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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

RELATED CORRESPONDENCE

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October 22, 1984

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Peter B. Bloch, Esq., Chairman  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Herbert Grossman, Alternate Chairman  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dr. Walter H. Jordan  
Administrative Judge  
881 W. Outer Drive  
Oak Ridge, TN 37830

Dr. Kenneth A. McCollom  
Administrative Judge  
Dean, Division of Engineering,  
Architecture & Technology  
Oklahoma State University  
Stillwater, OK 74078

DOCKET NUMBER  
PROD. & UTIL. FIC.....

50-445-02

50-446-02

In the Matter of  
Texas Utilities Electric Company, et al.  
(Comanche Peak Steam Electric Station, Units 1 and 2)  
Docket Nos. 50-445, 50-446, 50-445/2, and 50-446/2

DOCKET NUMBER  
PROD. & UTIL. FIC.....

50-445-02-2

50-446-02-2

Dear Administrative Judges:

The NRC Staff ("Staff") has recently issued Inspection Report 84-16 (October 4, 1984). Inspection Report 84-16 discusses the Staff's third walkdown inspection at the Comanche Peak Steam Electric Station ("CPSES"). During this inspection, portions of the CPSES Unit 1 containment building were inspected by the Staff, and two violations of NRC requirements were identified (445/8416-01; 445/8416-02). Copies of this Inspection Report are enclosed for the information of the Board.

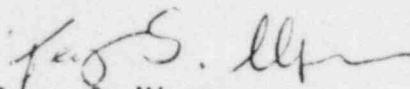
The Staff has also transmitted a letter dated October 11, 1984 to the Applicants requesting additional information on Applicants' response to a Notice of Violation (445/8921-02). This Notice of Violation was first identified in Inspection Report 84-21 (July 18, 1984). Since the Board

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has previously indicated its interest in Inspection Report 84-21, a copy of the October 11, 1984 Staff letter regarding this Inspection Report is enclosed for the information of the Board.

Sincerely,

  
Gary S. Mizuno  
Counsel for NRC Staff

Enclosures: As stated

cc w/encl.: Anthony Roisman

cc w/o encl.: Remainder of Service List



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

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In the Matter of  
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Docket Nos. 50-445, 50-446, 50-445/2, and 50-446/2

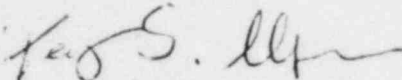
Dear Administrative Judges:

The NRC Staff ("Staff") has recently issued Inspection Report 84-16 (October 4, 1984). Inspection Report 84-16 discusses the Staff's third walkdown inspection at the Comanche Peak Steam Electric Station ("CPSES"). During this inspection, portions of the CPSES Unit 1 containment building were inspected by the Staff, and two violations of NRC requirements were identified (445/8416-01; 445/8416-02). Copies of this Inspection Report are enclosed for the information of the Board.

The Staff has also transmitted a letter dated October 11, 1984 to the Applicants requesting additional information on Applicants' response to a Notice of Violation (445/8921-02). This Notice of Violation was first identified in Inspection Report 84-21 (July 18, 1984). Since the Board

has previously indicated its interest in Inspection Report 84-21, a copy of the October 11, 1984 Staff letter regarding this Inspection Report is enclosed for the information of the Board.

Sincerely,

  
Gary S. Mizuno  
Counsel for NRC Staff

Enclosures: As stated

cc w/encl.: Anthony Roisman

cc w/o encl.: Remainder of Service List



10-11-84

In Reply Refer To:  
Docket: 50-445/84-21

Texas Utilities Electric Company  
ATTN: M. D. Spence, President, TUGCO  
Skyway Tower  
400 North Olive Street  
Lock Box 81  
Dallas, Texas 75201

Thank you for your letter of August 17, 1984, in response to our letter and the attached Notice of Violation dated July 18, 1984. As a result of our review, we find that additional information is needed as discussed with your Mr. R. E. Camp on September 24, 1984.

Specifically, the preventive action taken to assure proper indication of installed instrumentation when used for certified test data appears unlikely to provide that assurance. Your letter refers to a change to CP-SAP-7, "Format and Content of Test Instructions/Procedures." Upon reviewing the August 15, 1984, interim change to Section 4.3.3.6.h of CP-SAP-7, we are concerned that the added note does not direct the procedure writer to include a prerequisite or test step which ensures that installed instrumentation (whether previously in service or not) is filled and vented just prior to obtaining preoperational test data. Instead the change suggests that the writer consider such a provision, and then only where the proposed preoperational or acceptance test procedure places the system in service vice the "System Operating Procedure." Whether or not the preoperational test places the system in service is not germane to the problem. Also, whether the system has been in or out of service before the test has little effect on the presence of air in dead-ended differential pressure detector piping. The interim change to CP-SAP-7 does not appear to provide reasonable assurance that differential pressure detectors will provide reliable data because it does not require the test procedure to contain provisions for filling and venting such detectors before data are obtained. Unless this assurance is provided, Criterion XI and XII of 10 CFR 50, Appendix B would not be satisfied.

In light of the above concern, your response to Notice of Violation 445/8421-02 is inadequate with respect to "preventive action."

Please provide the supplemental information within 30 days of the date of this letter.

Sincerely,

Original Signed by:  
**R. L. BANGART**

Richard L. Bangart, Director  
Region IV Comanche Peak Task Force

cc:  
Texas Utilities Electric Company  
ATTN: B. R. Clements, Vice  
President, Nuclear  
Skyway Tower  
400 North Olive Street  
Lock Box 81  
Dallas, Texas 75201

Texas Utilities Electric Company  
ATTN: H. C. Schmidt, Manager  
Nuclear Services  
Skyway Tower  
400 North Olive Street  
Lock Box 81  
Dallas, Texas 75201

TEXAS UTILITIES GENERATING COMPANY

SKYWAY TOWER • 400 NORTH OLIVE STREET, L.B. #1 • DALLAS, TEXAS 75201

BILLY R. CLEMENTS  
VICE PRESIDENT, NUCLEAR OPERATIONS

August 17, 1984  
TXX-4253

AUG 17 1984

Mr. Richard L. Bangart, Director  
Region IV Comanche Peak Task Force  
U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011

Docket Nos.: 50-445  
50-446

Comanche Peak Steam Electric Station  
Response to NRC Notices Of Violations  
Inspection Report No. 84-21  
File No.: 10130

Dear Mr. Bangart:

We have reviewed your letter dated July 18, 1984 on the inspection conducted by the Office of Inspection and Enforcement and by Mr. W. F. Smith regarding Comanche Peak, Unit 1. We have responded to the findings listed in the Appendix of that letter.

To aid in the understanding of our response, we have repeated the requirements and your findings, followed by our corrective actions. We feel the enclosed information to be responsive to the Inspector's findings. If you have any questions, please advise.

Very truly yours,

*Richard E. Kahler*  
for Billy R. Clements

BRC:msc

c: NRC Region IV - (0+1)

Director, Inspection & Enforcement (15 copies)  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

NOTICE OF VIOLATION

Texas Utilities Electric Company  
Comanche Peak Steam Electric Station

Docket: 50-445/84-21  
Construction Permit: CPPR-126

Based on the results of an NRC inspection conducted during the period of June 14-16, 1984, and in accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), 49 FR-8583, dated March 8, 1984, the following violations were identified:

1. Criterion V of Appendix B to 10 CFR 50 states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings . . . ."

Contrary to the above, on June 16, 1984, an operator proceeded to partially open Station Service Water Chlorination Valve XSW-042 in violation of Step 5.4.1.6 of System Operating Procedure SOP-501A (Rev. 0), "Station Service Water System," which requires XSW-036 to be opened. The operation was aborted and the valve restored to the shut position only after the NRC inspector pointed out the procedure violation. Subsequently, it was determined that the procedure was in error, thus was changed accordingly and the operation resumed by opening Valve XSW-042.

This is a Severity Level IV Violation. (Supplement II-D) (445/8421-01)

Discussion

The subject violation occurred during conduct of a preoperational test. The CPSES Final Safety Analysis Report (FSAR) requires trial use of plant operating procedures during the startup test program. The following is an excerpt from the CPSES FSAR, Section 14.2.9:

14.2.9 TRIAL USE OF PLANT OPERATING AND EMERGENCY PROCEDURES

The plant operating emergency and surveillance procedures will be use-tested during the test program and will also be used in the development of preoperational and initial startup procedures to the extent practical. The trial use of operating procedures serves to familiarize operating personnel with systems and plant operation during the testing phase and also serves to assure the adequacy of the procedures under actual or simulated operating conditions before plant operation begins.

Prior to fuel load, draft operating procedures may be utilized for equipment operation and may be informally altered to meet special test considerations.



Although the use of draft operating procedures and their informal alteration is allowed by the FSAR, CPSES has chosen to use approved procedures to support testing activities in order to provide a controlled mechanism for documenting procedure deficiencies and changes. That mechanism is the temporary change process.

The operator involved was using System Operating Procedure SOP-501A, Rev. 0, to chlorinate the Station Service Water inlet. The procedure required the operation of the chlorination inlet valve, XSW-036. The chlorination inlet valve is routinely operated and operators are familiar with its location and use. The operator opened the proper valve. However, the valve was tagged XSW-042 instead of XSW-036 due to renumbering between Revisions CP-1 and CP-2 of the flow diagram. Because the procedure was in trial use as required by the FSAR, it had not yet been revised to reflect the valve number change. Therefore, even though the correct valve was operated, a violation of the procedure occurred in that the valve tagged XSW-042 was operated when the procedure called for the operation of valve XSW-036. It should be noted that the operator consulted with the System Test Engineer prior to operating the valve to ensure that the operation supported the test in progress.

#### Corrective Action

The on-duty Shift Supervisor initiated Deficiency Report 84-054 which was reviewed by the Operations Quality Assurance Supervisor. The Deficiency Report documented the violation of the procedure. Final disposition of the deficiency was completed on July 5, 1984, and documented appropriate retraining of the operator involved.

#### Preventive Action

The operator has been reminded of the need to follow approved operating procedures when performing operating evolutions. In addition, he has completed retraining involving procedures STA-205, "Temporary Changes to Procedures", and SOP-501A, "Station Service Water System".

Furthermore, the Operations Supervisor met with each shift operating crew, including Supervisors, Reactor Operators and Auxiliary Operators to review this incident and to emphasize the proper use and adherence to approved procedures.

Also, Special Order 1-50-84-003 specifies that all safety related operating activities will be carried out in accordance with approved procedures. This Special Order is reviewed by the Shift Supervisor at each shift change.

#### Date of Full Compliance

Corrective and preventive actions have been completed.

2. Criterion XI of Appendix B to 10 CFR 50 states in part, ". . . the test program shall include, as appropriate, proof test prior to installation, preoperational tests, and operational tests during nuclear power plant or fuel reprocessing plant operation of structures, systems, and components. Test procedures shall include provisions for assuring that all prerequisites for the given test have been met, . . ."

- a. Contrary to the above, during the performance of the Diesel Generator Control Circuit Functional and Start Test, ICP-PT-29-02 RT-1, the NRC inspector noted that there was no prerequisite in the test procedure to provide for station service air so that Step 7.1.6.7 can be performed to operate the barring device, which requires service air to function.

This became apparent to the NRC inspector when he noticed the service air piping was not connected to the barring device. In lieu of service air, the STE utilized temporary air from a portable air compressor, which is not addressed by the procedure.

