSURANCE EXPERIENCE FOR TU ELECTRIC MANAGEMENT AND SUPERVISORY PERSONNEL, ESTABLISHMENT OF AN EFFECTIVE METHOD OF ANNUALLY EVALUATING THE ADEQUACY OF THE TU ELECTRIC QA PROGRAM, IMPROVEMENTS TO INCREASE THE EFFECTIVENESS OF THE TU ELECTRIC AUDIT AND QA SURVEILLANCE PROGRAMS, IMPROVEMENTS IN THE METHODS USED TO MONITOR AND CONTROL THE PERFORMANCE OF SITE SUBCONTRACTORS, AND THE TERMINATION OF BAHNSON FOR FURTHER WORK AT CPSES. IN ADDITION, THE AREAS OF CONSTRUCTION THAT WERE RELATED TO THESE FINDINGS ARE BEING REINSPECTED OR RE-EVALUATED AND, WHERE REQUIRED, CORRECTED. IN PARTICULAR, A PROGRAM FOR THE REINSPECTION, EVALUATION, AND CORRECTION OF PROBLEMS IN BAHNSON WORK IS BEING IMPLEMENTED. IN LIGHT OF THE EXTENSIVE CORRECTIVE ACTIONS TAKEN FOR THE INDIVIDUAL FINDINGS, CPRT CONCLUDED THAT NO

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		THE ALLEGATION AND CONCERN THAT TU ELECTRIC MANAGEMENT LACKED COMMITMENT TO AN ADEQUATE QA/QC PROGRAM WAS SUBSTANTIATED; e.g., FAILURE TO PERFORM MANAGEMENT ASSESSMENT AND OVERVIEW OF THE EFFECTIVENESS OF THE QA PROGRAM AND UNTIMELY REPORTING OF SIGNIFICANT DEFICIENCIES AS REQUIRED BY 10 CFR 50.55(e). ALTHOUGH TU ELECTRIC'S DOCUMENTED QUALITY PROGRAM MANUAL MET NRC'S REQUIREMENTS, TRT FOUND THAT THE IMPLEMENTATION OF THE QA PROGRAM IN A NUMBER OF AREAS WAS INEFFECTIVE, BECAUSE THERE WAS A LACK OF SENIOR TU ELECTRIC MANAGEMENT COMMITMENT TO , AND VERIFICATION OF, AN EFFECTIVELY IMPLEMENTED QA PROGRAM. IN SUMMARY, TRT CONCLUDED THAT THE SIGNIFICANCE AND GENERIC IMPLICATIONS OF AN INEFFECTIVE QA PROGRAM IMPLEMENTATION WERE REFLECTED IN THE RESULTS OF THE TRT'S EVALUATION OF THE QA/QC PROGRAMS AT CPSES, INCLUDING AS-BUILT INSPECTIONS OF COMPLETED SYSTEMS OR COMPONENTS, WHICH HAD BEEN INSPECTED AND ACCEPTED BY TU ELECTRIC.	ADDITIONAL ACTIONS, OTHER THAN THE ONE DISCUSSED ABOVE, WERE WARRANTED BY THE FINDINGS WHEN CONSIDERED COLLECTIVELY. (CER. PART IV, PG 85 AND 86). THESE ISSUES WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: TRT-08 ITEM: 11.83L	AS-BUILT ISSUES. REF PG 0-17	TRT --- TRT REVIEWED FOUR ALLEGATIONS IN THIS CATEGORY. TWO ALLEGATIONS WERE NOT SUBSTANTIATED AND TWO WERE PARTIALLY SUBSTANTIATED. WITH RESPECT TO THE ALLEGATION AND CONCERN THAT CRAFT PERSONNEL WOULD MAKE THINGS FIT AND NONCONFORMANCE REPORTS (NCRs) WERE VOIDED BY ENGINEERS WRITING AS-BUILT OR USE-AS-IS ON THEM, TRT FOUND THAT MODIFICATIONS TO VENDOR-CERTIFIED DRAWINGS, TO REFLECT THE AS-BUILT CONDITION, WERE PROPERLY RECERTIFIED BY THE VENDOR'S ONSITE REPRESENTATIVE IN ACCORDANCE WITH SITE PROCEDURES. TRT REVIEWED 72 NCRs THAT WERE DISPOSITIONED USE-AS-IS AND FOUND NONE THAT WAS IMPROPERLY DISPOSITIONED. THE POST-CONSTRUCTION VERIFICATION PROGRAM (PCVP) WALKDOWNS WERE MADE AFTER FINAL INSPECTIONS AND PRIOR TO A PLANT AREA BEING TURNED OVER TO THE TU ELECTRIC	CPRT --- CPRT RESOLUTIONS AND CONCLUSIONS REGARDING TRT CONCERNS RAISED IN THIS CATEGORY ARE AS FOLLOWS: 1. CPRT CONCLUSIONS ON INITIATION AND TRENDING OF NON-CONFORMANCES ARE REPORTED UNDER ITEM 11.84E. 2. CPRT CONCLUSIONS ON DOCUMENT CONTROL FOR CONSTRUCTION AND INSPECTION PACKAGES ARE REPORTED UNDER ITEM 11.83B. 3. CPRT CONCLUSIONS ON QC INSPECTION EFFECTIVENESS AND QC INSPECTION PROCEDURE ARE REPORTED UNDER ITEMS 11.84F AND 11.84H. 4. CPRT CONCLUSIONS REGARDING TU ELECTRIC ADHERENCE TO 10CFR PART 50.55(e) ARE REPORTED UNDER ITEM 11.84E. 5. THE ACCEPTABILITY OF SAFETY-RELATED HARDWARE AT CPSES, INCLUDING PIPE SUPPORTS AND CONDUIT SUPPORTS, WERE EVALUATED BY ISAP VII.C. CPRT CONCLUSIONS REGARDING THE HARDWARE REINSPECTION

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		STARTUP TESTING ORGANIZATION. WALKDOWNS BY PLANT OPERATIONS PERSONNEL WERE NOT CONSIDERED TO BE INSPECTIONS, BUT SERVED TO IDENTIFY AND CORRECT ANY REMAINING DEFICIENCIES. TRT COULD NOT SUBSTANTIATE MOST OF THE ALLEGATIONS AND CONCERNS RELEVANT TO THE PCVP. DURING THE COURSE OF ITS REVIEW, TRT FOUND CERTAIN PROGRAMMATIC WEAKNESSES DUE TO A LACK OF GUIDANCE WITH RESPECT TO THE LEVEL OF DEFICIENCY REQUIRED TO INITIATE AN NCR AND WITH RESPECT TO TRENDING NONCONFORMANCES. THE MAIN WEAKNESS APPEARED TO BE IN HOW TO DETERMINE WHETHER AN IDENTIFIED NONCONFORMANCE WARRANTED MORE EXTENSIVE CORRECTIVE ACTION OR WARRANTED A BROADER ASSESSMENT FOR GENERIC CONCERNS. TRT PURSUED SEVEN PRINCIPAL CONCERNS WITHIN ONE ALLEGATION (AQ-1 [illegible] BOUT THE AS-BUILT INSPECTION PROGRAM USED BY TU ELECTRIC TO ADDRESS THE NRC OFFICE OF INSPECTION AND ENFORCEMENT BULLETIN (IEB) 79-14, WHICH INVOLVED VERIFICATION OF INPUT USED IN SEISMIC ANALYSES FOR AS-BUILT SAFETY-RELATED PIPING SYSTEMS. TRT CONDUCTED FIELD INSPECTIONS IN UNIT 1 IN AN EFFORT TO DETERMINE WHETHER TU ELECTRIC'S AS-BUILT INSPECTION PROGRAM FUNCTIONED IN PROPER RESPONSE TO APPLICABLE CRITERIA OF 10 CFR PART 50, APPENDIX B, AND THE REQUIREMENTS OF IEB 79-14, PERTINENT TO THE CONCERNS OF THE PRINCIPAL ALLEGATIONS, AND TO VERIFY WHETHER THE PLANT'S AS-BUILT CONDITION FOR PIPE SUPPORTS WAS CONFIRMED IN THE FINAL DESIGN. TRT CONCLUDED THAT THE ALLEGATIONS AND CONCERNS INVOLVING THE IEB 79-14 ISSUES WERE NOT SUBSTANTIATED. AS A FOLLOW-UP TO IEB 79-14 ISSUES, TRT MADE AN INSPECTION OF FORTY-TWO PIPE SUPPORTS AND FIVE ELECTRICAL RACEWAY HANGERS AND CONDUIT SUPPORTS AND SELECTED ATTRIBUTES ON NINETY-TWO ADDITIONAL PIPE SUPPORTS AND TWO ADDITIONAL CONDUIT SUPPORTS IN UNIT 1 AND FOUND NUMEROUS DEFICIENCIES. THESE INSPECTIONS WERE OF COMPLETED SYSTEMS OR COMPONENTS THAT HAD BEEN PREVIOUSLY INSPECTED AND ACCEPTED BY QC AS MEETING THE RESPECTIVE CONSTRUCTION AND INSTALLATION REQUIREMENTS. THE AREAS INSPECTED HAD BEEN CLEANED AND SECURED READY FOR FUEL LOAD.	RESULTS AND GENERIC IMPLICATIONS ARE SUMMARIZED UNDER ITEM 11.84D. 6. THE CLASS 1E ELECTRICAL RACEWAY HANGERS WERE PART OF THE TU ELECTRIC CORRECTIVE ACTION PROGRAM PERFORMED BY IBASCO. 7. THE CPRT CONCLUSIONS REGARDING CONSTRUCTION WORKMANSHIP ARE SUMMARIZED UNDER ITEM 11.84D.

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		ALTHOUGH THE AS-BUILT ASSESSMENT DID NOT SPECIFICALLY ASSOCIATE THE IDENTIFIED HARDWARE PROBLEMS WITH DESIGN OR DOCUMENT CONTROL DEFICIENCIES, SOME OF THE PROBLEMS IDENTIFIED COULD HAVE RESULTED FROM NOT USING THE LATEST DOCUMENT PACKAGES FOR CONSTRUCTION AND INSPECTION. THE TRT AS-BUILT VERIFICATION INSPECTION OF PIPE SUPPORTS AND ELECTRICAL RACEWAY HANGERS AND CONDUIT SUPPORTS FOUND SOME EXAMPLES OF FAULTY CONSTRUCTION BY CRAFT PERSONNEL, INSTALLED HARDWARE THAT DID NOT MATCH THE AS-BUILT DRAWINGS, AND INEFFECTIVE QC INSPECTIONS IN THE FIELD. ALSO, TWO OF THE QC INSPECTION PROCEDURES HAD SEVERAL PROBLEMS: (1) THE TOLERANCE RANGE FOR TWO INSPECTION CRITERIA WAS NOT DEFINED; (2) THE TABLE FOR MINIMUM THREAD ENGAGEMENT OF BOLTS IN SNUBBER ADAPTER PLATES WAS IN POTENTIAL CONFLICT WITH ASME CODE REQUIREMENTS; AND (3) INSPECTION REQUIREMENTS FOR CERTAIN ALTERNATE LOCKING DEVICES FOR THREADED FASTENERS AND FOR LOAD PINS ON NF SUPPORTS FOUND IN THE PLANT WERE NOT ADDRESSED. THE OMISSION OF LOCKING DEVICES ON NF SUPPORT THREADED FASTENERS IN UNIT 1 WAS NOT REPORTED ON AN NCR BY QC FOR DISPOSITIONING BY ENGINEERING AND WAS NOT REPORTED TO NRC UNDER 10 CFR PART 50.55(e). INSTEAD, TU ELECTRIC ENGINEERING STATED BY MEMORANDUM THAT EXISTING PAINT ON THE THREADS WAS ACCEPTABLE AS A LOCKING DEVICE. THE QUALITY ASSURANCE SPECIFICATION FOR PAINTING NF SUPPORTS WAS INADEQUATE IN THE AREA OF INSPECTION OF PAINTED THREADS, WHICH ACCORDING TO TU ELECTRIC SERVED AS LOCKING DEVICES ON NF SUPPORTS. IN THE LIMITED INSPECTION BY TRT, THE FREQUENCY AND REPEATABILITY OF DEFICIENCIES RELATED TO PIPE SUPPORTS WERE MOST NOTABLE WITH RESPECT TO EXCESSIVE FREE GAP AT THE SPHERICAL BEARINGS OF SNUBBERS AND SWAY STRUTS, STRUT AND SNUBBER FASTENERS NOT PROPERLY SECURED, AND INSUFFICIENT THREAD ENGAGEMENT OF BOLTS IN SHOCK ARRESTER PLATES. TRT ALSO FOUND A HIGH RATE OF REJECTABLE CHARACTERISTICS ON CLASS 1E ELECTRICAL RACEWAY HANGERS AND CONDUIT SUPPORTS. TRT CONCLUDED THAT FOR PIPE SUPPORTS IN THOSE SYSTEMS AND COMPONENTS INSPECTED, ASME CODE REQUIREMENTS,	