- b. Contrary to the above, the station service water flow balancing test procedure, ICP-PT-04-01, had no prerequisite requirement to ensure the flow gages used during Step 7.8 (Flow Adjustment) were properly filled and vented. Failure to fill and vent these detectors just prior to flow adjustment can cause erroneous flow gage indications. This can place the flow data in question. As a result, during conduct of Step 7.8 of the test, the service water flow gage for containment spray was pegged high with no flow. It was evident that the gage was malfunctioning due to air binding or other mechanical problem.

This is a Severity Level IV Violation. (Supplement II-E) (445/8421-02)

#### Discussion

- 2a. As identified in the finding above, it is acknowledged that one primary support system (Service Air) was not specified as a prerequisite requirement for conduct of the test. The purpose of the test section noted was to demonstrate barring device operation in the "Maintenance Mode," therefore an air supply was required. As no prerequisite existed requiring a specified air supply, the System Test Engineer noted in the test log that a temporary air compressor would be used to perform the step. At that time, two deficient conditions existed: 1) the service air prerequisite was overlooked during the original procedure review and approval, and 2) the STE failed to properly document the addition of the required air supply in accordance with Startup Administrative Procedure CP-SAP-12. The proposed corrective action below will address these two deficient conditions, since the operability of the barring device was satisfactorily demonstrated as required in ICP-PT-29-01 RT-1, Step 7.1.6.7.

- 2b. Test Section 7.8 began June 16, 1984 at 0853. After establishing conditions required to perform the flow balance, (Steps 7.8.1 through 7.8.5) the balancing commenced at 1330. At 1500, the test chronological



log notes that all components were aligned and the subject flow indicator would not respond. TUGCo I&C personnel arrived to check the instrument at 1540. After attempting to fill and vent the instrument, it was ascertained that a three-way valve manifold was clogged. At 1615, the test was terminated with no data taken. On June 18, 1984, at 1950, the test section was resumed with a log entry stating that the I&C personnel placed the flow indicator in service after unclogging the three-valve manifold. Test steps 7.8.1 through 7.8.5 were reperformed and the balance was satisfactorily demonstrated at 2150.

Since the Service Water System was in service for a significant length of time prior to conduct of the preoperational test, and the test procedure was not used for initial filling, venting and placing the system into operation, it was not deemed necessary to verify instrument filling and venting as a prerequisite to LCP-PT-04-01. As indicated above, the erratic instrument was identified and the problem corrected prior to repeating the applicable test steps and recording the required test data. Therefore, the test procedure and results are satisfactory.

#### Corrective Action

No retests are required to correct the deficiencies described above. The diesel generator cognizant System Test Engineer will be counseled on proper utilization of Startup Administrative Procedure requirements when procedural problems are identified.

#### Preventive Action

Each organization responsible for review of preoperational test procedures has been instructed to ensure that test prerequisites receive a comprehensive review to ensure system readiness to test and correct component configuration to assure validity of the test results. All Startup personnel responsible for authorizing and performing preoperational tests have been instructed to perform a comprehensive review of test prerequisites prior to authorization of the tests to be performed.

Since preoperational test procedures are not typically used for system filling, venting and initial operation, we do not require that each preoperational test contain prerequisites for verifying proper filling and venting of the system or instrumentation. However, for cases when preoperational test procedures are used to provide instructions for system filling, venting, etc., Startup Administrative Procedure CP-SAP-7 will be revised to ensure that instructions are also provided for instrumentation filling and venting prior to test data acquisition.

#### Date of Full Compliance

Corrective and Preventive Actions will be completed by August 15, 1984.

10-4-84

In Reply Refer To:  
Docket: 50-445/84-16

Texas Utilities Electric Company  
ATTN: M. D. Spence, President, TUGCO  
Skyway Tower  
400 North Olive Street  
Lock Box 81  
Dallas, Texas 75201

Gentlemen:

This refers to the special inspection of the Unit 1 reactor containment building conducted by Mr. L. E. Martin and other members of our staff during the period May 14 through June 20, 1984, of activities authorized by NRC Construction Permit CPPR-126 for the Comanche Peak Facility, Unit 1, and to the discussion of our findings with Messrs. J. T. Merritt and A. Vega and other members of your staff at the conclusion of the inspection.

This inspection is the third in a series of planned construction completion room/area inspections. The primary purpose of this inspection was to evaluate the actual as-built status of the reactor containment building as compared to the design and inspection documentation. This inspection covered certain construction characteristics, such as, workmanship, welding, pipe supports, inspection adequacy, etc., which have been the subject of contentions during the ASLB hearing. As you are aware, the Comanche Peak Technical Review Team has a separate effort ongoing to review technical issues and allegations related to these same characteristics for this and other safety-related areas of the plant. As a consequence, this inspection should not be construed to represent the complete or final findings of the as-built status of the containment building.

Areas examined during the inspection included piping and pipe supports, containment penetrations, HVAC ducts and supports, electrical raceway and supports, safety-related equipment, "as-built" program, QC inspector and welder qualifications, and followup on one unresolved item from the special inspection of the fuel building. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews and discussions with craft and QC personnel, and observations by the inspectors. The findings are documented in the enclosed inspection report.

During this inspection, it was found that certain of your activities were in violation of NRC requirements. Consequently, you are required to respond to these violations, in writing, in accordance with the provisions of Section 2.201 of the NRC's "Rules of Practice," Part 2, Title 10, Code of

Federal Regulations. Your response should be based on the specifics contained in the Notice of Violation enclosed with this letter.

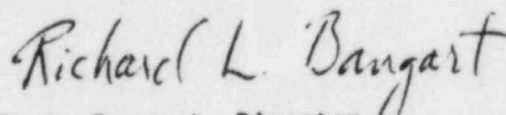
Your response to Item A of the attached Notice of Violation should address the adequacy of inspection of these cable tray hangers (CTHs). It is recognized that the as-built conditions of these hangers are adequate for the intended design function and that the engineering analysis indicates that all of these hangers will be used as they are installed with the exception of CTH 6567 (bevelled washer). Therefore, your response to this violation should address the corrective action and recurrence controls for the inspection of these cable tray hangers.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosures will be placed in the NRC Public Document Room unless you notify this office, by telephone, within 10 days of the date of this letter, and submit written application to withhold information contained therein within 30 days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1).

The response directed by this letter and the accompanying Notice is not subject to the clearance procedures of the Office of Management and Budget as required by the paperwork reduction act of 1980, PL 96-511.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,



R. L. Bangart, Director  
Region IV Comanche Peak Task Force

Enclosures:

1. Appendix A - Notice of Violation
2. Appendix B - NRC Inspection Report 50-445/84-16

cc w/enclosures:

Texas Utilities Electric Company  
ATTN: B. R. Clements, Vice  
President, Nuclear  
Skyway Tower  
400 North Olive Street  
Lock Box 81  
Dallas, Texas 75201

Texas Utilities Electric Company  
ATTN: H. C. Schmidt, Manager  
Nuclear Services  
Skyway Tower  
400 North Olive Street  
Lock Box 81  
Dallas, Texas 75201

APPENDIX A

NOTICE OF VIOLATION

Texas Utilities Electric Company  
Comanche Peak Steam Electric Station

Docket: 50-445/84-16  
Construction Permit: CPPR-126

Based on the results of an NRC inspection conducted during the period of May 14 through June 20, 1984, and in accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), 47 FR 8583, dated March 9, 1984, the following violations were identified:

A. Failure to Properly Inspect Cable Tray Hangers (CTHs)

10 CFR Part 50, Appendix B, Criterion X requires that the inspection program of activities affecting quality shall be established and conducted in a manner to verify conformance with the documented instructions, procedures, and drawings.

Procedure QI-QP-11.10-2, Rev. 27, "Cable Tray Hanger Inspection," specifies the inspection attributes for inspecting assembly, configuration, base plate grouting, welding, etc., for conformance with design drawings and documents.

Contrary to the above:

1. The NRC inspectors identified two cases where three supports shared common clip angle attachments to the concrete wall. CTHs 6503, 6504, and 6505 shared a common clip angle that was not called for on Drawing 2323-S-903, Detail D for Case SP4 or on Component Modification Card (CMC) 11097. CTHs 6576, 6577, and 6578 shared common clip angles that were not called for on Drawing 2323-S-903, Detail D for SP4.
2. The NRC inspectors identified two hangers where the dimensions did not agree with the drawings. CTHs 6632 and 6638 both have installed dimensions that are more than the  $\pm 1/4$  inch allowed tolerance from those specified in the appropriate design documents. The dimensional errors are specifically documented on Nonconformance Report M84-01834. The dimensional errors of the members varied from  $7/8$  of an inch to  $1 1/8$  of an inch shorter than those shown on the FSE-00159 drawing.
3. The NRC inspectors identified two cable tray hangers that did not have the weld configuration specified on the design drawings.



CTH 6642 and CTH 6645 both had horizontal welds at the clip angle to support connection and the design drawings specified vertical welds.

4. The NRC inspectors identified five cable tray hangers that had wall/floor connections that did not conform to those specified by the design drawings. CTH 6657 had a bevelled washer that was improperly installed so that it actually decreased the bearing surface between the nut and the clip angle. CTH 5519 did not have 1 inch of grout under base plate as specified on Drawing 2323-S-913, Detail 6. CTHs 5491, 5498, and 5499 had clip angles that utilized a combination of welding to embed plates and Hilti bolts for the wall or beam attachment for which there was no detail.

The above are examples identified by the NRC inspectors where cable tray hangers were installed by the craft to conditions other than those specified by the identified design documents and the QC inspectors failed to identify and document these conditions.

This is a Severity Level IV Violation. (Supplement II.D) (445/8416-01)

B. Failure to Provide Controlled Issuance of Design Documents and Changes Thereto

10 CFR Part 50, Appendix B, Criterion VI, "Document Control," requires that documents, such as instructions, procedures, and drawings, including changes thereto, be controlled and properly distributed to the location where activities affecting quality are conducted. ANSI N45.2.11, Section 7 requires that documented procedures be used to control the issuance of design documents and changes thereto and that these procedures shall assure that documents are properly distributed.

Contrary to the above, it was determined that issuance of design documents and changes thereto were not being controlled by Operations Document Control Center (DCC). Specifically, the actual status of design drawings in the control room, file 003, could not be determined. The list of CMCs and design change authorizations identified by Operations DCC to be applicable did not agree with the Construction DCC list. In addition, the effective revision of Drawings 2323-MI-0301 (CP-5), MI-0261 (CP-4), and MI-0262 (CP-4) were not found in the control room file.

This is a Severity Level V Violation. (Supplement II.E) (445/8416-02)

Pursuant to the provisions of 10 CFR Part 2.201, Texas Utilities Electric Company, is hereby required to submit to this office, within 30 days of the date of this Notice, a written statement or explanation in reply, including:

- (1) the corrective steps which have been taken and the results achieved;
- (2) corrective steps which will be taken to avoid further violations; and
- (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

Dated: October 4, 1984



APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

NRC Inspection Report: 50-445/84-16

Construction Permit: CPPR-126

Docket: 50-445

Category: A2

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

Facility Name: Comanche Peak Steam Electric Station (CPSES), Unit 1

Inspection At: CPSES, Unit 1, Glen Rose, Texas

Inspection Conducted: May 14 - June 20, 1984

Inspectors:

*L. E. Martin*  
L. E. Martin, Reactor Inspector, RIV Task Force  
(paragraphs 1, 2, 3, 4, 7, 10, 12, and 13)

8/28/84  
Date

*Chester R. Oberg*  
C. R. Oberg, Reactor Inspector, RIV Task Force  
(paragraphs 4, 5, 6, 7, 8, 9 and 11)

8/29/84  
Date

Other

Accompanying

Personnel: W. R. Bennett, Reactor Inspector, RIV  
M. E. Skow, Reactor Inspector, RIV

Approved:

*D. M. Hunnicutt*  
D. M. Hunnicutt, Team Leader, RIV Task Force

8/29/84  
Date

Inspection Summary

Inspection Conducted May 14-June 20, 1984 (Report 50-445/84-16)

Areas Inspected: Special inspection of construction completion inside Unit 1 containment building of piping and pipe supports; penetrations; heating, ventilation, and air conditioning ducts and supports; safety-related equipment; electrical raceway and supports; as-built program; QC inspector/welder qualifications; and followup on one unresolved item from the special inspection of the fuel building. The inspection involved 801 inspector-hours onsite by four NRC inspectors.

Results: Within the eight areas inspected, two violations were identified. One violation was identified in the electrical area pertaining to cable tray hanger inspections (445/8416-01, paragraph 7.b) and one violation was identified in the as-built program area pertaining to document control (445/8416-02, paragraph 9.e).

DETAILS

1. Persons Contacted

Principal Licensee Contacts

J. T. Merritt, Assistant Project General Manager  
\*L. F. Fikar, Executive Vice President, Engineering  
\*A. Vega, Site QA Manager  
\*J. C. Kuykendall, Manager Nuclear Operations  
\*B. J. Murray, Building Manager  
J. Kinavy, Assistant Building Manager  
M. McBay, Engineering Manager  
\*L. M. Popplewell, Project Engineering Manager  
\*L. M. Bielfeldt, Quality Engineering Supervisor  
\*W. R. Deatherage, Executive Assistant, Office of Project General Manager  
\*C. Killough, Quality Surveillance Supervisor  
\*J. Brackney, Records Supervisor  
B. C. Scott, QA Supervisor  
I. Vogelsang, Project Electrical Engineer  
R. Camp, Start Up Supervisor  
M. Hudgins, Electrical Test Group  
R. Calder, Nuclear Engineering Manager  
M. Strange, Supervising Engineer  
R. R. Wistrand, Administrative Superintendent

Other Contractor Contacts

R. Langston, Brown and Root (B&R) Insulation Superintendent  
T. Chandler, B&R, QC Inspector  
S. Perry, B&R, QC Inspector  
J. Hobbs, B&R, Paper Flow Group  
B. Edwards, Bahnson, Project Manager  
D. O'Brien, Bahnson, Project Manager  
D. Williams, Chicago Bridge and Iron (CBI), QC Supervisor  
R. Moehler, Westinghouse, Site Representative  
J. Foland, Westinghouse, Nuclear Controls Engineer

The NRC inspectors also contacted other plant personnel including members of the construction, technical, quality assurance, and administrative staffs.

\*Denotes those attending the exit interview on June 20, 1984.

## 2. Inspection Objectives and Scope

The objective of this inspection was to evaluate the construction completion of the Unit 1 reactor containment building. This objective was accomplished through examination of installed equipment and hardware to ensure that the installation conforms with FSAR commitments and approved design documents as detailed in the inspection packages.

For each of the areas inspected, prepared inspection data sheets were utilized to define the inspection attributes, acceptance criteria, and results. These inspection data sheets are included as an attachment to this report. Also included in the scope of this inspection were informal discussions with craft and QC personnel and subjective evaluations by the NRC inspectors of their job knowledge.

The areas selected for examination were:

- Piping and piping supports including certain instrumentation for six different piping systems
- Containment penetrations
- HVAC ducts and supports
- Electrical raceway/supports, terminations, and electrical separation
- Equipment installation and procurement
- Review of as-built program
- Review of QC inspector and welder qualifications

This inspection included followup and closure of unresolved item 445/8323-06 from NRC Inspection Report 50-445/83-23 as documented in paragraph 11 of this report.

The major portion of this inspection was done during the period of May 14 through June 20, 1984, and was bounded by the 860' and above elevations of the reactor containment building. However, a portion of this inspection for the main steam, pressurizer relief, and reactor coolant systems occurred in January and February 1984. The inspection of these systems coupled with the inspection of the other systems documented in this report cover most of the elevations in the reactor containment building for Unit 1.

## 3. Status of Unit 1 Reactor Containment Building

The Unit 1 reactor containment building was essentially complete from the 860' elevation and above. The major construction activities in those areas involved cleaning, touch up painting, and insulation installation.

The following is a summary of the open items as of June 1, 1984, from the master data base (MDB) system (punch list) for the Unit 1 reactor containment building at elevation 860' and above:

Coatings	26
Craft	25
Engineering	18
Quality	17
Start Up/Testing	263
Miscellaneous	<u>35</u>
	384

As seen from above, the majority of the open items were in the startup and testing area, with very few construction items remaining open. At the time of this inspection, access controls for this area were in place.

There was still considerable construction activity in the two lower levels of the reactor containment building. A large clean up and coatings effort was underway. The reactor containment building at all elevations will soon be complete and access controls will be in place.

#### 4. Piping and Pipe Supports

##### a. Attributes

Predetermined attributes for inspection were identified on the specific inspection data sheet. The following listing gives a detailed description of these attributes:

- (1) Welding - The type and size of welds and their location and spacing were detailed as specified by the various design documents.
- (2) Hardware - Support members and fasteners were proper type and size with proper orientation.
- (3) Connections - Ceiling/wall, etc., connections to attachments per design documents.
- (4) Physical Conditions - Dimensions of support members, piping, and their location per design documents.
- (5) Attachments - Size of attachment, welding and/or Hilti bolt/Richmond inserts verified for size, type, thread engagement, bearing, spacing, and depth.



- (6) Base Plates - Size per design document and sufficient bearing surface contact.
- (7) Grouting - Used where specified or appropriate.
- (8) Clearances - Sufficient space from interferences to allow for specified thermal expansion and movement.
- (9) Workmanship - Conforms to generally accepted craft work practices.
- (10) Documentation - Review of installation and inspection records to ensure that these records document the as-installed piping and supports and agree with the current approved design information.

b. Reactor Coolant System (RCS)

- (1) General - The construction work on the RCS was found to be essentially complete. The primary system hydrostatic test and the hot functional test (HFT) had been completed. The RCS was open and the reactor pressure vessel head was removed. Work was being done on the system in the areas of instrument calibration and fit up of crossover leg restraint spacers. Reflective insulation had been installed. Grouting of various support base plates was being done. Considerable activity in cleaning up spaces and components and the application of protective coatings was also noted.

- (2) Inspection Scope and Inspection Criteria Utilized

Inspection of the RCS included a review of selected portions of the following areas:

- Foundations
- Safety Related Structures
- Safety Related Components
- Instrumentation

Portions of management systems were tested by examination of documents and procedures as they were directly applicable to some of the areas listed above. These included:

- Corrective Actions
- Design Change Control



- Procurement
- Maintenance
- Equipment Qualifications

The FSAR was reviewed to determine system technical requirements and licensee commitments. Applicable drawings and design change authorizations (DCAs) were reviewed. In addition, records of QC inspections, craft installation records, and other applicable documents were reviewed to determine the specific craft construction and QC inspection requirements. A detailed list of documents reviewed is contained in Attachment 1.

(3) Foundations

(a) Foundation for Reactor Coolant Pump (RCP) and Steam Generator (SG) Supports

The documents including applicable drawings relating to the foundations of the RCP and SG supports were reviewed by the NRC inspector. The following information was found to be documented:

- Traveler ME81-2154-5500 identified the need for grouting the columns.
- Grout Card 186 documented that grouting was authorized by B&R engineering and performed on December 23, 1981.
- Comprehensive strength of the three grout cubes averaged 8450 psi (6000 psi required).

The applicable drawings were found to differ in one area. Westinghouse Drawing 1457F29 (Rev. 5) and Traveler ME81-2154-5500 both called for approximately 8 inches of "grout". Drawing 2323-S1-0550, Rev. 4 called for "Class E concrete" to be used under the pedestal bases.

Discussions were held with TUGCO civil engineering. The engineering representative stated that no technical problem existed since the commercial grout strength exceeded the Class E concrete strength. The reason for changing from "Class E concrete" to commercial grout could not be immediately established by the licensee. This matter was then referred to the site QA manager who initiated an inquiry. This matter is considered unresolved. (445/8416-03)

(b) Crossover Leg Horizontal Restraint Anchor Bolts

Two types of anchor bolt assemblies were used on the horizontal restraints of the reactor coolant crossover leg. RAB3 and RAB4 assembly bolts, nuts, and washers were made from material that conformed to ASTM A-540 requirements. The anchor plates were made from material that conformed to ASTM A-558, Grade 50 requirements. The assemblies were fabricated off site, shipped to the site, receipt inspected, and later installed as part of Concrete Placement 101-2812-01 (in blockouts). Subsequently, foundation concrete for the loop 1 crossover restraints was installed (Placements 101-9812-01 and 101-9812-02).

The materials and installation of the 2 ½-inch anchor bolts, RAB-3 (75 inches long) and RAB-4 (57 inches long) were confirmed by a review of records and verification of code marking on top of anchor bolts. The NRC inspector concluded that the anchor bolts were installed in accordance with the applicable drawings.

(c) Foundations for the Steam Generator and Reactor Coolant Pump Cross Over Leg Restraints

The records documenting the placement of foundation concrete for the crossover leg restraints were examined for Unit 1. Concrete Pour Packages 101-9812-002 and -003 were reviewed. Design Mix 129 was used for the placement on June 1, 1978. All 28-day cylinder breaks were verified, by review of compression test reports, to be in excess of 4000 psi as required by Construction Specification 2323-SS-9, Rev. 4. The placements took place on June 1, 1978. Proper curing was performed.

No discrepancies in the documentation were noted. Specific documents reviewed are listed on the inspection data sheets.

(4) Reactor Coolant System Piping Cleanliness (External)

Insulation on the RCS piping and major components is the reflective or mirror stainless steel type manufactured by Diamond Power and installed by B&R. Prior to installation of the insulation sections, swipes were taken of the surface of the stainless steel piping in order to determine the chloride and fluoride contamination levels. FSAR, Section 5.4.3.3.3 stated that prior to application of thermal insulation,

austenitic stainless steel surfaces are cleaned and analyzed to a halogen limit of 0.0015 mg Cl<sub>2</sub>/dm<sup>2</sup> and 0.0015 mg F<sub>2</sub>/dm<sup>2</sup>.

The NRC inspector reviewed the program for determining surface contamination. The procedures contain adequate controls for ensuring that the surface of stainless steel does not exceed the designated levels. Inspection travelers were reviewed. Specific requirements for cleaning and QC inspection were identified. Inspection item removal notices are required when insulation is removed and reinspection for contamination is repeated. The NRC inspector also observed the cleaning and obtaining swipe samples.

No deviations or violations were identified.

(5) Safety-Related Components

The NRC inspector reviewed Traveler ME-78-004-5505 that documented the installation of the RCP casing and supports. Final adjustment of the column supports was done after HFT. The NRC inspectors noted that the columns were grouted. Readings of pump casings level were recorded as required by the traveler. No discrepancies were noted in documentation. QC inspections had been accomplished.

(6) Instrumentation

RCS flow transmitters (1-FT-415, 416, and 414) for loop 1 were selected for inspection. The NRC inspectors examined the runs to determine if identification, routing, slope, supports, and valves were installed in accordance with applicable drawings and specifications.

Instrumentation tubing was classified Safety Class 2, Seismic Category I. Wet process lines generally required a slope of 1 inch per foot. Routing and support locations were specified on the installation drawings. Records reviewed (see Attachment 1) agreed with the actual installation of the instrument runs. QC inspections had been accomplished in accordance with hold points specified on each weld data card. QC hold points included cleanliness, fitup, purge, final visual inspection, and dye penetrant examinations.