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		QUALITY ACCEPTANCE STANDARDS, DESIGN DRAWINGS, AND SITE QC PROCEDURE WERE NOT FOLLOWED CONSISTENTLY. TRT ALSO CONCLUDED THAT THE QC INSPECTION OF CERTAIN ELECTRICAL RACEWAY HANGERS AND CONDUIT SUPPORTS WAS UNSATISFACTORY IN THAT VARIOUS UNACCEPTABLE FABRICATION AND INSTALLATION CHARACTERISTICS WERE NOT REPORTED. BASED ON THE TRT INSPECTION OF FORTY-TWO PIPE SUPPORTS, FIVE ELECTRICAL SUPPORTS AND SELECTED ATTRIBUTES ON NINETY-TWO ADDITIONAL PIPE SUPPORTS AND TWO ADDITIONAL CONDUIT SUPPORTS, AND CONSIDERING THE RATE OF OCCURRENCE OF NONCONFORMANCES, TRT CONCLUDED THAT SOME TYPES OF DEFICIENCIES MIGHT BE GENERIC IN NATURE THROUGHOUT UNIT 1. DEFICIENCIES IN LOAD PIN LOCKING DEVICES FOR SWAY STRUTS AND SNUBBERS, THREAD ENGAGEMENT OF BOLTS IN SNUBBER ADAPTER PLATES, HILTI BOLT INSTALLATION, AND INADEQUATE LOCKING DEVICES ON NF SUPPORT THREADED FASTENERS, EACH HAD POTENTIAL QUALITY AND SAFETY IMPLICATIONS. IN SUMMARY, TRT MADE A LIMITED INSPECTION OF INSTALLED QC-ACCEPTED PIPE SUPPORTS, ELECTRICAL HANGERS, AND CONDUIT SUPPORTS AND CONCLUDED, IN GENERAL, THAT THE FINAL QC INSPECTIONS WERE INADEQUATE BECAUSE THE FREQUENCY OF RECURRING DEFICIENCIES IDENTIFIED DURING THE INSPECTION WERE EXCESSIVE. TRT CONCLUDED THAT THE MOST IMPORTANT QA CONCERN RESULTING FROM THE AS-BUILT INSPECTION EFFORT WAS THAT QC DID NOT DETECT AND REPORT THESE OBVIOUS NONCONFORMING CONDITIONS.	
SSER: 11 ALLEG: TRT-01 ITEM: 11.84A	DESIGN PROCESS ISSUES. REF PG 0-9	TRT --- APPENDIX O (SEC. 3.2.1, PG 0-9) TRT REVIEWED SIX ALLEGATIONS PERTAINING PRINCIPALLY TO DESIGN CHANGE ISSUES. THREE WERE SUBSTANTIATED (CERTIFIED DRAWINGS HAD ERRORS IN WELD SIZE AND LOCATION, CERTIFIED DRAWINGS WERE REVISED TO REFLECT AS-BUILT CONDITIONS, AND VENDOR DOCUMENTS WERE NOT CONTROLLED). ELEVEN SUPPORTS WERE INSPECTED BY TRT TO ESTABLISH WHETHER THE AS-BUILT CONDITIONS OF THESE PIPE SUPPORTS	CPRT ---- THE ELEMENTS OF THE CPRT PROGRAM RESULTS THAT ENCOMPASS AND RESOLVE TRT ISSUES ARE SUMMARIZED BELOW. THE CPRT PROGRAM PLAN (REV 3) INITIALLY INCLUDED A SELF-INITIATED REVIEW OF THE CPSES DESIGN ON A SAMPLING BASIS. IN APRIL 1987, TU ELECTRIC COMMITTED TO A CORRECTIVE ACTION PROGRAM (CAP) WITH A COMPREHENSIVE DESIGN VALIDATION COMPONENT. AT THIS TIME, THE CPRT ASSESSMENT OF DESIGN ADEQUACY WAS REDIRECTED TO FOCUS ON AN OVERVIEW OF CAP AS THE CPRT MECHANISM TO ENSURE THE ADEQUACY OF DESIGN. CPRT CONCLUSIONS ON THIS ASPECT OF THE PROGRAM ARE REPORTED IN THE COLLECTIVE SIGNIFICANCE REPORT.

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		WERE FOUND TO HAVE WELD PROBLEMS (UNDERCUT AND OVERGRINDING OF WELDS). BOTH CONDITIONS REQUIRED ENGINEERING DISPOSITION TO ACCEPT-AS-IS OR TO REPAIR, BUT NEITHER CONDITION WOULD HAVE REQUIRED A DRAWING CHANGE. THEREFORE, IN THIS SAMPLE NO DISAGREEMENT WAS IDENTIFIED BETWEEN THE CERTIFIED DRAWINGS AND THE AS-BUILT SUPPORTS. TRT FOUND THAT CHANGES TO DESIGN DRAWINGS AND VENDOR-CERTIFIED DRAWINGS WERE MADE AFTER THE PIPE SUPPORTS HAD BEEN INSTALLED, AND THE SUPPORTS WERE MODIFIED AFTER THE DRAWINGS WERE VENDOR CERTIFIED. THESE ACTIONS, ALTHOUGH THEY MAY HAVE APPEARED TO BE UNCONTROLLED, DID NOT VIOLATE PROCEDURES OR NRC REQUIREMENTS AND THE ANALYSIS OF THESE CHANGES WAS IN ACCORDANCE WITH PROCEDURES. TRT'S ASSESSMENT OF THE ITERATIVE DESIGN PROCESS RELATIVE TO PROCESSING DESIGN FIELD CHANGES DID NOT IDENTIFY ANY QA PROGRAMMATIC DEFICIENCIES THAT COULD CAUSE A BREAKDOWN IN THE DESIGN PROCESS. HOWEVER, AN IN-DEPTH ASSESSMENT OF THE OVERALL DESIGN PROCESS WILL BE INCLUDED IN A FUTURE SSER PERTAINING TO THE CYGNA INDEPENDENT ASSESSMENT PROGRAM (IAP). APPENDIX P OF SSER-11 PROVIDES A CUMULATIVE ASSESSMENT OF THE DESIGN PROCESS BASED ON THE FINDINGS OF THE ENTIRE TRT. APPENDIX P - (SEC. 4.1, PG P-27) THE ASSESSMENT OF THE DESIGN PROCESS GENERALLY FOCUSED ON A REVIEW OF CONTROL OF CHANGES TO DESIGN DOCUMENTS, PRINCIPALLY VENDOR DESIGNS; INCORPORATION OF FIELD CHANGES IN THE DESIGN; AND DESIGN INTERACTION WITH PLANT ORGANIZATIONS. FROM THE QA/QC POINT OF VIEW, TRT FOUND THAT THE DESIGN PROCESS FOR COMANCHE PEAK WAS BASED ON PROCEDURES CONSISTENT WITH NRC REQUIREMENTS AND THAT THESE PROCEDURES WERE IMPLEMENTED. ACTUAL DESIGN PROCESS PERFORMANCE, HOWEVER, DISPLAYED SOME DEFICIENCIES. DESIGN CHANGES (DCAs AND CMCs) WERE PERMITTED TO ACCUMULATE AGAINST BASIC DESIGN DOCUMENTS WITH NO PROGRAM REQUIREMENT FOR THEIR TIMELY INCORPORATION INTO DRAWINGS. MEASURES HAVE BEEN ESTABLISHED TO QUICKEN THE INCORPORATION OF CHANGES AND TO LESSEN THE CONTROL PROBLEMS AND DELAYS	SOME OF THE ALLEGATIONS AND TRT ISSUES REPORTED ABOVE ARE RELATED TO THE DESIGN CHANGE PROCESS AND THE INTERFACE BETWEEN DESIGN, CONSTRUCTION AND QC GROUPS. SEVERAL OF THE CPRT FINDINGS WERE RELATED TO THESE ASPECTS OF THE CONSTRUCTION PROGRAM AND WERE EVALUATED IN THE QUALITY OF CONSTRUCTION (QOC) PORTION OF THE COLLECTIVE EVALUATION REPORT. THESE EVALUATIONS AND CONCLUSIONS ARE SUMMARIZED BELOW. THE SELF-INITIATED HARDWARE REINSPECTION, ISAP VII.C, PROVIDED A SUBSTANTIAL BASIS FOR EVALUATING THE OVERALL QUALITY OF CONSTRUCTION. EACH REINSPECTION POINT WAS, IN EFFECT, A TEST OF THE CONSTRUCTION ORGANIZATION TO ADEQUATELY IMPLEMENT THE DESIGN. APPROXIMATELY 3,800 ITEMS, EQUIVALENT TO APPROXIMATELY 1.4 PERCENT OF THE SAFETY-RELATED ITEMS IN THE PLANT, WERE REINSPECTED. THE RESULTS OF THE REINSPECTIONS DEMONSTRATED A HIGH CONFORMANCE RATE WITH 98 PERCENT OF THE INSPECTION POINTS FOUND TO BE IN CONFORMANCE WITH DESIGN REQUIREMENTS. OF THE TWO PERCENT OF THE REINSPECTION POINTS FOUND TO DEVIATE FROM DESIGN REQUIREMENTS, MORE THAN THREE-FOURTHS OF THE DEVIATIONS WERE EVALUATED TO BE INSIGNIFICANT. (CER, PART III, PG 143). NINETY-THREE CONSTRUCTION RELATED FINDINGS WERE IDENTIFIED BY CPRT. ROOT CAUSES RELATED TO DESIGN AND DESIGN CHANGE PROCESSES INCLUDED NINE FINDINGS IN THE CATEGORY "CONSTRUCTION CONFIGURATION CONTROL" THAT HAD ROOT CAUSES RELATED TO DESIGN CHANGES THAT WERE IMPLEMENTED IN THE FIELD AND EIGHTEEN FINDINGS IN THE CATEGORY "SUBSEQUENT CHANGES" THAT HAD ROOT CAUSES INDICATING THAT WORK PREVIOUSLY INSPECTED AND APPROVED WAS LATER DAMAGED OR CHANGED WITHOUT A FOLLOW-UP INSPECTION. CPRT COLLECTIVELY EVALUATED THESE FINDINGS AND CONCLUDED THAT WHILE IN SOME AREAS THE TASK OF MAINTAINING AND MODIFYING THE PLANT HAD NOT ALWAYS BEEN ACCOMPLISHED SUCCESSFULLY. THE FINDINGS WERE EITHER SUFFICIENTLY BOUNDED, OR ISOLATED, SUCH THAT THEY WERE ADEQUATELY ADDRESSED BY EXISTING CORRECTIVE ACTIONS. (CER, PART III, PG 115-119). DESIGN INFORMATION (ENGINEERING) --- THE CATEGORY OF "DESIGN INFORMATION" INCLUDED THOSE FINDINGS WHOSE ROOT CAUSES INVOLVED VARIOUS ENGINEERING OUTPUTS (e.g., DRAWINGS, SPECIFICATIONS OR DESIGN EVALUATIONS) THAT WERE PART OF THE APPLICABLE DESIGN FOR THE ISAP INVESTIGATION. CPRT IDENTIFIED

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		PREVIOUSLY EXPERIENCED. TRT FOUND EXAMPLES OF INEFFECTIVE INTERACTION AMONG THE ENGINEERING, CONSTRUCTION, AND QUALITY CONTROL GROUPS THAT WAS EVIDENT BECAUSE OF INCOMPLETE OR INADEQUATE WORK INSTRUCTIONS FOR CRAFT PERSONNEL, DESIGN ACCEPTANCE OF QUESTIONABLE CONSTRUCTION PRACTICES, INADEQUATE DESIGN ANALYSES OF FIELD CHANGES, AND INCOMPLETE SEISMIC ANALYSES. NONCONFORMANCE REPORT (NCR) DISPOSITIONS BY ENGINEERS WERE SOMETIMES POOR IN JUDGMENT AND LACKING IN ANALYSIS AND IN TECHNICAL DEPTH. BECAUSE A BASIC PREMISE IN DESIGNING A PIPING SYSTEM INCLUDES THE FACT THAT SUPPORT DESIGNS WILL REFLECT THE ASSUMPTIONS MADE IN THE ANALYSIS OF THAT PIPING, THE FAILURE OF THE DESIGN PROCESS TO REQUIRE GIBBS & HILL TO REVIEW DESIGNS AND MODIFICATIONS OF PIPE SUPPORTS PRIOR TO FABRICATION AND INSTALLATION, WAS OF CONCERN. THERE WERE INSTANCES OF FAILURE TO CONTROL QUALITY STANDARDS IN DESIGN DOCUMENTATION (SEE SSERs 8 AND 10). THERE WAS ALSO FAILURES TO NOTIFY THE NRC OF CHANGES TO THE FSAR (SEE SSER 10). WITHIN THE SCOPE OF TRT's ASSESSMENT OF THE DESIGN PROCESS, THE INTERACTIONS AMONG THE ENGINEERING, CONSTRUCTION AND QC GROUPS, AND PROGRAM DEFICIENCIES PRESENTED, APPEARED TO BE THE ONLY DEFICIENT AREAS ADDRESSED BY TU ELECTRIC. A MORE COMPREHENSIVE ASSESSMENT OF THIS DESIGN PROCESS WILL BE INCLUDED IN FUTURE SER SUPPLEMENTS DEALING WITH THE NRC's REVIEW OF FINDINGS FROM THE CYGNA INDEPENDENT ASSESSMENT PROGRAM.	ELEVEN FINDINGS IN THIS CATEGORY, WITH THREE INVOLVING DESIGN PRODUCTS THAT DID NOT ENSURE ADEQUATE INSTALLATION AND EIGHT INVOLVING ENGINEERING EVALUATIONS THAT DID NOT INSURE CORRECTION OF A NOTED PROBLEM WITH AN AS-BUILT CONDITION. THE PROJECT HAS INITIATED EXTENSIVE REMEDIAL PROGRAMS TO ENSURE THAT THE DESIGN OF CPSES IS ADEQUATE. THE PROGRAMS INCLUDE THE SPECIFICATION, PROCEDURE, AND DRAWING UPDATE (SPADU) PROGRAM TO ENSURE APPROPRIATE SPECIFICATION OF INSTALLATION REQUIREMENTS, RE-EXAMINATION OF THE TECHNICAL VALIDITY OF THE DISPOSITION OF NONCONFORMANCE REPORTS, AND A DESIGN VALIDATION. ONCE DESIGN PROBLEMS ARE DETECTED, THE POST CONSTRUCTION HARDWARE VALIDATION PROGRAM WILL IDENTIFY DIFFERENCES BETWEEN THE AS-BUILT PLANT AND THE CORRECTED DESIGN AND INSTITUTE CORRECTIVE ACTIONS FOR THE HARDWARE. (CER, PART III, PG 118-120). OVERALL CONCLUSION CPRT CONCLUDED IN THE COLLECTIVE EVALUATION REPORT (CER) THAT ITS PROGRAM WAS SUFFICIENT TO IDENTIFY PROGRAMMATIC DEFICIENCIES AFFECTING THE QUALITY OF CONSTRUCTION OF CPSES, AND THAT UPON SATISFACTORY IMPLEMENTATION OF THE CORRECTIVE ACTION IDENTIFIED BY CPRT, THERE WILL BE REASONABLE ASSURANCE THAT THE SYSTEMS, STRUCTURES AND COMPONENTS OF CPSES WILL MEET THE SIGNIFICANT, SAFETY-RELATED REQUIREMENTS OF THE OCTOBER 1985 DESIGN. (CER, PART 1, PG 13). CPRT ALSO COLLECTIVELY EVALUATED THE FINDINGS AND CONCLUSIONS IN THE COLLECTIVE EVALUATION REPORT AND DSAPs AND CONCLUDED IN THE COLLECTIVE SIGNIFICANCE REPORT (CSR) THAT: - THE CURRENT PROGRAMS FOR DESIGN, CONSTRUCTION, TESTING, AND ASSURANCE OF QUALITY OF CPSES ARE ADEQUATE, AND PROBLEMS ARISING FROM WEAKNESSES IN THE HISTORICAL PROGRAMS HAVE BEEN IDENTIFIED AND APPROPRIATE CORRECTIVE ACTION HAS BEEN DEFINED. - THE CORRECTIVE ACTION PROGRAM (CAP) PROVIDES AN ADEQUATE MEANS OF VALIDATING THE DESIGN AND HARDWARE FOR CPSES, AND THE CPSES QA PROGRAM, THE TECHNICAL AUDIT PROGRAM, THE ENGINEERING FUNCTIONAL EVALUATION, AND OTHER AUDIT AND OVERVIEW PROGRAMS PROVIDE ADEQUATE MEANS FOR ASSURING ACCEPTABLE IMPLEMENTATION OF THE CAP - CORRECTIVE ACTIONS ENCOMPASSED BY THE CAP PROVIDE

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
			REASONABLE ASSURANCE THAT THE STRUCTURES, SYSTEMS, AND COMPONENTS AT CPSES WILL BE CAPABLE OF PERFORMING THEIR INTENDED SAFETY FUNCTIONS. (CSR, PART VIII, PG 1).
SSER: 11 ALLEG: TRT-P2 ITEM: 11.84B	DOCUMENT CONTROL. REF PG P-27	TRT --- TRT ASSESSMENT OF THE DOCUMENT CONTROL FUNCTION FOR THE PERIOD FOLLOWING JULY 1984 INDICATED THAT THE PREPARATION, ISSUANCE AND CHANGES TO DOCUMENTS THAT SPECIFY QUALITY REQUIREMENTS OR PRESCRIBE ACTIVITIES AFFECTING QUALITY WERE ADEQUATELY CONTROLLED. DOCUMENTATION PACKAGES REVIEWED AT THE POINT OF ISSUE, AND IN THE FIELD WHERE PRESCRIBED ACTIVITIES WERE BEING PERFORMED, WERE FOUND TO BE COMPLETE AND CURRENT. FURTHER, A SAMPLE OF SAFETY-RELATED QUALITY RECORDS STORED IN THE PERMANENT PLANT RECORDS VAULT (PPRV) WAS REVIEWED AND FOUND TO BE ACCEPTABLE. INCLUDED IN THE DOCUMENTATION PACKAGES WERE COMPLETED RECORDS OF PIPING, PIPING SUPPORTS (HANGERS), ASSEMBLED AND/OR INSTALLED COMPONENTS, FABRICATION AND INSPECTION/TESTING DATA, INCLUDING WALKDOWN INSPECTION CHECKLISTS, AND THE APPLICABLE N-5 DATA REPORTS. IN-PROCESS AND FINAL INSPECTION AND ACCEPTANCES FOR COMPLETED RECORD PACKAGES APPEARED TO HAVE BEEN PERFORMED TO THE LATEST REVISION OF DRAWINGS AND SPECIFICATIONS. HOWEVER, THE HISTORY OF RECURRING DOCUMENT CONTROL DEFICIENCIES PRIOR TO JULY 1984 RAISED CONCERNS ABOUT CERTAIN ASPECTS OF THE QUALITY OF CONSTRUCTION. FOR EXAMPLE, TRT OBSERVED DEFICIENCIES IN COATING INSPECTION REPORTS WHICH INCLUDED: INADEQUATE DESCRIPTION OR LOCATION OF AREAS OR ITEMS COATED; IMPROPER CHANGES AND CORRECTIONS; LACK OF SIGNATURES OR ACCEPTANCE FOR IN-PROCESS AND FINAL INSPECTIONS; AND MISSING DATES AND TIMES. THESE DEFICIENCIES WERE SIGNIFICANT ENOUGH TO RENDER THE INSPECTION REPORTS UNACCEPTABLE AS QUALITY RECORDS AND INADEQUATE TO PROVIDE DOCUMENTATION OF MATERIAL TRACEABILITY. ONE SPECIFIC MATERIAL TRACEABILITY AND RECORDS PROBLEM WAS THAT PAINT MIXING SLIPS WERE NOT RETAINED AS PERMANENT RECORDS, BUT WERE DISCARDED AFTER THE INSPECTOR IN THE COATING APPLICATIONS AREA TRANSCRIBED THE INFORMATION ONTO HIS OWN REPORT. THUS, THE ORIGINAL RECORD OF THE	CPRT ---- APPLICATION OF THE CONTAINMENT LINER PAINT HAD BEEN IDENTIFIED AS A CONCERN, BUT SUBSEQUENT EVALUATION DETERMINED THAT THE PAINT WAS NOT A SAFETY-RELATED ITEM. SIMILAR CONCERNS WITH THE FUEL POOL LINER WERE INVESTIGATED. THE FUEL POOL LINER, WHILE DESIGNATED AS SAFETY-RELATED, WAS INSTALLED WITHOUT THE FULL COMPLEMENT OF WORK PROCESS CONTROLS FOR DOCUMENTATION THAT SHOULD HAVE BEEN APPLIED. HOWEVER, THE INSTALLATION OF THE FUEL POOL LINER WAS CONSIDERED TO BE TECHNICALLY ADEQUATE (ISAP VII.a.8 RESULTS REPORT, PG 23; ISAP VII.c RESULTS REPORT, APPENDIX 24, PG 9 AND 10). BASED UPON ITS EVALUATION OF THE CURRENT AND HISTORICAL QUALITY ASSURANCE RECORDS PROGRAMS AT CPSES, CPRT CONCLUDED THE FOLLOWING: - CURRENT QUALITY ASSURANCE RECORDS PROGRAMS ARE ADEQUATE UNDER 10CFR50, APPENDIX B, CRITERION XVII. - HISTORICAL QUALITY ASSURANCE RECORDS PROGRAMS, WITH THE EXCEPTION OF THE BAHNSON PROGRAM, WERE ADEQUATE, BUT THERE WERE PROBLEMS IN SPECIFIC AREAS. - CORRECTIVE ACTION IS IN PROCESS TO CORRECT THE PROBLEMS THAT CAUSED THE FAILURE TO GENERATE AND/OR PROPERLY COMPLETE QUALITY ASSURANCE RECORDS. THE MISSING RECORDS HAVE BEEN DETERMINED TO HAVE NO ADVERSE EFFECT ON INSTALLED HARDWARE. (CER, PART IV, PGS 76 - 78). CPRT CONCLUSIONS REGARDING PROCEDURES ARE SUMMARIZED IN ITEM 11.84H. THE SPECIFIC ALLEGATION REGARDING COLD SPRINGING IS RESOLVED IN ITEM 10.010. CPRT CONCLUSIONS REGARDING IMPLICATIONS OF PAST DOCUMENT CONTROL INADEQUACIES ON CONSTRUCTION AND INSPECTION ARE SUMMARIZED IN ITEM 11.83B.

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		MIXING INSPECTION, INCLUDING INSPECTION ACCEPTANCE, WAS LOST. IN PROCEDURAL CONTROL, TRT OBSERVED THAT UNCONTROLLED AND UNAUTHORIZED PROCEDURES WERE USED TO PERFORM COLD-SPRINGING (REALIGN PIPING) DURING ITS INSTALLATION. WITH RESPECT TO DRAWING CONTROL PRIOR TO 1984, TRT FOUND DEFICIENCIES THAT INCLUDED: DISTRIBUTION OF INCOMPLETE OR OBSOLETE DRAWING PACKAGES TO THE CRAFT AND QC PERSONNEL; INADEQUATE DRAWING CONTROL; HIGH DOCUMENT CONTROL CENTER (DCC) SATELLITE ERROR RATES; AND PROCEDURAL NON-COMPLIANCES. TRT CONCLUDED THAT ALTHOUGH MANY OF THE DOCUMENT CONTROL INADEQUACIES HAD BEEN CORRECTED, THE IMPLICATIONS OF PAST INADEQUACIES ON CONSTRUCTION AND INSPECTION HAVE POTENTIAL GENERIC SIGNIFICANCE WHICH HAD NOT YET BEEN FULLY ANALYZED BY TU ELECTRIC.	
SSER: 11 ALLEG: TRT-P3 ITEM: 11.84C	TRAINING AND QUALIFICATIONS. REF PG P-28	TRT --- TRT FOUND A PATTERN OF INADEQUACIES WITH THE TRAINING, CERTIFICATION AND QUALIFICATION PROGRAMS AT CPSES, BECAUSE OF THE MANY DEFICIENCIES IDENTIFIED. THESE PROBLEMS COULD BE DIRECTLY TRACEABLE TO TU ELECTRIC'S AND BROWN & ROOT's (B&R's) "MINIMAL REQUIREMENT" TRAINING, CERTIFICATION, AND QUALIFICATION PROGRAMS; THE LACK OF OR FAILURE TO FOLLOW PROCEDURES AND GUIDELINES; AND A LACK OF PROGRAMMATIC CONTROLS TO ASSURE THAT THE PROGRAMS ACHIEVED AND MAINTAINED REQUIREMENTS AS SET FORTH BY 10 CFR PART 50, APPENDIX B. THE TRT ELECTRICAL AND INSTRUMENTATION, PROTECTIVE COATINGS, AND CIVIL AND STRUCTURAL GROUPS ASSESSED ALLEGATIONS AND CONCERNS ABOUT ELECTRICAL INSPECTORS, COATINGS INSPECTORS, AND CONCRETE INSPECTORS. THESE INSPECTORS WERE ALL TRAINED, CERTIFIED, AND QUALIFIED UNDER THE SAME PROGRAM (NON-ASME) AS THE INSPECTION PERSONNEL REVIEWED BY THE QA/QC GROUP. EACH TRT GROUP FOUND EXAMPLES OF THE SAME KINDS OF DEFICIENCIES: NO VERIFICATION OF EDUCATION OR WORK EXPERIENCE; AN IDENTICAL CERTIFICATION TEST TAKEN AFTER THE EXAMINEE FAILED THE FIRST ONE; NO GUIDELINES PROVIDED FOR THE USE OF WAIVERS FOR ON-THE-JOB TRAINING (OJT); NO TIME	CPRT ---- THE CPRT RESOLUTION OF QC INSPECTOR TRAINING AND QUALIFICATION CONCERNS IS DESCRIBED IN ITEM 11.83D. CPRT EVALUATED QA AUDITOR QUALIFICATION AS PART OF THE OVERALL AUDIT PROGRAM EVALUATION UNDER ISAP VII.a.4 AND CONCLUDED THAT THE AUDIT PERSONNEL QUALIFICATION PROGRAM ADEQUATELY REFLECTED THE REQUIREMENTS OF THE APPROPRIATE GOVERNING STANDARDS AND REGULATORY GUIDANCE AND, THEREFORE, RESULTED IN NO ADVERSE EFFECT ON THE AUDIT PROGRAM. THIS RESOLVES THIS CONCERN. (ISAP VII.a.4, RESULTS REPORT, PG 37 AND 38.)