The NRC inspector concluded that the flow instrumentation for loop 1 was installed in accordance with approved drawings and specifications.

(7) Nonconformance Reports (NCR)

B&R NCR C706-R1 (7/21/77) identified that 11 RAB-15 anchor bolt assemblies used in crossover leg (vertical) restraints were nonconforming in that jam nuts were welded to the plate washers instead of heavy hex nuts. The assemblies had the jam nuts removed by a lath and grinding from the bolt and the plate washers. The NCR was reviewed and approved by QA on August 8, 1977. On August 1, 1977, TWX-824 requested approval of the repair procedure from Gibbs & Hill (G&H) (New York office). On August 4, 1977, GTT-1420 documented approval of the repair. Design Change/Design Deviation Authorization (DC/DDA)-65 was issued on August 4, 1977, authorizing the repair.

Inspection and acceptance was to be done in accordance with ASTM A-540. A QC inspector observed the machining operation and performed a final inspection.

The NCR package was reviewed by the NRC inspector. An inspection report (8/5/77) documented the results of the machine shop operation. Nondestructive Examination Report (NDER)-1108 documented acceptance of the materials for further use. Verification of corrective action by QC was performed on August 12, 1977.

This NCR was selected for followup due to the special nature of the inspection action requested by the NCR and DC/DDA. All required licensee actions were found to have been completed and appropriately documented.

No deviations or violations were identified.

c. Containment Spray Piping and Piping Supports

The NRC inspectors selected 15 supports, 21 nozzles, and approximately 112 linear feet of containment spray piping for inspection. The specific areas inspected are identified on the support/hanger inspection data sheets of Attachment 1 to this report.

These sections were physically walked down and inspected. The NRC inspectors utilized the current approved design information and the latest QC inspection reports to determine adequacy of installation and accuracy of documentation.

No deviations or violations were identified.

d. Feedwater Piping and Piping Supports

The NRC inspectors selected 24 supports and approximately 210 linear feet of feedwater piping for inspection. The specific sections observed are identified on the support/hanger inspection data sheets of Attachment 1 to this report.



These sections were physically walked down and inspected. The NRC inspectors utilized the current approved design information and the latest QC inspection reports to determine adequacy of installation and accuracy of documentation.

No deviations or violations were identified.

e. Pressurizer and Associated Piping

(1) Pressurizer Piping Systems and Associated Supports

The NRC inspectors inspected 15 pipe supports and approximately 150 feet of piping associated with the pressurizer relief system. All of the supports and piping were installed in accordance with the latest design drawings and the appropriate procedures. This inspection also included a review of the documentation packages including inspection reports, welding documentation, design changes, nonconformance reports and their closure, material certifications, and construction travelers.

(2) Foundations and Foundation Bolts

The NRC inspectors inspected the installation of the pressurizer including rigging, pouring of concrete slab, and bolting. Construction Operational Traveler RI 78-009-5503 covered the rigging lifting and setting of the pressurizer. Drawing 2323-S1-OSS1, Rev. 6 and the documentation for Concrete Pour 101-7853-001 covered the location, size, type, securing, and thread protection of the base hold down bolts for the pressurizer. Purchase Order 35-1195-6812 and Receiving Inspection Report 03749 for the bolts were reviewed and found to be correct.

The NRC inspector verified that the heat number identification (007) was marked on each of the 24 anchor bolts. The bolts were certified to be ASTM A-540, B23, Class 4 material. The anchor bolt assemblies were manufactured by Bostrom-Bergen.

The NRC inspectors concluded that the pressurizer anchor bolt assemblies were of the specified materials and installed in accordance with the drawings and applicable design changes. QC inspections and documentation of these activities were appropriate.

The NRC inspector also reviewed the records for Design Mix 133 and Master Builders Grout 928 utilized in the installation of the anchor bolts and setting the pressurizer. The average

28 day strength was 4550 psi (design 4000 psi). The concrete pour records for Pour 101-7853-001 were appropriate.

No deviations or violations were identified.

f. Main Steam System Supports and Whip Restraints

The NRC inspectors reviewed four pipe supports and two pipe whip restraints associated with the main steam system. These supports and restraints are located above the 860' elevation of containment. The individual supports and restraints are identified on the data sheets in Attachment 1 of this report.

These items were inspected in detail to assure that the supports and restraints as installed conformed with the vendor certified drawings; FSAR, Section 3.6.B; ASME, Section III, Subsection NF; and the associated specifications and procedures. A partial inspection of these supports and restraints was documented in NRC Inspection Report 50-445/84-05 and specifically related to certain allegations. This inspection was a total inspection of the supports and restraints including a review of the documentation.

The NRC inspectors found that the inspected supports and restraints were constructed and installed in accordance with the design drawings and procedures. The NRC inspectors also found the document packages for these supports and restraints to contain the pertinent documents related to QC inspections, welding, design changes, and procurement.

No violations or deviations were identified in this area of the inspection.

5. Penetrations

The NRC inspectors examined 3 mechanical penetrations and 3 electrical penetrations. Dimensions and locations of all penetrations were found to be in accordance with applicable drawings. Craftsmanship was satisfactory. There was no evidence of insulation cracking on electrical penetration cabling. The NRC inspectors' review of records indicated that installation and maintenance were in accordance with the acceptance criteria and had been accurately documented, and that leak rate testing had been performed in accordance with the applicable procedure.

No violations or deviations were identified in this area of the inspection.

6. Heating, Ventilation, and Air Conditioning

Twenty-five seismic duct supports and associated duct segments of the Unit 1 containment air circulation and cooling system were inspected.



Specific supports are listed in Attachment 1. All but one of the supports were located on or above the 905' level of containment. The 24 supports are approximately 25% of the total HVAC supports on the 905' level. The 25th support was located on the 860' level.

The following attributes were utilized during this portion of this inspection.

Duct Supports

Location  
Dimensions  
Member Size  
Welding

Duct Segments

Orientation  
Size  
General Configuration  
Location

Supports for HVAC were examined in two parts. First, the seismic supports as designed and installed by Bahnson and second, the attachment to the containment liner plate, installed by Chicago Bridge and Iron Company (CBI), that held the support in place.

Three of the supports were found to have dimensional discrepancies as incorrect member sizes. These supports were examined by Bahnson and submitted to Corporate Consulting and Development Company, Ltd. (CCL) for evaluation. Similar problems had been previously identified in the CAT Inspection Report 50-445/63-18 and Region IV Inspection Report 50-445/84-10. CCL's report had not included containment HVAC supports in their evaluation. The weld stresses were recomputed based on the "as-installed" condition. The recomputed stresses were found to be within the allowable limits as shown below.

<u>Support Member</u>	<u>Maximum Emergency Condition Stress</u>	<u>Upset Condition Allowable Stress</u>
RB-1-905-1D-1G	12,585 psi	21,000 psi
RB-1-905-1D-4N	16,542 psi	21,000 psi
RB-1-905-1D-4J	9,137 psi	21,000 psi

The results of the analysis were contained in CCL's letters to Bahnson dated May 22 and May 25, 1984. The analysis confirmed that the installed HVAC supports were adequate for the expected service requirements.

Bahnson procedures for "Direct Support Design, Fabrication and Installation" (DFP-TUSI-003, Rev. 8, 5/4/83) and "Ductwork Fabrication Procedure" (DFP-TUSI-001, Rev. 10, 7/21/83) were reviewed and were found to be appropriate and contained sufficient detail and criteria.

The second part of the HVAC inspection involved an examination of the attachment assemblies holding the HVAC supports to the containment liner. CBI manufactured and shipped 406 "50-A" attachments to CPSES. The attachment supports were made of  $\frac{1}{2}$ " SA 537, Class 2 material, and consisted of 2 pieces joined by a full penetration weld. The base plate was approximately  $6\frac{1}{2}$ "x6". The attachment bracket was  $6$ "x $3\frac{1}{4}$ ", welded at right angles to the base plate. The base plate was welded to the containment liner by a  $3/16$ " fillet weld around the circumference of the plate. Other attachment brackets of similar configuration were made of  $3/8$ " plate and welded to the liner plate in a similar fashion.

The NRC inspector concluded that the materials were as specified on the CBI and G&H drawings. Material traceability was confirmed by a review of receipt inspections, shop releases, and material heat number sheets. Attachment welding was inspected by qualified QA welding supervisors as confirmed by the CBI master checklists. A Bahnsen welding specification (BSC-20) was coordinated with TUGCO to conform to base metal SA 537, Class 2 welded to ASTM A-36 material using E8018 filler metal (group F-4). Discussions were held with CBI and Bahnsen personnel. Visual examination was made of approximately 25 HVAC attachments.

No deviations or violations were identified.

## 7. Electrical

This section of the report contains information regarding the inspection of cables and cable terminations, cable trays, conduit runs, and their associated supports.

### a. Attributes

Predetermined attributes for inspection are identified on the specific inspection data sheet. The following paragraphs give a detailed description of these attributes:

- Cable Type - The type of cable used was confirmed by comparison of the cable to cable connection sign-off cards and cable pull cards. The number of conductors and color of cables were specifically verified as part of the inspection.
- Type and Size - This pertains to the type and size of conduit or cable tray including fittings, splices, pull boxes, covers, offsets, and fasteners.
- Tray covers - Installed as required or identified as an open item.

- Grounding - Installed as required on all raceways. This grounding is primarily for personnel protection.
- Craftsmanship - All fasteners properly installed, raceways free of sharp edges and burrs, galvinox protection, raceways free of damage, overall integrity of raceways, and proper bending of conduit. In addition, note was made of correctness of craft functions such as appropriate and adequate use of cable ties, crimping of connections, correct and clear identification of the cables, bend radius of cables, surface condition of cable, etc.
- Identification - Raceway identification and train or channel identification at each end and at the proper intervals in between as specified in IEEE 384.
- Supports - Proper type and spacing of raceway supports, material size and dimensions, welding, structural attachments, raceway attachments, location, bolt size, and spacing.
- Separation (physical/electrical) - Proper separation from piping, ducting, etc.; proper separation between voltage level; one foot/three feet separation between redundant trains or barriers; and separation from possible noise sources for nuclear instrumentation system (NIS) cables. Cable termination racks and panels were also inspected for internal separation requirements.

Separation criteria for Class IE circuits for CPSES is contained in IEEE 384-1974 (draft). Typical separation details for cables and raceways are contained in G&H Drawing 2323-EI-1702-02. This drawing was based on the Electrical Erection Specification 2323-ES-100, Section 4.11, "Separation Criteria". Additional criteria for NIS separation is contained on G&H Drawing 2323-EI-0602-03.

- Color Coding - Safety-related trains are indicated by the color of the outer jacket of the cable as indicated below:

"A" train - orange - Ø

Associated "A" train - orange with white stripes

"B" train - green - G

Associated "B" train - green with white stripes

"C" train - black - K - non-Q

Instrument Channel I - Red R

Instrument Channel II - White W

Instrument Channel III - Blue B

Instrument Channel IV - Yellow Y

Cable trays and conduits are marked with unique identification numbers which include a train or color code designation. The use of color code assisted in the determination of acceptable separation achievement. The cables were checked for consistent and correct color (train) designation.

- Documentation - review of installation and inspection records to ensure that these records document the as-installed raceway and supports and agree with the current approved design information.

Documentation of the cables was reviewed to determine if the QC inspection record was (a) clearly identified to the cable involved, (b) legible, (c) corrected, when necessary, by the use of a single line drawn through incorrect entries, and (d) completely filled out, dated, and signed by authorized QC inspector.

- Terminations - Inspection of cable terminations included these items to ensure that the cables were consistent with the installation record. Specifically:

Cable numbering and marking at termination points.

Terminations of conductors were properly crimped, terminals were tight, and conductor color and markings were verified.

b. Electrical Raceway and Raceway Supports

The NRC inspectors selected 108 sections of cable tray for inspection. The specific raceway sections inspected are identified on the raceway inspection data sheets of Attachment 1 to this report.

The NRC inspectors physically walked down and inspected 108 cable tray sections, 92 cable cable tray supports, and approximately 924 feet of cable tray. All of the cable trays and 77 of the cable tray supports inspected were properly installed, and the documentation was in order. The remaining 15 cable tray supports did not have proper supporting documentation. This reflects inadequate inspection. The deficiencies were subsequently documented by TUGCO on NCRs M84-01834, M84-01835, and M84-01836.



10 CFR Part 50, Appendix B, Criterion X and the FSAR require the organization performing an activity to verify conformance with documented instructions and drawings for accomplishing the activity. QI-QP-11.10-2, Rev. 27 of June 19, 1984, specifies inspection requirements for raceway supports including assembly inspection, attachment inspection, verification of base plates for grouting, and welding inspection.

In two cases, three supports shared a common clip angle attached to the concrete wall. The cable tray hangers of Drawing FSE-00159, Sheets 6503, 6504, and 6505 specify hangers per Drawing 2323-E1-0502-S, Detail "F". Detail "F" and Field Sketch Electrical (FSE), Sheets 6576, 6577, and 6578 refer to Drawing 2323-S-0904, Detail "5" for additional specifications, which in turn refers to Drawing 2323-S-0903, "Case SP4". SP4 specifies attachment per "Detail D". Detail D clearly shows a connection for one support to a clip angle and attachment using two bolts. However, to place the hangers with the required 16-inch vertical separation per these FSE sheets and Detail D, there would have been insufficient separation between the Hilti bolts per Table 3 of QI-QP-11.2-3, Rev. 20, dated May 8, 1984. The QC inspectors failed to recognize and document that the supports identified above were not installed in accordance with approved design drawings.

The cable tray hanger of FSE-00159, Sheet 6638 shows that dimension  $l_2$  of Detail "B" of Drawing 2323-E1-0502-01-S should be 3'10 1/8". The allowed tolerance for this specific application is 1/4 inch. The actual dimension as-built is 3'9". This difference is beyond tolerance specifications and was not recognized by the QC inspectors.

The cable tray hanger of FSE-00159, Sheet 6632 shows that dimensions for detail "E" of Drawing 2323-E1-0502-01-S should be  $h_1=9'4 \frac{1}{4}"$ ,  $h_2=5'4 \frac{1}{4}"$ , and  $h_3=2'8 \frac{1}{4}"$ . The allowed tolerance for these specific applications is 1/4 inch. The as-built dimensions are  $h_1=9'3"$ ,  $h_2=5'3"$ , and  $h_3=2'7"$ . This difference is beyond the tolerance specifications and was not identified by the QC inspectors.

Cable tray hanger of FSE-00159, Sheet 6657 has a Hilti bolt installed at an angle. The bevelled washer that was installed to provide improved bearing contact between the nut and the clip angle was misaligned. The misalignment of the bevel washer exacerbated the nut bearing contact. This was not identified by the QC inspectors.

The cable tray hanger of FSE-00159, Sheet 5519 shows a 1-inch grout to improve the bearing of the angle clips per Drawing 2323-S-0913 Detail "6". Grout was not used and this condition was not recognized by the QC inspectors.

Cable tray hangers of Sheets 5491, 5498, and 5499 of FSE-00159 are to be attached to the concrete per Note 1. Note 1 refers to Drawing FSE-00179 for specific requirements. As-built, these hangers have welded the clip angle at one end to a plate embedded in the concrete. At the other end, a Hilti bolt is used. FSE-00179 does not provide for this option in 2-bolt clips. This substitution was not identified by the QC inspection.

Cable tray hangers FSE-00159, Sheet 6642 refers to Detail "A" of Drawing 2323-E1-0502-01-S and Sheet 6645 refers to detail "G" for assembly details. Both details refer to "Case SP1" of Drawing 2323-S-0903 for additional instructions. In all these drawings, the welds where the support joins the clip angle are shown to be 4-inches long in the vertical direction. As-built, the welds are horizontal and less than the 4-inch length required on the vertical edges. This condition was not identified by the QC inspectors.

The licensee's engineers stated, and the NRC inspectors agreed, that the hangers discussed above are adequate for use as-built. Only the bevel washer will be reworked to correct its misalignment. Changes were being prepared to correct the documentation for these hangers to reflect the as-built condition. The design document or instruction used to install and inspect the hangers could not be identified.

The above are examples of failure of QC inspectors to properly inspect cable tray hangers and to verify conformance with approved drawings.

This is a violation, Severity Level IV. (445/8416-01)

c. Electrical Conduit and Conduit Supports

The NRC inspectors physically walked down and inspected 33 conduit runs, approximately 200 conduit supports, totaling approximately 1500 linear feet of conduit. The NRC inspectors utilized the current approved design information and the latest QC inspection report to determine the adequacy of installation and accuracy of documentation. The conduits inspected, including supports and fixtures, were properly installed and accurately documented.

No deviations or violations were identified.

d. Electrical Separations

The NRC inspectors observed separation requirements during the raceway and conduit inspection. In addition, several hours were spent walking down the 860' and 905' elevations of containment specifically inspecting to the requirements of IEEE 384.

The following list of equipment was opened and inspected for separation, terminations, and cleanliness:

<u>Valves</u>	<u>Junction Boxes</u>	<u>Cabinets</u>
MOV 1 HV-6075	JB1C-566G	RPI Cabinet A
MOV 1 HV-6074	JB1C-3030Ø	RPI Cabinet B
MOV 1 HV-6076	JB1C-3031G	Thermocouple
	JB1C-438Ø	Ref. Junction
	JB1C-442Ø	Box

The NRC also inspected Valve MOV 1RH-8702 and witnessed the change of the torque switch setting required by Traveler MEV 84-0607-5800 and DCA 19537 R-1.

All of the above equipment was properly terminated, exhibited good craftsmanship, and was properly maintained and clean with the exception of the red position indication (RPI) cabinets.

The RPI cabinets were not terminated yet. The cables were in the cabinets with the plugs attached, but the drawers and cards were not installed. The plugs were sealed in plastic bags. The RPI cabinets were dirty inside and required cleaning. These cabinets are non Class 1E cabinets, and due to the status of the cabinets, the lack of cleanliness does not have safety significance.

The NRC inspector reviewed the procurement testing and installation of the separation blanket material utilized at CPSES to meet the barrier requirements of Regulatory Guide 1.75 and the thermal radiation shield requirements of 10 CFR Part 50, Appendix R. See data sheets in Attachment 1 of this report for the details of this inspection and review.

No deviations or violations were identified in this area.

## 8. Equipment

### a. Hydrogen Recombiners

The NRC inspectors examined the maintenance records and installation of the hydrogen recombiners. Installation, foundation, and anchor bolts were found to be in accordance with the installation drawings. Type Class "B" storage was required. Maintenance records indicated that maintenance had been performed properly during storage in the warehouse. In place maintenance is required every 2 years. It had not yet been performed because the equipment had been installed for less than 2 years.

The NRC inspectors' review of the procurement package revealed out-of-specification voltage readings for comparator output voltage. The licensee was informed and obtained a modified quality release from Westinghouse stating that voltages were satisfactory. Discussions with startup and Westinghouse personnel revealed that voltage readings do not affect the operation of the equipment, and that the equipment has successfully completed preoperational testing.

The reason for failing to identify the out-of-specification reading during the Westinghouse and QA review of the data for the quality release could not be immediately determined. The matter was referred to the site QA manager who began an inquiry into the circumstances. This matter is considered unresolved. (445/8416-04)

b. Equipment Procurement Documentation

This portion of the inspection was conducted to review the procurement documentation of three components in containment. The components selected were:

- Hydrogen Recombiners (905' level) (two each)
- Motor Operated Block Valves - pressurizer relief system (905' level) (two each)
- Air operated, pressurizer spray valves - pressurizer spray line (905' level) (two each)

The inspection concentrated on the procurement specifications, purchase orders, and receiving inspection reports. ANSI N45.2.13 was used as the acceptance criteria. Specifically, the following attributes were looked for in the documentation.

- Scope of work
- Technical requirements
- QA program requirements
- Right of access
- Documentation requirements
- Nonconformance requirements
- Review of procurement documents (equipment supplies)



The NRC inspector determined that the documentation was available on site. All documentation reviewed was found to be acceptable in accordance with the acceptance criteria. Purchase specifications will be retained under TUGCO Nuclear Engineering (TNE) for configuration control for future purchase of replacement units, if required, and purchase of repair parts.

No deviations or violations were identified.

9. As-Built Design Documentation Program

- a. General - A review of the licensee's program for verification and control of design documents was conducted. Specific drawings and diagrams were selected by the manager, nuclear operation and TNE for updating prior to fuel loading. These drawings and diagrams are listed below. TNE is in the process of assuming responsibility for CPSES drawings and specifications as they are verified by the AE, G&H. After design verification, the drawings are then issued as "CP-" drawings.

The purpose of this portion of the inspection was to determine (1) adequacy of procedures governing the generation and completion of as-built design documents (drawings and specifications) and (2) the schedule for completion of the as-built drawing documentation.

- b. Procedures - Procedures governing the generation and completion of as-built design documents, reviewed by the NRC inspector, are listed in Attachment 1. The procedures meet the applicable requirements of ANSI N45.2, N45.2.11, and N45.2.9. It was verified that CMCs and DCAs affecting G&H design documents are being reviewed and, where indicated, included in the revised drawings and specifications. G&H Project Guide 24, "Processing CMCs and DCAs," includes a "Change Verification Checklist". This form is used as engineering control for the review of CMCs and DCAs. G&H engineering determines if the change (CMC or DCA) will be incorporated into the drawing, and documents that decision on line 6 of this form. When all outstanding CMCs and DCAs are reviewed and incorporated into the design documents, TNE plans to issue engineering change notices when system design changes are required.

- c. Schedule - The following diagrams and drawings were included in the licensee's schedule:

- Mechanical Flow Diagrams (M1-200 and 300 series)
- Electrical One-Line Diagrams, 3-Line Diagrams, Electrical Wiring and Connection Diagrams (E1-001 through E1-200 series)

- Instrument and Control Diagrams (M1-2200 and 2300 series)
- Instrument Equipment List (MI-2400 series)
- Instrument Location Drawings and Tab Sheets (MI-2500 and MI-2600 series)
- Safety-Related Vendor Drawings

Of the 4537 drawings originated by G&H, 4422 had been reissued by TUGCO as of April 21, 1984.

Drawings that have outstanding design changes at fuel load will be identified in the MDB for updating prior to commercial operation. Additional drawings will be updated after commercial operation. These were identified as follows:

- Electrical Physical Drawings (E1-300 through E1-800 series)
  - Electrical Fire Protection Detection Drawings (E1-2000 series)
  - Plant Architectural Drawings (G&H "A" prefix drawings)
  - Non-Safety Related Vendor Drawings
  - Electrical Lighting Drawings (E1-900 series)
  - Electrical Material List (E1-1800 series)
  - Computerized Cable and Raceway Schedule (E1-1700) and other miscellaneous (E1-1700) series drawings
  - Instrument Rack Wiring Drawings (E1-2800 series)
  - Instrument Installation Drawings (M1-2100 series)
- d. Program Conclusions - The NRC inspection concluded that the program for updating and providing as-built design drawings and specifications is adequate and meets regulatory requirements and FSAR commitments.
- e. Implementation - Seven drawings under control of TNE were selected for review to determine if they were being controlled in accordance with the approved procedures.