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		LIMIT ON HOW MANY TIMES AN EXAMINATION COULD BE RETAKEN; AND QUESTIONABLE QUALIFICATIONS FOR INSPECTORS. THERE WERE ALSO MANY PROBLEMS WITH THE CERTIFICATION TESTING PROGRAM FOR THE NON-ASME INSPECTORS. THERE WAS NO TIME LIMIT BETWEEN A FAILED TEST AND A RETEST, THERE WERE DIFFERENT SCORING METHODS TO GRADE THE ORIGINAL TEST AND THE RETEST, THERE WERE NO GUIDELINES ON HOW A TEST QUESTION SHOULD BE DISQUALIFIED, AND THERE WERE NO DETAILS ON HOW THE ADMINISTRATION OF TESTS SHOULD BE MONITORED. TRT ALSO FOUND THAT MANY CRAFTSMEN THAT TRANSFERRED INTO QC INSPECTION HAD NO PRIOR BACKGROUND OR EXPERIENCE IN INSPECTION. B&R HAD PROCEDURES FOR ASME PERSONNEL TRAINING AND CERTIFICATION THAT MINIMALLY MET THE REQUIREMENTS OF ANSI N45.2.6 AND REGULATORY GUIDE 1.58, BUT IN PRACTICE THESE GUIDELINES WERE NOT ALWAYS FOLLOWED. ALTHOUGH TU ELECTRIC AND B&R HAD COMMITTED TO FOLLOW THE REQUIREMENTS SET FORTH IN ANSI N45.2.6 AND REGULATORY GUIDE 1.58, BOTH CHOSE TO FOLLOW THE "EXCEPTION TO THE RULE" AND USED "OTHER FACTORS" AS THE NORMAL METHOD OF QUALIFICATION. MORE THAN EIGHTY PERCENT OF THE INSPECTION PERSONNEL (BOTH ASME AND NON-ASME) WERE QUALIFIED UNDER THE "EXCEPTION TO THE RULE" FACTOR. TRT ALSO FOUND THAT SOME QA AUDITORS LACKED EXPERIENCE, WERE INADEQUATELY TRAINED, OR HAD QUESTIONABLE QUALIFICATIONS. TRT CONCLUDED THAT DEFICIENCIES IN PROCEDURAL REQUIREMENTS AND GUIDELINES IN TU ELECTRIC'S TRAINING, CERTIFICATION, AND QUALIFICATION PROGRAMS HAD POTENTIAL QUALITY SIGNIFICANCE. FURTHER EVALUATION BY TU ELECTRIC WAS REQUIRED IN ORDER TO DETERMINE THE IMPACT OF THE DEFICIENCIES ON THE SAFETY OF THE PROJECT.	

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ISSUE SOURCE	ISSUE	TRT ISSUE SUMMARY	CPRT RESPONSE
SSER: 11 ALLEG: TRT-P4 ITEM: 11.84D	CONSTRUCTION AND TESTING. REF PG P-29	TRT --- FOLLOWING IS A LIST OF THOSE RECURRING PRACTICES FOR WHICH CONSTRUCTION CRAFT PERSONNEL WERE EITHER A PRIMARY OR CONTRIBUTING FACTOR OR HAD PLANT-WIDE IMPACT: (1) CRAFT PERSONNEL FAILED TO FOLLOW DESIGN DOCUMENTS OR INSTALLATION PROCEDURES. (2) UNAUTHORIZED WORK WAS PERFORMED IN ABSENCE OF PROCEDURES. (3) HOUSEKEEPING PROCEDURES WERE NOT FOLLOWED. (4) USE AND RETURN OF EQUIPMENT, TOOLS, AND MATERIAL WERE NOT IN ACCORDANCE WITH REQUIREMENTS. (5) THERE WAS LOSS, DAMAGE, AND INTERCHANGE OF VALVE PARTS. (6) THERE WAS IMPROPER TRANSFER OF HEAT NUMBERS ONTO SCRAP METAL THAT WAS USED IN A PIPE SUPPORT. (7) EQUIPMENT REPAIRS AND REWORK WERE PERFORMED WITHOUT PROPER DOCUMENTATION. IN CONCLUSION, THESE TYPES OF IMPROPER WORKMANSHIP BY CRAFT PERSONNEL, COUPLED WITH LACK OF PROPER SUPERVISION OF CRAFT PERSONNEL DURING CONSTRUCTION, HAD THE POTENTIAL FOR SIGNIFICANT QUALITY AND SAFETY IMPACT ON CRITICAL PLANT SYSTEMS AND STRUCTURES. THERE WERE ALLEGATIONS OR CONCERNS INVOLVING CONSTRUCTION PRACTICES THAT WERE NEITHER SUBSTANTIATED NOR REFUTED. THESE WERE NOT INCLUDED IN THE ABOVE CONCLUSION, AND ARE UNRESOLVED QA/QC ISSUES. THERE WERE ONLY TWO ISSUES CONSIDERED THAT INVOLVED THE AREA OF TESTING. BOTH OF THESE ISSUES INDICATED THAT THE DEFICIENT PRACTICE WAS NOT FREQUENT ENOUGH TO IMPLY A GENERIC PROBLEM. ONE CONCERN INVOLVED SEVERAL HOT FUNCTIONAL TEST OBJECTIVES THAT WERE NOT MET. THE	CPRT ---- THE SPECIFIC ITEMS LISTED BY TRT HAVE BEEN RESOLVED BY CPRT. THE RESOLUTION IS SUMMARIZED UNDER THE SPECIFIC ALLEGATION THAT LEAD TO THE ISSUE. THE GENERIC IMPLICATIONS OF THESE AND SIMILAR FINDINGS IDENTIFIED BY CPRT EVALUATIONS WERE ALSO EVALUATED AND RESOLVED. A SUMMARY OF THE CPRT WORK IS PROVIDED IN THE FOLLOWING PARAGRAPHS. THE DATA COLLECTED BY CPRT AS PART OF ISAP VII.C PROVIDED A SUFFICIENT BASIS FOR EVALUATING THE OVERALL QUALITY OF CONSTRUCTION OF CPSES. THE REINSPECTIONS AND DOUMENTATION REVIEWS PERFORMED UNDER VII.C ENCOMPASSED MORE THAN 535,000 INSPECTION POINTS AND MORE THAN 95,000 DOCUMENTATION REVIEW POINTS. IN TOTAL, APPROXIMATELY 3,800 ITEMS WERE SUBJECT TO REINSPECTION OR DOCUMENTATION REVIEWS. IN GENERAL, APPROXIMATELY 90 OR MORE ITEMS IN EACH CONSTRUCTION WORK CATEGORY (CWC) WERE SUBJECT TO REINSPECTION OR DOCUMENTATION REVIEW. GIVEN THE LARGE NUMBER OF ITEMS AND POINTS SUBJECT TO REINSPECTION AND DOCUMENTATION REVIEWS, CONCLUSIONS REGARDING THE QUALITY OF CONSTRUCTION COULD BE DRAWN WITH A HIGH DEGREE OF CONFIDENCE. THE RESULTS OF THE REINSPECTIONS AND DOCUMENTATION REVIEWS PERFORMED BY CPRT UNDER ISAP VII.C DEMONSTRATED A HIGH CONFORMANCE RATE BETWEEN THE AS-BUILT ITEMS AND APPLICABLE DESIGN REQUIREMENTS. SPECIFICALLY, MORE THAN 98 PERCENT OF THE INSPECTION POINTS, AND APPROXIMATELY 98 PERCENT OF THE DOCUMENTATION REVIEW POINTS, WERE FOUND TO BE IN CONFORMANCE WITH APPLICABLE DESIGN REQUIREMENTS. FURTHERMORE, THE QUALITY WAS RELATIVELY UNIFORM THROUGHOUT THE VARIOUS DISCIPLINES AND CONSTRUCTION WORK CATEGORIES. FOR EXAMPLE, IN EACH DISCIPLINE, MORE THAN 97 PERCENT OF THE POINTS SUBJECT TO REINSPECTION WERE DETERMINED TO BE IN CONFORMANCE WITH APPLICABLE DESIGN REQUIREMENTS. OF THE 2 PERCENT OF THE INSPECTION AND DOCUMENTATION REVIEW POINTS THAT WERE FOUND TO DEVIATE FROM DESIGN REQUIREMENTS, MORE THAN THREE-FOURTHS WERE DETERMINED TO BE INSIGNIFICANT. BASED UPON VII.C, CPRT CONCLUDED THAT ITS PROGRAM HAS BEEN SUFFICIENT TO IDENTIFY PROGRAMMATIC DEFICIENCIES AFFECTING THE QUALITY OF CONSTRUCTION OF CPSES, AND THAT UPON SATISFACTORY IMPLEMENTATION OF THE CORRECTIVE ACTION FOR DEVIATIONS AND FINDINGS IDENTIFIED BY CPRT, THERE WILL BE REASONABLE ASSURANCE THAT THE SYSTEMS, STRUCTURES AND COMPONENTS OF CPSES WILL MEET THE

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		OTHER DEFICIENT PRACTICE WAS THAT TU ELECTRIC'S METHOD FOR CALCULATING LEAK RATE WAS NOT CONSISTENT WITH TU ELECTRIC'S FSAR COMMITMENT.	SIGNIFICANT, SAFETY-RELATED REQUIREMENTS OF THE OCTOBER 1985 DESIGN (OR LATER APPLICABLE DESIGN). (CER, PART I, PG 8, 9, AND 13). ONE PORTION OF THE QUALITY OF CONSTRUCTION (QOC) COLLECTIVE EVALUATION WAS TO PERFORM AN EVALUATION OF THE FINDINGS TO DETERMINE WHETHER ANY ADDITIONAL CORRECTIVE ACTIONS MIGHT BE WARRANTED. THE CATEGORY OF "CONSTRUCTION IMPLEMENTATION" INCLUDED FINDINGS WHOSE ROOT CAUSES INDICATE FAILURE TO IMPLEMENT WORK PROCESSES THAT WERE APPARENTLY ADEQUATE. THE FINDINGS IN THIS CATEGORY INCLUDED ROOT CAUSES OF LESS-THAN-ADEQUATE CRAFT TRAINING, SUPERVISION, OR ATTENTION TO DETAIL. THERE WAS GENERALLY LITTLE DIRECT EVIDENCE SUPPORTING THE EXISTENCE OF THESE FACTORS; RATHER, CPRT OFTEN INFERRED THEIR EXISTENCE ONLY AFTER OTHER POTENTIAL FACTORS, SUCH AS ENGINEERING SPECIFICATIONS OR PROCEDURES, HAD BEEN ELIMINATED THROUGH INVESTIGATION. THERE WERE EIGHT SPECIFIC FINDINGS INVOLVING EITHER TRAINING OR SUPERVISION. IT WAS CONCLUDED THAT THE ONLY AREA OF FURTHER CONCERN FOR TRAINING WAS ON TASKS OF INTERMEDIATE DIFFICULTY IN THE SUPPORTS DISCIPLINE. AN APPROPRIATE RECOMMENDATION WAS MADE IN THAT AREA. THERE WERE FIVE ADDITIONAL FINDINGS IMPACTING SUPERVISION ONLY. CPRT FOUND THAT, FOR THESE FINDINGS AND THE EIGHT MENTIONED ABOVE, PREVENTIVE ACTIONS REGARDING SUPERVISION WERE NOT CONSISTENTLY RECOMMENDED FOR EACH FINDING. THE FOLLOWING PREVENTIVE ACTION WAS RECOMMENDED: ENSURE THAT A COMPREHENSIVE PROGRAM HAS BEEN ESTABLISHED AND IMPLEMENTED FOR CPSES (INCLUDING TU ELECTRIC AND MAJOR CONTRACTORS) FOR ENSURING CRAFT SUPERVISORY AWARENESS OF THEIR RESPONSIBILITY FOR THE ASSURANCE OF CONSTRUCTION QUALITY AND OF THE ACTIONS THEY ARE EXPECTED TO TAKE IN CARRYING OUT THIS RESPONSIBILITY. RETRAIN SUPERVISORY PERSONNEL, AS NECESSARY, IN THE PERFORMANCE OF THEIR ASSIGNED TASKS. IN EACH AREA, CPRT CONSIDERED WHETHER HARDWARE CORRECTIVE ACTION WAS NECESSARY. FOR THE FIRST TWO AREAS, CPRT CONCLUDED THAT SAFETY-SIGNIFICANT MANIFESTATIONS HAD BEEN DETECTED AND CORRECTED. THE THIRD AREA CONSISTED OF UNRELATED CASES OF INATTENTION TO DETAIL OR ISOLATED CONSTRUCTION ERRORS THAT WERE NOT INDICATIVE OF