When selected controlled drawings in the control room were examined, three of the seven, M1-0301, M1-261 and M1-262, were determined not to be of the correct version.

TUGCO document control center (DCC) (Operations) has the responsibility for maintaining the control room drawing file (003) current. TUGCO DCC had received the aperture cards, date stamped May 22, 1984, for the current revision of the drawings and was in the process of producing copies for distribution. (Note: The inspection was conducted the afternoon of June 6, 1984; drawings had been updated May 15, 1984.)

In addition, the NRC inspector reviewed the design change log sheets (Construction DCC) and DCA log file (TUGCO DCC) for the selected drawings. It was found that these two records do not reflect the same status. Further information regarding this matter was found in Quality Surveillance QSR-84-011. The findings resulted in a Corrective Action Request (CAR) 84-001. This surveillance report stated that ". . . the design change logs for design drawings and the specification log sheets for design specifications, which are maintained by the Operations Document Control Center, do not reflect the same document status as that of TUSI Nuclear Engineering. Due to this condition, the correct status of design drawings and specifications distributed by Operations DCC is indeterminate."

A permanent solution to the deficiency identified in CAR 84-001 was to have been implemented by June 1, 1984. Implementation was delayed until June 30, 1984 (TIM-840667). The NRC inspector found on June 6, 1984, that the control problem (as stated in the CAR) still existed. A similar problem with a manual system had been identified in a surveillance conducted in October 1983.

Two aspects of document control were thus identified:

- (1) The actual status of design drawings can not be determined. This problem had been identified by the licensee in surveillance reports, and action had been initiated, but had not been completed. Control of documents and changes to these documents are required by 10 CFR 50, Appendix B, Criterion VI as well as corrective action required by Criterion XVI. The commitment for providing controlled documents was established in the FSAR, Section 17.2.6.
- (2) Some design drawings available for use by control room personnel were out of date. The operations procedure (STA-306) governing the control of drawings did not have a specific time limit for issuance of revised drawings after receipt of aperture cards. However, based on the date of drawing revision (5/15/84) and "completion" of aperture cards (5/22/84), updated versions of the drawing could

reasonably be expected to have been provided prior to June 6, 1984, the date of the inspection. Lack of adequate measures to effectively control the issuance of documents affecting quality is a violation of 10 CFR Part 50, Appendix B, Criterion VI.

This is a violation. (445/8416-02)

10. QC Inspector Qualifications

The NRC inspectors selected eight QC inspectors for verification of their inspector qualifications. The names selected were chosen from inspection records used in other areas of this report. The names included two electrical inspectors, three electrical (mechanical) inspectors, and three mechanical inspectors.

The verification included checking that qualifications were made in accordance with current procedures and that the inspector was indeed qualified at the time selected inspections were performed. The NRC review found one inspector who was not qualified to perform inspection in accordance with QI-QP-11.10-2. The selected inspection was performed on September 1, 1983, while the inspector did not become qualified to perform this inspection until December 1983. This situation had already been identified by the licensee in NCR M83-03049 dated November 15, 1983. Appropriate action was being taken by the licensee to resolve the NCR. The licensee has identified all the inspections for which the inspector was not qualified, and a reinspection program is underway. This reinspection is being done on a room-by-room basis.

During this inspection, the NRC inspectors had informal discussions with QC, engineering, electrical test group, and documentation personnel to determine job knowledge and overall familiarity with drawings, procedures, and the day-to-day mechanics of their jobs. In all cases, the people were knowledgeable and professional.

No violations or deviations were identified in this area.

11. Miscellaneous

(Closed) Unresolved Item (8323-06): QA Audits - Formal audits have been conducted by TUGCO regarding the construction turnover completion activities. The NRC inspector reviewed the following audit reports:

TCP-80	Fuel Building, August 15-26, 1983
TCP-88	Auxiliary and Safeguards Building, October 31 - November 15, 1983



TCP-95	No. 1 Diesel Generator Building, February 20-24 and February 27-March 2, 1984
TCP-103	Auxiliary Building, May 29 and April 24-May 4, 1984

The audit reports indicate satisfactory implementation of the room turnover process. Additional audits have been scheduled. This item is considered closed.

12. Summary of Inspection Results

This special inspection identified two violations. Only violation 445/8416-01 (cable tray hanger inspection) pertains to the construction completion and room/area inspection of the Unit 1 reactor containment building.

13. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether the items are acceptable or not. There were two new unresolved items identified in paragraphs 4.b.(3) (445/8416-03) and 8.a (445/8416-04).

14. Exit Interview

On June 20, 1984, the NRC inspector and other members of the Region IV staff, including the resident inspectors met with the licensee representatives as denoted in paragraph 1 of this report. The NRC inspector discussed the findings of this report including the two violations. The licensee representative acknowledged the violations.

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: \_\_\_\_\_

GENERAL PROCEDURES AND INSTRUCTIONS UTILIZED  
IN THE PIPE SUPPORT AREA OF THIS INSPECTION.

CP-QAP-11.1

QI-QAP-11.1.26

QI-QAP-11.1.28

QI-QAP-11.1.28A

QI-QAP-11.1.38.

CP-QAP-8.1

QI-QAP-11.2.28

CP-QAP-12.1

CP-QAP-16.1

CP-QAP-17.1

QI-QP-11.14-1

QI-QP-11.14-7

CP-QP-16.0

CCP-21

CP-QP-15-5

CEI-20

QI-QP-11.2-7

INSP. RPT. NO: 84-16

PAGE: A11-0

INSPECTOR: MARTIN/BERG

## GENERAL INSPECTION DATA SHEET

INSPECTION ELEMENT: Reactor Coolant System: DATE: 6/20/84Foundations; Safety Related Structures;Safety Related Components; InstrumentationATTRIBUTES: CONFORMANCE TO APPLICABLE DRAWINGS/SPECIFICATIONS.ACCEPTANCE CRITERIA: 7SAR (Section 5.1-5.4); DRAWINGS AND SPECIFICATIONSRESULTS: IN GENERAL, ALL REQUIREMENT WERE MET. EXCEPTIONS:  
NO RECORD WAS FOUND OR PROVIDED FOR THE INSTALLATION OF  
THE CROSSOVER LEG RESTRAINT BASESRESOLUTION: NOTICE OF VIOLATION WAS ISSUED AS PART OF  
INSP. REPORT 50-445/84-08INSP. RPT. NO: 50-445/84-16 PAGE: ATT 1-1 INSPECTOR: OBERG/MARTIN

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: RCS Documents Reviewed:

Purchase Order (P.O.) 35-1195-6P12

Concrete Pan Package No 101-7853-001

FSAR Section (51-54)

Drawings: BRP-RC-1-520-001 Rev 6 Reactor Coolant  
Loop Layout and Details

INSP. RPT. NO: 50-445/84-16 PAGE: A11-2 INSPECTOR: OBERG/MARTIN



## INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: RCS DOCUMENTS REVIEWEDDRAWINGS:2327-SI-0550 RB Internal Structure Equipment Supports  
and Foundations, Sheet 12327-SI-0550 RB Internal Structure Equipment Supports  
and Foundations, Sheet 22327-SI-0528 RB INTERNAL STRUCTURE, EL 851'6" + 873'-0" OUTLINE  
(SECT 303 Pressurizer anchor bolts)

2327-SI-0519 RB INTERNAL STRUCT. EL 808'0" OUTLINE

SCB-10519 CONST JOINT PLAN - EL 808'-0"

WDWG 1457F29 RCS EQUIPMENT SUPPORT (SG+RC P)

WDWG 118E03 PRESSURIZER RELIEF TANK.

FSC-00348 FOUNDATION RESTEEL PROBLEMS (#1 S.G. + RCP)  
(SHEET 1, 2, 3 + 4)AFCO STEEL DWG 76-519(RV) CROSSOVER LEG RC RESTR.  
#113, 112INSP. RPT. NO: 50-445/84-16 PAGE: Am2-5 INSPECTOR: OBEEG/MATW

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: \_\_\_\_\_

DCA 1506 FOUNDATIONS FOR SG, RCP & CROSS OVER LEG  
RESTRAINT BASES

DCA 1960 SHEAR LUGS ON CROSSOVER LEG RESTRAINTS

DCA 11,225 CROSSOVER LEG RESTRAINT - PIPE SUPPORT

ATTACHMENT

DCA 12802 ATTACHMENT TO CROSSOVER LEG RESTRAINTS

TRAVELER ME 81-2154-5500 GROUT STEAM GENERATOR BASES

GROUT CARD NO 186

INSPECTION REPORT IR C5558 GROUT OF EQUIPMENT BASE

INSP. RPT. NO: 50-445/8416 PAGE: Att-4 INSPECTOR: MARTIN/OBERG

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: RCS FOUNDATIONS

• CONCRETE POUR CARDS - 101-9812-002 + 003 (6/1/78)

STEAM GENERATOR CROSSOVER LEG RESTRAINTS FOUNDATION

RC PUMP CROSSOVER LEG RESTRAINTS FOUNDATIONS

(RCB #1, COMP #1)

(Following apply to both placement)

- QA Concrete Placement Checklist 6/1/78

- QA Reinforcing Steel, Electrical, Mechanical and  
Embedded Item Checklists 6/1/78

- Concrete Acceptance Test Report HCP 38266 6/2/78

- Concrete Placement Report (mix 129) 6/1/78

- Batch Plant Report Tickets: 40506; 42486; 42497

- Concrete Compression Test Report: HCP 38383 6/5/78

- " " " " HCP 38552 6/8/78

- " " " " HCP 39278 6/29/78

- Concrete Curing Checklist (7 days) 6/5/78 (Taken out after 4 days)

- " " Report Temperature Record 6/8/78

- QC Concrete Curing and Inspection Report HCP 39278 7/11/78

- Concrete Design Mix Proportion Report (mix #129/128)

3/17/77

INSP. RPT. NO: 50-445/84-16 PAGE: A11-5 INSPECTOR: MARTIN/OREEG

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: RCS CLEANLINESS (HALOGEN)

REVIEWED THE FOLLOWING DOCUMENTS:

- CONSTRUCTION TRAVELERS FOR INSTALLATION OF  
RCS INSULATION: MEB2-2519 THRU 2522-5501  
MEB2-2534 THRU 2537-5501

- QC Inspection Reports AM-03765; 04704;  
05199; 05716

- NCR-M-83-00509

- Procedures:

CP-CPM 6.12 (R0) 7/22/82

CP-CPM 10.2 (R2) 7/11/83

QI-QP-11.1-65 (R4) 12/11/79 Determination of Surface  
Contamination of Fluoride and Chloride on Stainless  
Steel

INSP. RPT. NO: 50-445/8416 PAGE: A-1-6 INSPECTOR: MARTIN/OBERG



INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: RCP CASING INSTALLATION Doc-  
UMENTS REVIEWED:

TRAVELER ME-78-00Y-5505 (REV 1-5)

EQUIPMENT SUPPORT MODIFICATION: TBX-M-132;

TUF-4598; TBX-M-142; TWX 710-797-3658

DCA 11,312-

INSP. RPT. NO: 50-445/8416 PAGE: Att 2-7 INSPECTOR: MARTIN/OBERG

INSTRUMENTATION INSPECTION DATA SHEET

ROOM CONTAINMENT

DATE 6/20/84

INSTRUMENTATION NUMBER/SYSTEM MAIN COOLANT FLOW TRANSMITTERS  
1-FT-414; 1-FT-415; 1-FT-416 (SPIN # TBX-QBELDP-01)

ATTRIBUTES

TAGGING; ROUTING; PROPER SLOPE; SUPPORTS; SUPPORT  
SPAN; VENT/DRAIN VALVES; DOCUMENTATION

ACCEPTANCE CRITERIA:

FSAR SECTION: SECTION 7.0

SPECIFICATION: 2323-MS-625 INSTRUMENT TUBING + FITTINGS  
(NUCLEAR SAFETY RELATED)(REV 3)  
2323-MS-625A FIELD INSTRUMENT RELOCATION CRITERIA

RESULTS: ROOT VALVES ARE CORRECT, TUBING CORRECT  
FOR THE ABOVE ATTRIBUTES LISTED ABOVE. HOWEVER,  
NUMBERS ON INST ROOT VALVE TAGS WERE FOUND  
TO BE INCORRECT. (BRP-EC-1-RB-044)

<u>IN FIELD:</u>	<u>415/8060A</u>	<u>415/8059A</u>	<u>414/8061A</u>
<u>DWGS + DCA REQ:</u>	<u>414/8060A</u>	<u>415/8059A</u>	<u>416/8061A</u>

RESOLUTION: DETERMINED THAT INSTRUMENT LINES WENT TO  
CORRECT FLOW TRANSMITTER. ERROR WAS IN TAGGING ONLY.  
NCR 1-84-007045 HAD INCLUDED THE ABOVE VALVES.  
THE NCR WAS CLOSED/VERIFIED ON 6/11/84 (DCA 12,212)  
ITEM CLOSED.

INSPECTION REPORT NO. 50-445/8416 PAGE NO. Att 8 INSPECTION OBERG/MARTIN

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: 1-FT-415/416/414 INSTRUMENTATION - FLOW TMS

REVIEWED FOLLOWING DOCUMENTS:

• RIR 16194 ; MR R CP8982

• IR-I: IR-I-1812 } FT-415 LP  
IR-I-0482 }

IR-I-1806 } FT-414 LP  
IR-I-2986 }

IR-I-1811 - FT-416 HP

• ASSOCIATED WELD DATA CARDS

DCA/CMCA:

• DCA-13,602 TO MSG25A FOR SEPARATION FOR  
COMMON TAP OF FT-414, 415, 416 (HP)

• DCA-16,614 ROOT VALUE NUMBER CHANGE

• CMC 66571, 66572, 66576, 66696, 66602,  
66575 R1, 57455 R2,

• DCA-12,212

DRAWINGS: BEP-RCI-RB-044 Rev 3

2323-MI-250303 ; 2323-MI-2104-07

FSI-1-502 ; 503 ; 504 ; 505

INSP. RPT. NO: 50-445/8416 PAGE: A02-9 INSPECTOR: MARTIN/OBERG

## INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: ITE-410B, 411B, 413B - INSTRUMENTATION• CONST OP. TRAVELERS-MER2-2307-5500 - INSTALLATIONOF THERMOWELL ITE-413BMER2-2306-5500-ITE-411B THERMOWELLMER2-2306-5500-ITE-410B THERMOWELL• RIR 23528/MRR CPI2391-ITE 411B (SPIN # TRX-  
DAELRT-01 FOR RTD• FSI-1-505 RO (HP SIDE OF FLOW INSTRUMENTS)MANUFACTURING RECORD SHEET - 1 FT 415/414/416 (39 WELDS)WELD DATA CARDS FOR; FWI through-39MT/PT REPORTSQA DEPT VISUAL EXAM CHECKLISTSWELD FILLER MATERIAL LOGSINSP. RPT. NO: 50-445/8416 PAGE: A-1-10 INSPECTOR: MARTIN/OBERG



SUPPORT/HANGER INSPECTION DATA SHEET

ROOM CONTAINMENT BLDG 905' & 860' LEVELS

DATE 6/20/84

SUPPORT NUMBER/CLASS/SYSTEM: CONTAINMENT SPRAY

DRAWING: BRHL-CT-1-RB-031 SUPPORTS; CT-1-051-404-C72R, CT-1-051-405-C72K,  
CT-1-051-405-C72K, CT-1-051-403-C72R, CT-1-051-407-C72R, CT-1-051-417-C72K  
CT-1-051-406-C72K, CT-1-051-409-C72R

ATTRIBUTES:

WELDING	HARDWARE	CONNECTIONS (WALL/CEILING, ETC)
PHYSICAL CONDITIONS (DIMENSIONS/LOCATIONS)	ATTACHMENTS	BASE PLATES
WORKMANSHIP	CLEARANCES	GROUTING

ACCEPTANCE CRITERIA

FSAR SECTION: 3.6B

SPECIFICATION(S) MS-46A (Nuclear Safety Class Hanger & Supports)  
MS-94 (Pipe Whip Restraints)

ASME SECT III, Subsection NF; VCD/DRD's; Procedures: QI-QAP 11.1-28

RESULTS THE NRC INSPECTORS REVIEWED AND OBSERVED 15 SUPPORTS AND APPROXIMATELY  
112 FEET OF PIPING. THIS INSPECTION INCLUDED <sup>21</sup> NOZZLES PER DRAWING BRP-CT-  
1-RB-030. THERE WERE NO APPARENT DISCREPANCIES NOTED.

RESOLUTION: \_\_\_\_\_

SUPPORT/HANGER INSPECTION DATA SHEET

ROOM \_\_\_\_\_

DATE 6/20/84

SUPPORT NUMBER/CLASS/SYSTEM: CONTAINMENT SPRAY (CONTINUED)

DRAWING: BRHL-CT-1-RB-020 SUPPORT: CT-1-051-401-C72S

DRAWING: BRHL-CT-1-RB-030 SUPPORTS: CT-1-124-408-C72R, CT-1-124-417-C72R

CT-1-124-007-C72R, CT-1-124-414-C72R, CT-1-124-415-C72K, CT-1-124-413-C72R

ATTRIBUTES:

WELDING	HARDWARE	CONNECTIONS(WALL/CEILING,ETC)
PHYSICAL CONDITIONS(DIMENSIONS/LOCATIONS)	ATTACHMENTS	BASE PLATES
WORKMANSHIP	CLEARANCES	GROUTING

ACCEPTANCE CRITERIA

FSAR SECTION: 3.6B

SPECIFICATION(S) MS-46A (Nuclear Safety Class Hanger & Supports)  
MS-94 (Pipe Whip Restraints)

ASME SECT III, Subsection NF; VCD/DRD's; Procedures: QI-QAP 11.1-28

RESULTS

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RESOLUTION: \_\_\_\_\_

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INSPECTION REPORT NO. 84-16

PAGE NO. Att 1-12

INSPECTOR MARTIN SKOW

SUPPORT/HANGER INSPECTION DATA SHEET

ROOM CONTAINMENT BLDG 860 + 905 LEVELS

DATE 6/20/84

SUPPORT NUMBER/CLASS/SYSTEM: FEED WATER

DRAWING: BRHL-FW-1-RB-005A SUPPORTS: FW-1-095-700-C62K, FW-1-095-009-C62K,  
FW-1-095-010-C62K, DRAWING: BRHL-FW-1-RB-003 SUPPORTS: FW-1-017-708-C72K,  
FW-1-017-709-C72K, FW-1-017-006-C72S, FW-1-017-711-C72K, FW-1-017-710-C72K

ATTRIBUTES:

WELDING	HARDWARE	CONNECTIONS(WALL/CEILING,ETC)
PHYSICAL CONDITIONS(DIMENSIONS/LOCATIONS)	ATTACHMENTS	BASE PLATES
WORKMANSHIP	CLEARANCES	GROUTING

ACCEPTANCE CRITERIA

FSAR SECTION: 3.6B

SPECIFICATION(S) MS-46A (Nuclear Safety Class Hanger & Supports)  
MS-94 (Pipe Whip Restraints)

ASME SECT III, Subsection NF; VCD/DRD's; Procedures: QI-QAP 11.1-28

RESULTS THE NRC INSPECTORS REVIEWED AND OBSERVED 24 SUPPORTS  
AND APPROXIMATELY 210 FEET OF PIPING. THERE WERE NO APPARENT  
DISCREPANCIES NOTED.

RESOLUTION: \_\_\_\_\_

INSPECTION REPORT NO. 84-16

PAGE NO. Att 1-13 INSPECTOR MARTIN  
SKOW

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: CONTAINMENT BUILDING 860 + 905 LEVELS

FEED WATER SYSTEM SUPPORT NUMBERS (CONTINUED) FW-1-017-712-C72K,

FW-1-017-007-C72S, FW-1-017-008-C72S, FW-1-017-713-C62R,

DRAWING: BRHL-1-RB-006B SUPPORTS: FW-1-096-037-C62R, FW-1-096-038-C62R,

FW-1-096-039-C62K. DRAWING: BRHL-FW-1-RB-004 SUPPORTS:

FW-1-018-005-C72S, FW-1-018-708-C72K, FW-1-018-007-C72S, FW-1-018-709-C72K,

FW-1-018-710-C72K, FW-1-018-711-C72K, FW-1-018-709-C72K,

FW-1-018-029-C62K, FW-1-018-009-C72S, FW-1-018-713-C62R.

INSP. RPT. NO: 84-16

PAGE: APP-14

INSPECTOR: MARTIN

SKOW



SUPPORT/HANGER INSPECTION DATA SHEET

ROOM REACTOR COMPARTMENT BLDG.

DATE 6/20/84

SUPPORT NUMBER/CLASS/SYSTEM: PRESSURIZER RELIEF - RC-1-097-003-C86K,  
RC-1-097-002-C86K, RC-1-097-001-C86K, RC-1-115-005-C76S,  
RC-1-115-008-C76K, RC-1-115-C76E, RC-1-115-014-C76K  
RC-1-115-018-C66K, RC-1-115-017-C76S, RC-1-115-019-C66K (CONTD)

ATTRIBUTES:

WELDING                      HARDWARE                      CONNECTIONS (WALL/CEILING, ETC)  
PHYSICAL CONDITIONS (DIMENSIONS/LOCATIONS) ATTACHMENTS                      BASE PLATES  
WORKMANSHIP    CLEARANCES                      GROUTING

ACCEPTANCE CRITERIA

FSAR SECTION: 3.6B § 5.2

SPECIFICATION(S)      MS-46A (Nuclear Safety Class Hanger & Supports)  
   MS-94 (Pipe Whip Restraints)

ASME SECT III, Subsection NF; VCD/DRD's; Procedures: QI-QAP 11.1-28

RESULTS THE NPC INSPECTORS FOUND ALL OF THE ABOVE  
SUPPORTS TO BE INSTALLED IN NONCONFORMANCE WITH  
THE VENDOR CERTIFIED DRAWINGS AND THE APPLICABLE  
SPECIFICATION AND PROCEDURES. MOST OF THESE  
SUPPORTS WERE CLASS V SUPPORTS, HOWEVER FOUR OF  
THE SUPPORTS WERE CLASS I SUPPORTS. THE NPC (CONTD)

RESOLUTION: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Pressurized Relief System Supports Continued:

RC-1-110-001-C86K, RC-1-146-001-C81S, RC-1-<sup>146</sup>002-002-C81S  
RC-1-146-003-C81K, AND RC-1-146-004-C81K.