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			AN OVERALL PROGRAMMATIC PROBLEM. ONLY SEVEN OF THE TWENTY-FIVE FINDINGS IN THIS CATEGORY WERE EVALUATED TO BE CONSTRUCTION DEFICIENCIES USING THE CONSERVATIVE APPROACH ADOPTED BY CPRT. BASED ON THE ABOVE, CPRT CONCLUDED THAT NO ADDITIONAL CORRECTIVE ACTION WAS WARRANTED FOR EXISTING HARDWARE. (CER, PART III, PG 103-109). CPRT INITIATED EIGHT ISAPs RELATED TO THE CPSES TESTING PROGRAM. CPRT CONCLUDED THAT THE CPSES TESTING PROGRAM AND OTHER ACTIVITIES UNDER THE JURISDICTION OF STARTUP WERE GENERALLY ADEQUATE AND THAT NO ADDITIONAL CORRECTIVE ACTION WAS NECESSARY BEYOND THAT WHICH HAD BEEN TAKEN FOR THE INDIVIDUAL FINDINGS IDENTIFIED BY CPRT. (CER, PART V, PG 12).
SSER: 11 ALLEG: TRT-P5 ITEM: 11.84E	NONCONFORMANCES AND CORRECTIVE ACTIONS. REF PG P-30	TRT --- APPENDIX O (SEC. 3.2.8, PG O-14) OF THE TWENTY ALLEGATIONS AND CONCERNS RELATING TO NONCONFORMANCE REPORT (NCR) ISSUES, FOUR ALLEGATIONS AND CONCERNS WERE SUBSTANTIATED AS FOLLOWS: ALLEGATION AQ-24, HOWEVER, THE ACTIVITY HAS BEEN CORRECTED; ALLEGATION AQ-97, HOWEVER, THE ACTIVITY WAS DONE IN ACCORDANCE WITH PROCEDURES; ALLEGATION AQ-114; AND ALLEGATION AQ-124. THESE MIGHT HAVE GENERIC IMPLICATIONS PERTAINING TO A PARTIAL QA/QC BREAKDOWN. TRT FOUND THAT DURING THE EARLY YEARS OF THE CPSES PROJECT, QC INSPECTORS KEPT LOGS OF ALL JOBS THAT THEY INSPECTED. ADDITIONALLY, A PERSONAL LOG WAS DISCOVERED THAT NOTED SOME ITEMS. IN THE EARLY YEARS, THE INFORMATION IN THE LOG SHOULD HAVE BEEN DOCUMENTED IN INSPECTION REPORTS (IRs) OR NCRs, BUT BECAUSE OF THE LIMITED INFORMATION IN THE LOG, SUCH DOCUMENTATION COULD NOT BE VERIFIED. ALTHOUGH ONLY ONE LOG OF THIS TYPE WAS FOUND, THIS ITEM MIGHT HAVE GENERIC IMPLICATIONS AS EVALUATED BY TRT. TRT ALSO FOUND THAT IN THE PAST, VOIDED NCRs HAD BEEN DESTROYED. ALTHOUGH SOME PROCEDURAL CLARIFICATION WAS NEEDED, THE PRACTICE WAS CORRECTED. WITH RESPECT TO REVIEWS AND CHANGES TO N-5 (ASME) DOCUMENTS IN THE PERMANENT RECORDS VAULT, TRT FOUND THAT SUCH REVIEWS AND CHANGES DID OCCUR, AND WERE CONDUCTED ACCORDING TO PROCEDURE. TRT ALSO FOUND A LACK OF GUIDANCE REGARDING THE LEVEL OF DEFICIENCY REQUIRED TO WRITE AN NCR. TRT ALSO FOUND INSTANCES OF	CPRT ---- THE CPRT EVALUATION OF THE CURRENT TU ELECTRIC AND BROWN & ROOT PROGRAMS FOR THE CONTROL OF NONCONFORMANCES, TREND ANALYSIS, AND CORRECTIVE ACTION DURING IMPLEMENTATION OF ISAP VII.A.2 RESULTED IN THE DETERMINATION THAT THE PROGRAMS ARE ADEQUATE AND ADDRESS THE APPLICABLE PROGRAM ELEMENTS SET FORTH IN THE FSAR AND NRC STANDARD REVIEW PLAN (SRP) PROGRAM. NONCONFORMANCE PROGRAM --------- THE CPRT EVALUATION OF THE HISTORICAL TU ELECTRIC AND BROWN & ROOT QA PROGRAMS FOR THE CONTROL OF NONCONFORMING MATERIALS, PARTS, OR COMPONENTS DURING IMPLEMENTATION OF ISAP VII.A.2 DETERMINED THAT, WITH SOME EXCEPTIONS, THE PROGRAM WAS SUFFICIENTLY DETAILED AND CLEAR TO COMPLY WITH MOST OF THE APPLICABLE REQUIREMENTS. THE PROGRAMS HAVE IMPROVED THROUGHOUT THE COURSE OF CONSTRUCTION. APPROXIMATELY 35,000 NCRs WERE PREPARED FROM THE INCEPTION OF THE PROJECT TO MID-1986. THESE NCRs RESULTED FROM VARIOUS DISCIPLINES AND WORK ACTIVITIES. THE PROGRAM WAS DYNAMIC, AS EVIDENCED BY THE QUANTITY OF CHANGES MADE TO THE NCR PROCEDURES DURING THE COURSE OF THE PROJECT. THESE CHANGING PROCEDURES AND THE QUANTITY OF NCRs, ALONG WITH THE FACT THAT THE NCRs WERE FROM DIFFERENT WORK ACTIVITIES AND SPREAD ACROSS TIME, INDICATED THAT THE NONCONFORMANCE CONTROL PROGRAM WAS A USEFUL, FUNCTIONING PROGRAM THROUGHOUT THE LIFE OF THE PROJECT. TU ELECTRIC HAS INITIATED A PROGRAM TO RE-EXAMINE THE TECHNICAL VALIDITY OF ALL NCRs, INCLUDING BROWN & ROOT NCRs, THAT HAVE BEEN

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		IMPROPER DISPOSITIONING OF NCRs. TRT ALSO FOUND THAT ALTHOUGH SPECIFIC NONCONFORMANCES WERE CORRECTED, THERE WAS NO OVERALL REVIEW BY THE QA ORGANIZATION OF RECURRING PROBLEMS AND LITTLE, IF ANY, PROGRAMMATIC CORRECTIVE ACTION. IN SUMMARY, TRT FOUND A WEAKNESS IN THE NONCONFORMANCE SYSTEM IN RELATION TO CORRECTLY DOCUMENTING PROBLEMS, QA REVIEW OF DOCUMENTATION AND ENTRIES INTO THE CORRECTIVE ACTION SYSTEM IN ORDER TO PREVENT RECURRENCE. APPENDIX P (SEC. 4.5, PG 30 AND 31) TRT IDENTIFIED DEFICIENCIES DURING THE OVERALL REVIEW OF THE NONCONFORMANCE SYSTEM. MOST OF THE DEFICIENCIES RELATED TO IMPLEMENTATION OF THE NCR SYSTEM IN SPECIFIC AREAS; FOR EXAMPLE, COATINGS NCRs THAT WERE DISPOSITIONED "USE-AS-IS" LACKED SUFFICIENT ENGINEERING JUSTIFICATION, AND SOME INSTANCES WERE NOTED IN THE MECHANICAL AND PIPING AREA IN WHICH NCR CORRECTIVE ACTION WAS NOT CONSIDERED SATISFACTORY. THERE WAS ALSO AN INSTANCE OF THE USE OF PIECES OF NONCONFORMING PIPING WHILE ON NCR HOLD. IMPROPER DISPOSITION OF THE NCR ALLOWED THE INSTALLATION OF THE PIPE. TRT ALSO NOTED A GENERIC DEFICIENCY IN THE CORRECTIVE ACTION SYSTEM. SOME OF THE SPECIFIC DEFICIENCIES NOTED WERE: a. THE BROWN & ROOT (B&R) CORRECTIVE ACTION SYSTEM WAS GENERALLY BYPASSED, AS SHOWN IN THE FOLLOWING EXAMPLES: (1) THERE WERE NO DEFINITIVE INSTRUCTIONS TO DESCRIBE THE TYPES OF PROBLEMS THAT REQUIRED CORRECTIVE ACTION. MINIMAL PROCEDURAL INSTRUCTIONS RESULTED IN CORRECTIVE ACTION DECISIONS FREQUENTLY BEING LEFT TO THE JUDGMENT OF THE QA MANAGER. (2) SINCE JUNE 1983, B&R HAD ISSUED NO CORRECTIVE ACTION REQUESTS (CARs), AND WAS SUBSTITUTING MEMOS AND	DISPOSITIONED USE-AS-IS, REPAIR, AND VOID. THESE ACTIONS WILL ADEQUATELY ADDRESS ANY REMAINING CONCERNS REGARDING THE VALIDITY OF PRIOR NCR DISPOSITIONS. CPRT, UNDER ISAP VII.A.2, DETERMINED THAT NCR PROCEDURES PROVIDED ADEQUATE DIRECTIONS TO THE PERSONNEL PERFORMING INSPECTIONS FOR THE PREPARATION OF NCRs. IN GENERAL, THE DIRECTION, ALSO DETAILED IN THE FSAR, WAS TO PREPARE AN NCR IF THE ITEM COULD NOT BE BROUGHT INTO CONFORMANCE (RE-WORKED) THROUGH USUAL CONSTRUCTION PRACTICE OR IF THE ITEM HAD BEEN PREVIOUSLY ACCEPTED IN FINAL INSPECTION. (ISAP VII.A.2 RESULTS REPORT, PG 25 AND 27). BASED UPON THE ABOVE, CPRT CONCLUDED THAT THE TU ELECTRIC AND BROWN & ROOT SYSTEMS FOR CONTROL OF NONCONFORMING ITEMS WAS GENERALLY ADEQUATE AND, IN THE AGGREGATE, HAD PROVIDED A MECHANISM FOR THE IDENTIFICATION, TAGGING, DOCUMENTATION, TRACKING AND CONTROL OF DISCREPANT OR NONCONFORMING CONDITIONS AND, FURTHER, HAD PROVIDED FOR THE CLOSE-OUT RESOLUTION OF SUCH CONDITIONS ON A REASONABLY SOUND BASIS. IN ADDITION, THE NONCONFORMANCE SYSTEMS HAD PROVIDED INPUT DATA FOR TRENDING ANALYSIS AND HAD BEEN USED FOR IDENTIFICATION OF SIGNIFICANT SAFETY CONDITIONS REPORTABLE TO NRC IN ACCORDANCE WITH 10 CFR 50.55(e). PROBLEMS EXISTING IN THESE SYSTEMS AND THEIR IMPLEMENTATION HAVE BEEN CORRECTED, AND ACTION HAS BEEN TAKEN TO PREVENT THEIR RECURRENCE. TREND ANALYSIS PROGRAM --- THE HISTORICAL TU ELECTRIC AND BROWN & ROOT TREND ANALYSIS PROGRAMS WERE IN COMPLIANCE WITH FSAR COMMITMENTS. CORRECTIVE ACTION PROGRAM --- THE HISTORICAL CORRECTIVE ACTION PROGRAMS OF TU ELECTRIC AND BROWN & ROOT WERE EVALUATED BY CPRT UNDER ISAP VII.A.2. CPRT DETERMINED THAT ALTHOUGH SOME PROCEDURES LACKED DETAIL, THE PROGRAM WAS ADEQUATELY IMPLEMENTED. A TOTAL OF FOUR PROBLEMS WERE IDENTIFIED BY CPRT UNDER ISAP II.C, VII.A.7, AND VII.C, FOR WHICH CORRECTIVE ACTION WAS REPORTED TO BE INADEQUATE. FURTHER EVALUATION DETERMINED THAT THESE PROBLEMS WERE MORE INDICATIVE OF CONCERNS WITH THE NONCONFORMANCE, AUDIT, OR SURVEILLANCE PROGRAMS. THE TU ELECTRIC DESIGN DEFICIENCY REPORT (TDDR) SYSTEM (A SHORT-LIVED PROGRAM THAT EXCEEDED APPENDIX B REQUIREMENTS) WAS EVALUATED AS NOT COMPLYING WITH TU ELECTRIC PROCEDURE REQUIREMENTS. THE PROGRAM HAS SINCE BEEN REPLACED BY AN ENGINEERING SYSTEM THAT ADEQUATELY

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		LETTERS OF CONCERN FOR THIS FUNCTION. THIS SHORTCUT HAD BECOME A REGULAR METHOD OF OPERATION AND APPEARED TO BYPASS THE CAR SYSTEM. b. THE TU ELECTRIC CORRECTIVE ACTION SYSTEM WAS POORLY STRUCTURED AND INEFFECTIVE IN THAT: (1) CONTROLLING PROCEDURES WERE BRIEF AND GENERAL. (2) THERE WAS NO TRANSLATION OF FSAR REQUIREMENTS ON TRENDING AND NO DETAILS ON HOW TREND ANALYSES WERE TO BE ACCOMPLISHED. (3) QUARTERLY REPORTS WERE NOT ISSUED IN A TIMELY MANNER. (4) THE METHOD OF CATEGORIZING INSPECTION REPORTS (IRs) AND NCRs BY BUILDING DID NOT ASSURE MEANINGFUL TREND ANALYSIS. (5) A 1984 CAR REPORT IDENTIFIED THREE ITEMS THAT APPEARED TO REQUIRE ACTION; HOWEVER, NONE HAD BEEN TAKEN. (6) CAR 029 WAS USED AS A VEHICLE FOR A SPECIFIC DISPOSITION RATHER THAN FOR GENERIC ACTION, AS INTENDED BY THE CAR SYSTEM. TRT ALSO NOTED THAT APPROXIMATELY FORTY DIFFERENT FORMS AND REPORTS (OTHER THAN NCRs) WERE USED FOR RECORDING DEFICIENCIES. MANY OF THESE FORMS AND REPORTS DID NOT APPEAR TO PROVIDE INFORMATION ENTRY INTO THE CORRECTIVE ACTION SYSTEM TO PREVENT PROBLEM RECURRENCE. IN CONCLUSION, TRT FOUND DEFICIENCIES IN NCR IMPLEMENTATION AND, IN SOME CASES, NCR CORRECTIVE ACTION WAS UNSATISFACTORY. TRT FOUND B&R AND TU ELECTRIC's CORRECTIVE ACTION SYSTEMS POORLY STRUCTURED, INEFFECTIVE, AND POORLY APPLIED.	ADDRESSES APPENDIX B REQUIREMENTS. TRT IDENTIFIED A CONCERN THAT CORRECTIVE ACTION EMPLOYED FOR REINSPECTION OF TYPE 2 SKEWED WELDS MIGHT NOT HAVE BEEN ADEQUATE. THE EVALUATION BY CPRT UNDER ISAP V.A SUPPORTED THE CONCLUSION THAT THE APPLICABLE TECHNIQUE WAS USED AND THAT THERE WAS NOT A WEAKNESS IN THE CORRECTIVE ACTION PROGRAM. CPRT CONCLUDED THAT THE HISTORIC TU ELECTRIC AND BROWN & ROOT PROGRAMS FOR CORRECTIVE ACTION ADEQUATELY ADDRESSED THE APPLICABLE PROGRAM ELEMENTS SET FORTH IN THE FSAR AND SRP. (CER, PART IV, PG 70-75). OVERALL CONCLUSION --- THESE ISSUES WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT. THE PROJECT IS ALSO ADDRESSING RECOMMENDATIONS FOR IMPROVEMENT MADE BY CPRT.
SSER: 11 ALLEG: TRT-P6 ITEM: 11.84F	QC INSPECTION. REF PG P-31	TRT --- APPENDIX P (SEC 4.6, PG P-31) OF PARTICULAR CONCERN WERE THOSE ITEMS FOR WHICH QC INSPECTION WAS INDICATED AS BEING PRIMARILY	CPRT --- CPRT COLLECTIVELY EVALUATED ALL FINDINGS RELATED TO THE CPSES INSPECTION PROGRAM. THESE ITEMS ENCOMPASSED TRT ITEMS. CPRT CONCLUSIONS RESOLVED IMPLICATIONS OF THE TRT ITEMS.

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		RESPONSIBLE AND HAVING A GENERIC IMPACT LEVEL OF 4 (FREQUENT OCCURRENCES THAT HAVE PLANT-WIDE IMPACT). THERE WERE EIGHT SUCH ITEMS. OF LESSER CONCERN WERE THE 27 ADDITIONAL ITEMS THAT INDICATED QC INSPECTION AS A CONTRIBUTING FACTOR FOR LEVEL 4 ITEMS, OR AS EITHER A PRIMARY OR CONTRIBUTING FACTOR FOR LEVEL 3 ITEMS (FREQUENT OCCURRENCES, BUT APPARENTLY CONFINED TO A PARTICULAR AREA OR ITEM). THIRTY-FIVE ITEMS INDICATED TO TRT THAT QC INSPECTION WAS PARTICULARLY DEFICIENT IN THE AREAS OF COATINGS AND MECHANICAL HARDWARE, AND THAT QC INSPECTORS MADE SIGNIFICANT ERRORS IN A NUMBER OF ADDITIONAL SPECIFIC ITEMS. FURTHER, QC INSPECTION PROBLEMS WERE GENERALLY ACCOMPANIED BY AND ASSOCIATED WITH CONSTRUCTION/TESTING PROBLEMS (SEE ITEM 11.84D). QC INSPECTORS IN MANY INSTANCES FAILED TO FOLLOW DESIGN DOCUMENTS AND QUALITY PROCEDURES FOR INSPECTION. OF CONCERN WAS THE POTENTIAL FOR CRITICAL INSTALLATIONS TO BE INADEQUATELY CONSTRUCTED AND IMPROPERLY REPRESENTED ON DOCUMENTS IN THE PLANT PERMANENT RECORDS VAULT AS WELL AS INACCURATE ACCOUNTING OF SAFETY-RELATED SYSTEMS AND STRUCTURES FOR INPUT USED IN STRESS ANALYSES BY THE ENGINEERING GROUP. IN CONCLUSION, TRT CONSIDERED THE SITE QC INSPECTION PROGRAM TO BE LESS THAN FULLY EFFECTIVE IN MONITORING, DETECTING, AND REPORTING DEFICIENCIES THAT HAD OR COULD HAVE A SIGNIFICANT SAFETY IMPACT ON THE PLANT.	BASED UPON ITS EVALUATION OF THE CURRENT AND HISTORICAL QA/QC INSPECTION PROGRAMS AT CPSES, CPRT CONCLUDED THE FOLLOWING: - CURRENT QA INSPECTION PROGRAMS ARE ADEQUATE UNDER 10 CFR 50, APPENDIX B, CRITERION X. - HISTORICAL QA INSPECTION PROGRAMS, WITH THE EXCEPTION OF THE BAHNSON PROGRAM, WERE GENERALLY ADEQUATE, BUT THERE WERE PROBLEMS IN SPECIFIC AREAS. - PROBLEMS WITH HISTORIC QA INSPECTION PROGRAMS HAVE BEEN CORRECTED AND ACTION HAS BEEN TAKEN TO ENSURE THAT INSTALLED HARDWARE AFFECTED BY THESE PROBLEMS IS ADEQUATE. (CER, PART IV, PG 46-55).
SSER: 11 ALLEG: TRT-P7 ITEM: 11.84G	AUDITS AND REPORTING. REF PG P-31	TRT --- APPENDIX P (SEC 4.7, PG P-31 THRU P-34) IN THE TRT's OVERALL ASSESSMENT OF TU ELECTRIC's AUDIT PROGRAM, EMPHASIS WAS PLACED ON EVALUATING THE ADMINISTRATION OF THE AUDIT PROGRAM, MANAGEMENT's ACTION TO REVIEW THE STATUS AND ADEQUACY OF THE QA PROGRAM, AND FOLLOWUP ON FINDINGS IDENTIFIED BY INTERNAL (TU ELECTRIC) AND EXTERNAL AUDIT TEAMS (NRC AND CONSULTANTS).	CPRT ---- THE TU ELECTRIC AUDIT PROGRAM WAS EVALUATED BY CPRT UNDER ISAP VII.A.4. CPRT DETERMINED THAT THE CURRENT AUDIT PROGRAM WAS ADEQUATE AND THAT EARLIER PROBLEMS HAD BEEN CORRECTED. THE PROGRAM ADEQUATELY ADDRESSED THE APPLICABLE ELEMENTS SET FORTH IN THE FSAR AND NRC STANDARD REVIEW PLAN (SRP). WITH RESPECT TO THE HISTORICAL TU ELECTRIC AUDIT PROGRAM, CPRT CONCLUDED THAT THE PROGRAM WAS GENERALLY ADEQUATE. HOWEVER, AS DESCRIBED BELOW, THERE WERE A NUMBER OF SPECIFIC PROBLEMS THAT REQUIRED CORRECTION.

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		TU ELECTRIC's AUDIT PROGRAM CONSISTED OF INTERNAL AND EXTERNAL AUDITS OF DESIGN, CONSTRUCTION, ENGINEERING, AND PROCUREMENT ACTIVITIES. TU ELECTRIC ASSUMED RESPONSIBILITY FOR EXTERNAL AUDITS OF VENDORS. NRC REGION IV FOUND THAT TU ELECTRIC's AUDIT PROCEDURES DID NOT COMPLY WITH NRC REQUIREMENTS, AND THAT THE PROGRAM WAS NOT IMPLEMENTED IN ACCORDANCE WITH PROCEDURES. THE LACK OF AN ESTABLISHED AUDIT PROGRAM WAS ALSO SUBSTANTIATED BY NRC REGION IV. FOR EXAMPLE, NRC REGION IV REPORT NO. 50-445/84-32 CITED TU ELECTRIC FOR FAILURE TO ESTABLISH AND IMPLEMENT A COMPREHENSIVE SYSTEM OF PLANNED AND PERIODIC AUDITS. NON-COMPLIANCES IDENTIFIED WERE: ANNUAL AUDITS WERE NOT ADEQUATELY ADDRESSED BY AUDIT IMPLEMENTATION PROCEDURES; PLANNING AND STAFFING TO PERFORM 1983 AUDITS WERE INADEQUATE; THE WESTINGHOUSE SITE ORGANIZATION PERFORMING NUCLEAR STEAM SUPPLY SYSTEM (NSSS) ENGINEERING SERVICES WAS NOT AUDITED BY TU ELECTRIC FROM 1977 THROUGH 1981; AND AUDITS OF VENDORS THAT MANUFACTURE OR FABRICATE PARTS, COMPONENTS, AND EQUIPMENT FOR SAFETY-RELATED SYSTEMS WERE NOT CONDUCTED IN COMPLIANCE WITH ANNUAL OR OTHER APPLICABLE REQUIREMENTS DATING BACK TO AUGUST 1978. ASSESSMENTS BY THE MISCELLANEOUS AND MECHANICAL AND PIPING GROUPS CONCURRED WITH THE QA/QC GROUP THAT THE AUDIT FREQUENCY OF VENDORS DID NOT COMPLY WITH ANSI N45.2.12 REQUIREMENTS. REVIEW OF THE PAST ADMINISTRATION OF THE AUDIT PROGRAM DISCLOSED THAT DURING 1981 AND 1982, THE HEIGHT OF CONSTRUCTION, THE AUDIT STAFF CONSISTED OF FOUR AUDITORS. FROM 1982 TO 1984, THE AUDIT STAFF INCREASED FROM 4 TO 12. ALSO, ON OCCASIONS, INDIVIDUALS PARTICIPATING ON THE AUDIT TEAMS WERE NOT QA AUDITORS. AS SUCH, A POTENTIAL EXISTED TO COMPROMISE THEIR INDEPENDENCE. TRT REVIEWED THE TECHNICAL BACKGROUND, EXPERIENCE, AND TRAINING OF AUDITORS, AS WELL AS THE QUALITY OF AUDIT REPORTS. TRT DETERMINED AUDITOR STAFFING AND QUALIFICATIONS TO BE QUESTIONABLE, WHICH RENDERED THE AUDIT RESULTS FOR 1981 THROUGH 1983 POTENTIALLY INEFFECTIVE. TRT AND NRC REGION IV REVIEWED THE SCOPE OF THE QA	UNDER ISAP VII.A.4, CPRT IDENTIFIED FOURTEEN QA/QC PROGRAM DEVIATIONS IN THE AUDIT PROGRAM IN THE FOLLOWING AREAS: DEFINITION OF RESPONSIBILITIES IN CORPORATE-LEVEL DOCUMENTS (e.g., FSAR); AUDIT SCHEDULING (e.g., FREQUENCY OF REQUIRED AUDITS); TIME OF VENDOR AUDIT INITIATION; AUDIT EVALUATION OF THE COMPLIANCE OF IMPLEMENTING PROCEDURES TO THE REQUIREMENTS OF CONTROLLING DOCUMENTS; UTILIZATION OF UNCERTIFIED PERSONNEL AS ACTING AUDIT TEAM LEADERS; FAILURE OF AUDIT REPORTS TO INCLUDE ALL REQUIRED INFORMATION; FOLLOWUP AND CLOSEOUT OF AUDIT DEFICIENCIES; AND CERTIFICATION OF SOME LEAD AUDITORS. THESE DEVIATIONS WERE EVALUATED UNDER ISAP VII.A.4 WHERE IT WAS DETERMINED THAT INDIVIDUALLY THEY DID NOT HAVE AN ADVERSE EFFECT ON THE AUDIT PROGRAM. HOWEVER, THE ACCUMULATION OF THESE DEVIATIONS WAS DETERMINED TO BE A TREND ADVERSE TO THE QUALITY OF THE AUDIT PROGRAM. THE ROOT CAUSE OF THIS TREND WAS DETERMINED TO BE AN APPARENT LACK OF FULL APPRECIATION BY PREVIOUS TU ELECTRIC MANAGEMENT OF THE ROLE OF AN EFFECTIVE QA AUDIT PROGRAM IN ENSURING THE OVERALL EFFECTIVENESS OF THE CPSES QA PROGRAM. BASED ON THE DISCUSSION BELOW, CPRT CONCLUDED THAT UNTIL TRT FOCUSED ATTENTION ON THE AUDIT PROGRAM AND NRC REGION IV ISSUED A NOTICE OF VIOLATION, RESPONSIBLE MANAGEMENT (UPPER MANAGEMENT IN THE LINE AND QA ORGANIZATIONS AND SENIOR MANAGEMENT) HAD NOT UNDERSTOOD AND/OR APPRECIATED THE VALUE OF THE DATA IT HAD ACQUIRED. CPRT RESULTS DESCRIBED ABOVE CONFIRMED THE LACK OF EFFECTIVENESS OF THE AUDIT PROGRAM TO IDENTIFY AND CORRECT PROGRAM WEAKNESSES PREVIOUSLY IDENTIFIED BY EXTERNAL SOURCES SUCH AS THE CAT, TRT, AND MAC. THERE IS EVIDENCE THAT IN SOME CASES THE AUDIT PROGRAM DID IDENTIFY SPECIFIC PROGRAM AREAS THAT WERE NOT SATISFACTORY, BUT NEITHER THE AUDIT ORGANIZATION NOR AFFECTED MANAGEMENT RECOGNIZED THE APPARENT UNDERLYING CAUSES. THIS RESULTED IN INADEQUATE AND INEFFECTIVE, AND SOMETIMES NO, CORRECTIVE ACTION BEING TAKEN FOR IDENTIFIED AUDIT DEFICIENCIES AND THEIR UNDERLYING CAUSES. CPRT, UNDER ISAP VII.A.4, CONCLUDED THAT THE LACK OF ANNUAL VENDOR AUDITS HAD NO ADVERSE EFFECT ON THE AUDIT PROGRAM BECAUSE OF OTHER DATA AVAILABLE FROM WHICH TO EVALUATE VENDORS. BASED ON THE RESULTS OF SUBSEQUENT CPRT ACTIVITIES, CPRT DETERMINED THAT THE ABOVE CONCLUSION WERE VALID ONLY FOR OFF-SITE VENDORS. FOR ON-SITE VENDORS (CONTRACTORS), THERE WAS GENERALLY LITTLE OR NO DATA AVAILABLE, OTHER THAN FROM THE INFREQUENT AUDITS, FROM WHICH TO

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		PROGRAM AUDITED DURING 1983. OF APPROXIMATELY 650 SAFETY-RELATED PROCEDURES, 165 (25% OVERALL) WERE AUDITED. IN LOOKING AT QUALITY PROCEDURES, TU ELECTRIC AUDITED 24% OF TUGCO's IMPLEMENTING PROCEDURES AND 39% OF BROWN & ROOT's PROCEDURES FOR A COMPOSITE 32% AUDIT RATE. ALTHOUGH AUDITS ON A SAMPLING BASIS WERE ACCEPTABLE, THERE WAS NO EVIDENCE THAT ALL SAFETY-RELATED AREAS WERE AUDITED. THE AUDITS DID NOT ENCOMPASS ALL ASPECTS OF THE QA PROGRAM IN ORDER TO DETERMINE EFFECTIVENESS. WITH RESPECT TO AUDIT CORRECTIVE ACTION FOLLOWUP, TRT LEARNED THAT TU ELECTRIC QA HAD NOT BEEN VERIFYING THAT CORRECTIVE ACTION ON PREVIOUS AUDIT FINDINGS HAD BEEN ACCOMPLISHED. FOR EXAMPLE, AUDIT TCP-111, INITIATED TO VERIFY CORRECTIVE ACTIONS ON PREVIOUS AUDIT FINDINGS, WAS STARTED PRIOR TO THE TRT's REVIEW. TU ELECTRIC EMPHASIZED THAT TCP-111 BE CONSIDERED A "PUNCH LIST OF COMPLETION TASKS" TO VERIFY THAT CORRECTIVE ACTION HAD BEEN IMPLEMENTED AND NOT AN ATTEMPT TO REWRITE OR CHANGE PREVIOUS AUDIT FINDINGS. ANOTHER SPECIFIC EXAMPLE OF INEFFECTIVE FOLLOWUP ACTION WAS FOUND THAT PERTAINED TO A DEFICIENCY IDENTIFIED IN AUDIT TCP-23, PERFORMED IN SEPTEMBER 1981. AUDIT TCP-68, CONDUCTED IN MARCH 1983, ATTEMPTED TO VERIFY CORRECTIVE ACTION OF TCP-23's AUDIT FINDING, BUT LOGS THAT WOULD DOCUMENT THE CORRECTIVE ACTION HAD BEEN DESTROYED. A NEW DEFICIENCY WAS WRITTEN AT THAT TIME AND THE RESPONSE WAS ACCEPTED, BUT THE CORRECTIVE ACTION IMPLEMENTATION WAS STILL UNVERIFIED. IN CORRELATING NONCONFORMANCE REPORTING TO THE AUDIT FINDING/CORRECTIVE ACTION REPORTING TRACKING SYSTEM, TRT NOTED THAT DURING 1983, 18 NCRs IDENTIFIED THE NEED TO RETRAIN CONSTRUCTION PERSONNEL IN THE CONTENT AND REQUIREMENTS OF QA PROCEDURES. TRT FOUND THAT TU ELECTRIC CORRECTIVE ACTION REQUEST CAR-024, WHICH DEALT WITH INADEQUATE CONSTRUCTION TRAINING AND RECORDS, WAS OPEN FOR 12 MONTHS. AFTER CAR-024 WAS CLOSED, FIVE OTHER CARs IDENTIFIED INADEQUATE TRAINING OF CONSTRUCTION PERSONNEL. TU ELECTRIC CONSTRUCTION, STARTUP/TURNOVER SURVEILLANCE GROUP IDENTIFIED THE ABOVE CONDITIONS IN CAR-009, DATED APRIL 9, 1984, WHICH HAD NOT BEEN CLOSED AT THE TIME OF THE TRT	JUDGE THEIR PERFORMANCE. IT IS LIKELY THAT MORE FREQUENT AND MORE EFFECTIVE AUDITS OF SITE CONTRACTORS, PARTICULARLY BAHNSON, WOULD HAVE PROVIDED MANAGEMENT WITH ADDITIONAL DATA TO CAUSE CORRECTIVE ACTION TO BE TAKEN IN A MORE TIMELY MANNER. ALSO, HAD THERE BEEN A COMPREHENSIVE SURVEILLANCE PROGRAM OVER SITE VENDOR ACTIVITIES, IN-PROCESS DATA WOULD HAVE BEEN AVAILABLE FOR EVALUATION AND APPROPRIATE ACTION. CPRT, UNDER ISAP VII.C, EVALUATED THE QUALITY OF WORK PERFORMED BY ON-SITE CONTRACTORS. WITH THE EXCEPTION OF BAHNSON, CPRT DETERMINED THAT THIS WORK WAS ADEQUATE. THUS, ANY WEAKNESS IN THE TU ELECTRIC AUDIT PROGRAM COVERING THESE CONTRACTORS HAD NO DISCERNIBLE ADVERSE AFFECT UPON THE QUALITY OF THEIR WORK. BAHNSON HAS BEEN TERMINATED, AND TU ELECTRIC IS IMPLEMENTING AN EXHAUSTIVE EVALUATION AND CORRECTIVE ACTION PROGRAM FOR BAHNSON WORK. CHANGES HAVE BEEN INCORPORATED IN THE AUDIT PROGRAM AND ORGANIZATION THAT HAVE RESULTED IN AN EFFECTIVE PROGRAM. THE OVERALL EFFECTIVENESS OF THE CURRENT TU ELECTRIC AUDIT PROGRAM WILL BE MAINTAINED THROUGH THE ON-GOING ACTIVITIES OF THE SENIOR MANAGEMENT OVERVIEW COMMITTEE AND WILL BE REPORTED TO EXECUTIVE MANAGEMENT AS A PART OF THE ANNUAL ASSESSMENT OF THE QA PROGRAM. AN ADDITIONAL EVALUATION WILL BE ACCOMPLISHED DURING THE ANNUAL EXTERNAL REVIEW PERFORMED FOR THE EXECUTIVE VICE-PRESIDENT, NEO. BASED UPON THE ABOVE, CPRT CONCLUDED THAT PROBLEMS STEMMING FROM WEAKNESSES IN THE HISTORICAL TU ELECTRIC QA AUDIT PROGRAM OCCURRED IN SPECIFIC IDENTIFIABLE AREAS AND HAVE BEEN CORRECTED, AND ACTION HAS BEEN TAKEN TO PRECLUDE THE RECURRENCE OF THESE PROBLEMS. (CER, PART IV, PG 79-83).

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INSPECTION. THIS FURTHER SUPPORTED THE TRT FINDING OF INADEQUATE FOLLOWUP AND CORRECTIVE ACTION OF AUDIT FINDINGS.

TRT FOUND THAT TU ELECTRIC MANAGEMENT HAD FAILED TO PERIODICALLY REVIEW THE STATUS AND ADEQUACY OF THEIR QA PROGRAM. THIS WAS CONFIRMED BY NRC REGION IV (IR 50-445/84-32). TU ELECTRIC REPRESENTATIVES STATED THAT THERE HAD BEEN NO REGULAR ASSESSMENTS OR REVIEWS OF THE ADEQUACY OF THE TOTAL QA PROGRAM BY UPPER MANAGEMENT, AS REQUIRED IN CRITERION II OF 10 CFR 50, APPENDIX B, AND AS COMMITTED TO IN THE FSAR.

WITH RESPECT TO FOLLOW-UP CORRECTIVE ACTION FOR PREVIOUS FINDINGS CITED AGAINST THE AUDIT PROGRAM BY NRC AND TU ELECTRIC CONSULTANT AUDIT/INSPECTION TEAMS, TRT FOUND TU ELECTRIC'S CORRECTIVE ACTION FOLLOWUP TO BE NOT FULLY EFFECTIVE. THE FRED LOBBIN REPORT (A TU ELECTRIC CONSULTANT), DATED FEBRUARY 1982, IDENTIFIED FOUR MAJOR FINDINGS: (1) LEVEL OF EXPERIENCE WITHIN THE TU ELECTRIC QA ORGANIZATION WAS LOW; i.e., COMMERCIAL NUCLEAR PLANT DESIGN AND CONSTRUCTION QA EXPERIENCE; (2) STAFFING FOR THE AUDIT AND SURVEILLANCE FUNCTIONS WAS INADEQUATE; (3) THE NUMBER AND SCOPE OF DESIGN AND CONSTRUCTION AUDITS CONDUCTED BY TU ELECTRIC QA TO DATE HAD BEEN LIMITED; AND (4) QA MANAGEMENT HAD NOT DEFINED CLEARLY THE OBJECTIVES FOR THE SURVEILLANCE PROGRAM RESULTING IN A PROGRAM WHICH, IN THE AUTHOR'S OPINION, WAS PRESENTLY INEFFECTIVE. FINDINGS (2), (3) AND (4) HAD NOT BEEN ADEQUATELY ADDRESSED BY TU ELECTRIC. (REGION IV REPORT NO. 50-445/84-32.).

FOLLOWING THE LOBBIN REPORT, NRC PERFORMED A CONSTRUCTION ASSESSMENT (CAT) (IR 445/83-18; 446/83-12, DATED APRIL 11, 1983) AND INCLUDED A REVIEW OF THE TU ELECTRIC AUDIT PROGRAM AT CORPORATE OFFICES. THE ASSESSMENT INCLUDED A REVIEW OF 18 AUDITS (CONDUCTED BETWEEN 1978 AND EARLY 1983), AUDITOR QUALIFICATIONS, AUDIT PLANNING AND SCHEDULING, AUDIT REPORTING AND FOLLOWUP, AND AUDIT PROGRAM EFFECTIVENESS. THE REPORT CONCLUDED THAT WEAKNESSES EXISTED IN THE ESTABLISHED QA AUDIT PROGRAM INCLUDING THE SCHEDULING AND FREQUENCY OF AUDITS, THE LACK OF

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		EFFECTIVE MONITORING OF THE CONSTRUCTION PROGRAM, AND THE LACK OF EFFECTIVE RESOLUTION OF CERTAIN FINDINGS. THE INSPECTION ALSO INDICATED THAT THE QA PROGRAM SHOULD HAVE BEEN MORE EFFECTIVE. DURING THE EVALUATION OF ALLEGATIONS AND CONCERNS, TRT OBSERVED THAT THE AUDIT FUNCTION HAD NOT ALWAYS IDENTIFIED QA PROGRAM BREAKDOWNS, OR, IF REPORTED, EFFECTIVE CORRECTIVE ACTION WAS NOT INSTITUTED TO PREVENT RECURRENCE. TYPICAL EXAMPLES WERE: (1) UNTIMELY REPORTING OF SIGNIFICANT CONSTRUCTION DEFICIENCIES FOR 10 CFR 50.55(e) ITEMS, (2) QA BREAKDOWN IN DOCUMENT CONTROL FOR SATELLITE 306 WHICH WAS NOT REPORTED TO NRC, AND (3) RECORD REVIEWERS REVIEWING AND ACCEPTING DOCUMENTATION FOR WORK THEY PREVIOUSLY PERFORMED AS INSPECTORS. BASED ON FINDINGS AND OBSERVATIONS, TRT CONCLUDED THAT THE QA AUDIT AND REPORTING PROGRAM HAD AND CONTINUED TO EXHIBIT DEFICIENCIES. OVER A SIGNIFICANT PERIOD OF TIME, RECURRING DEFICIENCIES INCLUDED: INADEQUATE STAFFING DURING PEAK PERIODS; FAILURE BY MANAGEMENT TO REVIEW THE QA PROGRAM FOR EFFECTIVENESS; PROCEDURAL AND IMPLEMENTATION INADEQUACIES; QUESTIONABLE QUALIFICATIONS AND CAPABILITIES; INCOMPLETE ASSESSMENT OF THE QA PROGRAM ON AN ANNUAL BASIS; INADEQUATE CORRECTIVE ACTION TO PREVENT RECURRENCE OF IDENTIFIED DEFICIENCIES AND INSUFFICIENT MANAGEMENT DIRECTION AND UNDERSTANDING. IN SUMMATION, TRT FOUND THE PAST AUDIT AND REPORTING SYSTEM LESS THAN ADEQUATE, AND THE AUDIT AND REPORTING PROGRAM AT THE TIME OF THE TRT REVIEW WAS QUESTIONABLE.	
SSER: 11 ALLEG: TRT-P8 ITEM: 11.84H	INADEQUATE PROCEDURES. REF PG P-34	TRT --- CRITERION V TO 10 CFR 50, APPENDIX B, REQUIRES THAT QA/QC PROCEDURES BE WRITTEN TO PRESCRIBE ACTIVITIES AFFECTING QUALITY. TRT FOUND THAT PROCEDURES IN SOME AREAS DID NOT COMPLY WITH THIS GUIDELINE. FOR EXAMPLE, MATERIAL CONTROL PROCEDURES DID NOT ADEQUATELY ADDRESS REQUIREMENTS FOR PHYSICAL INVENTORY CONTROL, MATERIAL TRACEABILITY, MATERIAL HANDLING, AND SEGREGATION OF	CPRT ---- CPRT EVALUATED THE CURRENT AND HISTORICAL TU ELECTRIC, BROWN AND ROOT, AND MAJOR SUBCONTRACTORS QA PROGRAMS FOR COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF CRITERION V. BASED UPON THE EVALUATION OF THE CURRENT AND HISTORICAL QA PROGRAM FOR INSTRUCTIONS, PROCEDURES AND DRAWINGS AT CPSES, CPRT CONCLUDED THE FOLLOWING: - CURRENT QA PROGRAMS ARE ADEQUATE UNDER 10 CFR 50, APPENDIX

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		PAINTS. TU ELECTRIC REQUIREMENTS FOR THE AUTHORIZED NUCLEAR INSPECTOR's INVOLVEMENT IN THE TU ELECTRIC INSPECTION PROCESS WERE UNCLEAR. QUALITY CONTROL PERSONNEL INSPECTED WITHOUT WRITTEN PROCEDURES OR FORMAL ACCEPT/REJECT CRITERIA. SOME INSPECTION PROCEDURES LACKED COMPREHENSIVE INSPECTION AND REINSPECTION CRITERIA FOR INSPECTORS. REQUIREMENTS FOR REINSPECTION OF REPAIR WORK WERE NOT CLEAR. TRT FOUND THAT CONSTRUCTION PROCEDURES PROVIDED INADEQUATE INSTRUCTIONS TO CRAFT AND QA PERSONNEL FOR INSTALLATION OF TEMPORARY SUPPORTS, STEAM GENERATOR BOLTING, JAM NUTS, THREAD ENGAGEMENT, RICHMOND ANCHOR BOLT INSERTS, REPAIR OF MISDRILLED HOLES/PLUG WELDING, MIXING OF PAINTS, AND PROTECTION OF UNPAINTED THREADS AND SURFACES. PROCEDURES DID NOT SPECIFY DESIGN STANDARDS FOR FABRICATED THREADS, INTERCHANGEABILITY OF VALVE PARTS, AND REACTOR VESSEL CLEANLINESS REQUIREMENTS. THERE WERE INADEQUATE WELDING PROCEDURES TO PREVENT LOOP SHRINKAGE DURING WELDING OF THIN-WALL STAINLESS STEEL PIPE. PROCEDURES DID NOT PROVIDE CLEAR PRECAUTIONARY DIRECTIONS REGARDING PROHIBITED CONSTRUCTION METHODS, SUCH AS UNAUTHORIZED WELDING TO REBAR AND RESTRICTED USE OF VARIOUS TOOLS. REQUIREMENTS TO PAINT THE THREADS OF COMPONENT SUPPORT BOLTING CONTRADICTED REQUIREMENTS OF ANOTHER PROCEDURE TO MAINTAIN THREADS FREE OF EXTRANEOUS MATERIALS. IN SUMMARY, TRT CONCLUDED THAT CONSTRUCTION AND INSPECTION PROCEDURES IN SOME AREAS WERE INADEQUATE, CONTRADICTORY, UNCONTROLLED, OR NONEXISTENT.	B, CRITERION V. - HISTORICAL QA PROGRAMS, WITH THE EXCEPTION OF THE BAHNSON PROGRAM, WERE GENERALLY ADEQUATE, BUT THERE WERE PROBLEMS IN SPECIFIC AREAS. - PROBLEMS WITH HISTORICAL QA PROGRAMS HAVE BEEN OR ARE BEING CORRECTED, AND ACTION IS BEING TAKEN TO PRECLUDE RECURRENCE OF THESE PROBLEMS. (CER, PART IV, PG 23-30). THESE ISSUES WILL BE RESOLVED BY THE CPRT ENDORSED CORRECTIVE ACTIONS BEING UNDERTAKEN BY THE PROJECT.
SSER: 11 ALLEG: TRT-P9 ITEM: 11.84I	OVERALL ASSESSMENT AND CONCLUSIONS (REF PG P-34)	TRT --- APPENDIX P (SEC 4.9, PG P-34 AND P-35) APPENDIX P CONSOLIDATED ALL QUALITY ISSUES IDENTIFIED BY ALL TRT GROUPS IN RELATION TO EIGHT QUALITY ATTRIBUTES. THE SCOPE OF THE TRT REVIEW AND INSPECTION WAS LIMITED TO QA/QC CONCERNS RAISED BY THE ALLEGATIONS. APPENDIX P FOCUSED ON PROBLEM AREAS THAT NEEDED FURTHER IDENTIFICATION. THIS IDENTIFICATION OF	CPRT ---- REVISION 3 OF THE CPRT PROGRAM PLAN WAS ISSUED ON JANUARY 27, 1986. THIS REVISION INCLUDED SUBSTANTIVE CHANGES THAT ADDRESS COMMENTS AND QUESTIONS FROM THE STAFF (INCLUDING SSER-11, APPENDIX O), AS WELL AS CHANGES THAT RESULTED FROM CPRT INTERNAL AUDITS OF THE PROGRAM. (TU ELECTRIC LETTER CPRT-207, V.S. NOONAN FROM W.G. COUNSIL, JANUARY 27, 1987). THE CPRT SCOPE WAS EXPANDED IN REV.3 TO INCLUDE ISSUES RAISED BY

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		PROBLEM AREAS WILL FACILITATE THE PREPARATION OF A CORRECTIVE ACTION PLAN, THAT SHOULD PROVIDE REASONABLE ASSURANCE THAT THE FACILITY HAS BEEN PROPERLY CONSTRUCTED. BASED ON ITS ASSESSMENT OF THE TOTAL TRT EFFORT, TRT FOUND THAT QA/QC PROBLEMS AT COMANCHE PEAK APPEARED TO BE THE RESULT OF THE FOLLOWING CONDITIONS THAT EXISTED PRIOR TO 1984: a. TU ELECTRIC SENIOR MANAGEMENT WAS NOT ACTIVELY INVOLVED IN SITE QA/QC ACTIVITIES. b. THE TRAINING AND QUALIFICATION OF QA/QC, CRAFT, AND OTHER PERSONNEL WERE NOT ADMINISTERED AND MONITORED EFFECTIVELY. c. DESIGN ENGINEERING ACTIVITIES WERE NOT EFFECTIVE IN PROVIDING CRAFT AND QA PERSONNEL WITH ADEQUATE PROCEDURES, INSTRUCTIONS, AND OTHER DESIGN DOCUMENTS. d. THE CONTROL OF DOCUMENTS, AND SUBSEQUENTLY OF RECORDS, WAS REPLETE WITH RECURRENT DEFICIENCIES. e. SOME CRAFT PERSONNEL APPEARED TO BE INSENSITIVE TO QA/QC CONCERNS AT TIMES, POSSIBLY BECAUSE OF LACK OF TRAINING, TIGHT SCHEDULES, AND EXCESSIVE SCHEDULE EMPHASIS BY CONSTRUCTION MANAGEMENT. f. QUALITY MANAGEMENT WAS LAX IN ITS RESPONSIBILITIES TO DIRECT AND OVERSEE AN EFFECTIVE SITE QUALITY PROGRAM. g. SOME QC PERSONNEL EXHIBITED REPEATED LAPSES IN EFFECTIVELY EXECUTING THEIR RESPONSIBILITIES FOR INSPECTION ACTIVITIES. THE PATTERN OF FAILURES BY QA AND QC PERSONNEL TO DETECT AND DOCUMENT DEFICIENCIES SUGGESTED AN INEFFECTIVE BROWN & ROOT (B&R) AND TU ELECTRIC INSPECTION SYSTEM. THIS PATTERN, COUPLED WITH (a) PAST PROBLEMS IN THE DOCUMENT CONTROL SYSTEM, (b) DEFICIENCIES IN THE QC QUALIFICATION PROGRAM, (c)	OTHER EXTERNAL SOURCES, AND THE CHARTER WAS EXPANDED TO INCLUDE A MANDATE OF ASSURING TU ELECTRIC MANAGEMENT OF THE SAFETY OF THE PLANT REGARDLESS OF THE EXTENT TO WHICH ISSUES MIGHT HAVE BEEN RAISED BY EXTERNAL SOURCES. THIS RESULTED IN THE DEVELOPMENT OF TWO COMPREHENSIVE CPRT SELF-INITIATED EVALUATION PROGRAMS IN DESIGN AND CONSTRUCTION. (CPRT PROGRAM PLAN, REV.3, PART I, PG 1-4). NRC REPORTED ITS REVIEW OF REV.3 IN SSER-13. THE CPRT SCOPE WAS LATER MODIFIED TO, 1) REDIRECT THE DAP, A MAJOR SELF-INITIATED ELEMENT OF THE CPRT PROGRAM, IN RESPONSE TO THE TU ELECTRIC COMMITMENT TO THE CORRECTIVE ACTION PROGRAM, WITH ITS COMPREHENSIVE DESIGN VALIDATION COMPONENT, 2) REVISE PLAN DETAILS BASED ON EXPERIENCE OVER SEVENTEEN MONTHS AND 3) MODIFY THE CPRT APPROVAL TO OVERSIGHT OF PROJECT CORRECTIVE ACTIONS. (CPRT PROGRAM PLAN, REV. 4, FOREWARD, PG 1-8) SUBSTANTIAL CHANGES IN MANAGEMENT PERSONNEL WERE MADE IN 1985. THESE CHANGES AND THE RESULTING CHANGES IN MANAGEMENT APPROACH WERE REPORTED IN A MEMORANDUM TO THE ASLB, "APPLICANTS CURRENT MANAGEMENT VIEWS AND MANAGEMENT PLAN FOR RESOLUTION OF ALL ISSUES", JUNE 28, 1985. (SEE ALSO FSAR AMENDMENT NO.55). THE RESULTS OF THE OVERALL CPRT EVALUATION OF THE CPSES QA/QC PROGRAM ARE SUMMARIZED UNDER ITEM 11.83K. THESE EVALUATIONS ENCOMPASS EACH OF THE SPECIFIC CONDITIONS NOTED BY TRT AND RESOLVE THE GENERIC IMPLICATIONS OF EXTERNAL SOURCE ISSUES AND CPRT IDENTIFIED FINDINGS.

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		INEFFECTIVENESS OF THE QUALITY AUDIT AND SURVEILLANCE SYSTEMS, (d) A RUDIMENTARY AND INEFFECTIVE TRENDING AND CORRECTIVE ACTION SYSTEM, (e) QC PROBLEMS AS SHOWN IN QA/QC CATEGORY 8, AQ-50; AND (f) INSTANCES OF IMPROPER WORKMANSHIP OF HARDWARE AS FOUND BY ALL OF THE TRT GROUPS, CHALLENGED THE ADEQUACY OF THE QC INSPECTION PROGRAM AT CASES ON A SYSTEM-WIDE BASIS. CORRECTIVE ACTION WOULD REQUIRE HIGH-LEVEL MANAGEMENT ATTENTION AND A NEW MANAGEMENT EMPHASIS ON THE IMPORTANCE OF QUALITY AS A VITAL ELEMENT OF AN ADEQUATE CONSTRUCTION PROGRAM. ACTION REQUIRED --- AS TRT NOTED ITS RESULTS WERE BASED ON A BIASED SAMPLE IN THE SENSE THAT THE SAMPLE WAS INITIALLY DEVELOPED FROM ALLEGATIONS, ADDITIONAL ITEMS BROUGHT TO THE TRT's ATTENTION, AND ITEMS FOUND BY TRT. NEVERTHELESS, TRT BELIEVED THE RESULTS WERE MEANINGFUL. TU ELECTRIC SHALL EVALUATE TRT FINDINGS AND CONSIDER THE IMPLICATIONS OF THESE FINDINGS ON THE QUALITY OF CONSTRUCTION AT COMANCHE PEAK. TU ELECTRIC SHALL THEN SUBMIT TO NRC A PROGRAM PLAN AND SCHEDULE FOR COMPLETING A DETAILED AND THOROUGH ASSESSMENT OF THE QA ISSUES PRESENTED IN THE ENCLOSURE TO SSER-11. THE PROGRAMMATIC PLAN AND THE PLANS FOR ITS IMPLEMENTATION WILL BE REVIEWED AND EVALUATED BY THE NRC STAFF. TRT CONSIDERED THE FINDINGS TO BE GENERIC TO BOTH UNITS 1 AND 2, AND THE PROGRAM PLAN AND SCHEDULE SHOULD ADDRESS BOTH UNITS. THIS PROGRAM PLAN SHOULD: (1) ADDRESS THE ROOT CAUSE OF EACH FINDING AND ITS GENERIC IMPLICATIONS ON SAFETY-RELATED SYSTEMS, PROGRAMS, OR AREAS, (2) ADDRESS THE COLLECTIVE SIGNIFICANCE OF THESE DEFICIENCIES, (3) ADDRESS THE TOTAL IMPACT OF ONE DISCIPLINE-RELATED FINDING ON OTHER DISCIPLINES, AND (4) PROPOSE AN ACTION PLAN THAT WILL CORRECT ALL PROBLEMS IDENTIFIED AND ENSURE SUCH PROBLEMS DO NOT OCCUR IN THE FUTURE. THE PLAN SHOULD ALSO ASSURE THAT THE FOREGOING MATTERS ARE ADDRESSED SO AS TO PROVIDE REASONABLE ASSURANCE THAT NO SAFETY-SIGNIFICANT DEFICIENCIES REMAIN	

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		UNDETECTED AND UNRESOLVED. TU ELECTRIC's EXAMINATION OF THE POTENTIAL QUALITY IMPLICATIONS OF THE TRT FINDINGS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE AREAS OR ACTIVITIES SELECTED BY TRT. THE PROGRAM PLAN MUST DESCRIBE THE DEPTH AND BREADTH OF TU ELECTRIC's APPROACH IN SUFFICIENT DETAIL TO PERMIT AN INDEPENDENT EVALUATION OF THE PLAN. THIS EVALUATION MUST CONCLUDE THAT THE PLAN IS COMPREHENSIVE AND SELF-SUFFICIENT AND WILL PROVIDE REASONABLE ASSURANCE THAT THE QUALITY OF CONSTRUCTION CAN BE DEMONSTRATED. THE ACTIONS SHALL ALSO CONSIDER THE USE OF MANAGEMENT PERSONNEL WITH A FRESH PERSPECTIVE TO EVALUATE THE TRT's FINDINGS AND IMPLEMENT CORRECTIVE ACTIONS. TU ELECTRIC SHALL CONSIDER THE USE OF AN INDEPENDENT CONSULTANT TO PROVIDE OVERSIGHT TO THE PROGRAM. TU ELECTRIC SHALL ALSO INVESTIGATE THE ROLE OF THE PRINCIPAL CONTRACTOR PERSONNEL (BROWN & ROOT AND EBASCO) IN REGARD TO QUALITY ASSURANCE/QUALITY CONTROL CONCERNS. ALTHOUGH TRT REALIZES THAT TU ELECTRIC IS ULTIMATELY RESPONSIBLE FOR THE PLANT, THE CONTRACTOR (CONSTRUCTOR) WAS DIRECTLY RESPONSIBLE FOR CONSTRUCTION AND QUALITY CONTROL. TU ELECTRIC SHALL ALSO CONSIDER THE PRUDENCE OF CONTINUING TO RELY ON CONTRACTOR MANAGEMENT PERSONNEL INVOLVED IN ONGOING WORK AND RECOVERY EFFORTS WHEN THEY ARE THE SAME PEOPLE DIRECTLY RESPONSIBLE FOR THE PROBLEMS IDENTIFIED.	