Results Cont'd: INSPECTORS ALSO INSPECTED THE PIPING  
WORK ASSOCIATED WITH THESE SUPPORTS. THE DOCUMENT-  
ATION OF THE SUPPORTS AND PIPING WAS  
COMPLETELY REVIEWED AND FOUND TO BE  
SATISFACTORY.

INSP. RPT. NO: 30-445/84-16 PAGE: 1112-16 INSPECTOR: MARTIN/DEEG

SUPPORT/HANGER INSPECTION DATA SHEET

ROOM CONTAINMENT UNIT I

DATE 6/23/84

SUPPORT NUMBER/CLASS/SYSTEM: MAIN STEAM SYSTEM SUPPORTS/STRUCTURES

MSI-004-007-C72S ; MSI-001-904-C77W ; MSI-003-009-C72K ;

MSI-003-010-C72K ; MSI-001-005-C72K ; MSI-001-901-C77W

ATTRIBUTES:

WELDING

HARDWARE

CONNECTIONS (WALL/CEILING, ETC)

PHYSICAL CONDITIONS (DIMENSIONS/LOCATIONS) ATTACHMENTS

BASE PLATES

WORKMANSHIP

CLEARANCES

GROUTING

ACCEPTANCE CRITERIA

FSAR SECTION: 3.6B

SPECIFICATION(S) MS-46A (Nuclear Safety Class Hanger & Supports)

MS-94 (Pipe Whip Restraints)

ASME SECT III, Subsection NF; VCD/DRD's; Procedures: QI-QAP 11.1-28

RESULTS Inspection results indicate that supports and  
whip restraints inspected were in accordance with code,  
drawing and specification requirements.

RESOLUTION: N.A.

## INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: MAIN STEAM STEAM SYSTEM SUPPORT DOCUM.  
ENTATION REVIEWED

- DOCUMENTATION PACKAGE: MSI-002-010-C62K;  
 MSI-004-003-C725; MSI-004-007-C72K; MSI-  
 001-901-C77W; MSI-003-009-C72K; MSI-003-  
 010-C72K (Package included QC Checklist; vendor  
 Certified Drawings; Weld Data Cards; Weld Filler Material  
 Log; IEs; Travelers; CMCs; NPSI Snubler Installation Traveler)
- PROCEDURES: CP-CPM-6.9 General Piping Procedure  
 CCP-22 Structural Steel Erection  
 CP-CPM-9.10 Fabrication of ASME-  
 Related Component  
 Supports

|| CONTINUED: MP/PT Report

## • DRAWINGS:

BRHL-MS-1-RB-001/002/003/004

BRP-MS-1-RB-001/002/003/004

INSP. RPT. NO: 50-445/8416 PAGE: A12-10 INSPECTOR: OBERG/MARTIN



PENETRATION INSPECTION DATA SHEET

ROOM Reactor Bldg., 860 Level DATE 6/20/84

PENETRATION NUMBER/TYPE MIII-18/Mechanical

Hydrogen Purge Supply

ATTRIBUTES:

WELDING/NDE

PHYSICAL CONDITIONS(DIMENSIONS & LOCATIONS)

CRAFTSMANSHIP

~~LEAK RATE TEST (10<sup>-2</sup> to 10<sup>-3</sup> cm<sup>3</sup>/s)~~

ACCEPTANCE CRITERIA:

FSAR Sections: 3.8.1.1.6  
3.8.2.6

6.2.2.2 (Tables 6.2.4-1)  
SPECIFICATIONS: Electrical ES-12/12A; Mechanical MS-74  
RG: 1.63 (Electrical; IEEE 317)

ASME Section III, NE for Class MC Components

PROCEDURES N/A

RESULTS Dimensions and location were found to be in accordance with 2323-M4-0502 and 2323-M1-0503. Welding and craftsmanship had been performed in accordance with the acceptance criteria and had been accurately documented

RESOLUTION N/A

PENETRATION INSPECTION DATA SHEET

ROOM Reactor Bldg., 860 Level DATE 6/20/84

PENETRATION NUMBER/TYPE MI-5 / Mechanical

Feedwater to Steam Generator #1

ATTRIBUTES:

WELDING/NDE

PHYSICAL CONDITIONS (DIMENSIONS & LOCATIONS)

CRAFTSMANSHIP

~~LEAK RATE TEST ( $10^{-2}$  STUCKS/S)~~

ACCEPTANCE CRITERIA:

FSAR Sections: 3.8.1.1.6

3.8.2.6

6.2.2.2 (Tables 6.2.4-1)

SPECIFICATIONS: Electrical ES-12/12A; Mechanical MS-74

RG: 1.63 (Electrical; IEEE 317)

ASME Section III, NE for Class MC Components

PROCEDURES N/A

RESULTS Dimensions and location were found to be in accordance with 2323-MI-0502 and 2323-MI-0503. Welding and craftsmanship had been performed in accordance with the acceptance criteria and had been accurately documented.

RESOLUTION N/A

INSPECTION REPORT NO 50-445/84-16

PAGE NO A11-20 INSPECTOR Oberg

Bennett

PENETRATION INSPECTION DATA SHEET

ROOM Reactor Bldg., 860 Level DATE 6/20/84

PENETRATION NUMBER/TYPE MV-14 / Mechanical  
Containment Pressure Relief

ATTRIBUTES:

WELDING/NDE  
CRAFTSMANSHIP

PHYSICAL CONDITIONS (DIMENSIONS & LOCATIONS)  
~~LEAK RATE TEST ( $10^{-2}$  std cm<sup>3</sup>/s)~~

ACCEPTANCE CRITERIA:

FSAR Sections: 3.8.1.1.6  
3.8.2.6  
6.2.2.2 (Tables 6.2.4-1)  
SPECIFICATIONS: Electrical ES-12/12A; Mechanical MS-74  
RG: 1.63 (Electrical; IEEE 317)

ASME Section III, NE for Class MC Components

PROCEDURES N/A

RESULTS Dimensions and location were found to be in accordance with 2323-M1-0502. Welding and craftsmanship had been performed in accordance with the acceptance criteria and had been accurately documented.

RESOLUTION N/A

PENETRATION INSPECTION DATA SHEET

ROOM Reactor Bldg., 860 Level DATE 6/20/84

PENETRATION NUMBER/TYPE IE-18 / Electrical

ATTRIBUTES:

~~WELDING/NDE~~  
CRAFTSMANSHIP

PHYSICAL CONDITIONS (DIMENSIONS & LOCATIONS)  
LEAK RATE TEST ( $10^{-2}$  std CM<sup>3</sup>/s)

ACCEPTANCE CRITERIA:

FSAR Sections: 3.8.1.1.6  
3.8.2.6  
6.2.2.2 (Tables 6.2.4-1)  
SPECIFICATIONS: Electrical ES-12/12A; Mechanical MS-74  
RG: 1.63 (Electrical); IEEE 317

ASME Section III, NE for Class MC Components

PROCEDURES EI-9 Rev 2 1/19/83 Leak Rate Testing of Electrical Penetration Assemblies and Header System

RESULTS Dimensions and location were found to be in accordance with FSE 00182. Maintenance and leak rate testing had been performed in accordance with the acceptance criteria and procedures, and had been accurately documented. There was no evidence of insulation cracking on penetration cabling.

RESOLUTION N/A



PENETRATION INSPECTION DATA SHEET

ROOM Reactor Bldg., 860 Level DATE 6/20/84

PENETRATION NUMBER/TYPE IE-17 / Electrical

ATTRIBUTES:

~~WELDING/NDE~~

PHYSICAL CONDITIONS (DIMENSIONS & LOCATIONS)

CRAFTSMANSHIP

LEAK RATE TEST ( $10^{-2}$  stdCM<sup>3</sup>/s)

ACCEPTANCE CRITERIA:

FSAR Sections: 3.8.1.1.6

3.8.2.6

6.2.2.2 (Tables 6.2.4-1)

SPECIFICATIONS: Electrical ES-12/12A; Mechanical MS-74

RG: 1.63 (Electrical); IEEE 317

ASME Section III, NE for Class MC Components

PROCEDURES EI-9 Rev 2 1/17/83 Leak Rate Testing of Electrical Penetration

Assemblies and Header System

RESULTS Dimensions and location were found to be in accordance with

FSE 00182. Maintenance and leak rate testing had been performed in

accordance with the acceptance criteria and procedures, and had been

accurately documented. There was no evidence of insulation cracking

on penetration cabling.

RESOLUTION N/A

INSPECTION REPORT NO 50-445/84-16

PAGE NO. Am 1-23 INSPECTOR Oberg  
Bennett

PENETRATION INSPECTION DATA SHEET

ROOM Reactor Bldg., 860 Level DATE 6/20/84

PENETRATION NUMBER/TYPE IE-6 / Electrical

ATTRIBUTES:

~~WELDING/WDE~~

CRAFTSMANSHIP

PHYSICAL CONDITIONS (DIMENSIONS & LOCATIONS)

LEAK RATE TEST ( $10^{-2}$  std CM<sup>3</sup>/s)

ACCEPTANCE CRITERIA:

FSAR Sections: 3.8.1.1.6

3.8.2.6

6.2.2.2 (Tables 6.2.4-1)

SPECIFICATIONS: Electrical ES-12/12A; Mechanical MS-74

RG: 1.63 (Electrical); IEEE 317

ASME Section III, NE for Class MC Components

PROCEDURES EI-9 Rev 2 1/17/83 Leak Rate Testing of Electrical Penetration Assemblies and Header System

RESULTS Dimensions and location were found to be in accordance with FSE 00182. Maintenance and leak rate testing had been performed in accordance with the acceptance criteria and procedures, and had been accurately documented. There was no evidence of insulation cracking on penetration cabling.

RESOLUTION N/A

INSPECTION REPORT NO 50-445/84-16

PAGE NO Am 2-24 INSPECTOR Oberg  
Bealett

HVAC INSPECTION DATA SHEET

Room: Reactor Bldg. 905 Level DATE: 6/20/84

AREA(s) EXAMINED: HVAC seismic duct supports and associated duct segments. The seismic duct supports examined are: 10-4F, 10-4G, 10-4H, 10-4J, 10-4K, 10-4L, 10-4BE, 10-4M, 10-4N, 10-4P, 10-4Q, 10-4R,

ATTRIBUTES:

Equipment (Ducts, ~~Bumpers~~, Supports)  
~~Instrumentation & Controls (Separation & Craftsmanship)~~  
Documentation (Installation & Inspection)

ACCEPTANCE CRITERIA:

FSAR Sect 9.4 R.G. \_\_\_\_\_  
Specifications MS-85 Procedure ~~877~~  
Drawings 2323-MA-0554, 2328-MA-0553, 2328-MA-0552, M1-0300 (CP-3)

RESULTS: The NRC inspectors examined 25 seismic duct supports and associated duct segments. This examination consisted of approximately 1/4 of the seismic duct supports on the 905 level of the reactor building. The seismic duct attributes observed by the NRC inspectors are as follows:  
1) location, 2) dimensions, 3) member size, and 4) welding. The duct segment attributes observed are: 1) orientation, 2) segment size, 3) location, 4) general location, and 5) associated hardware. Three of the 25

RESOLUTION: N/A

HVAC INSPECTION DATA SHEET

Room: Reactor Bldg. 905 Level DATE: 6/20/84

AREA(S) EXAMINED: ID-4S, ID-4T, ID-4U, ID-4V, ID-4BB, VID-C2,  
VID-C1, ID-4AZ, ID-10, VID-1J, ID-16, ID-4D, and IE-1C. Duct segments  
inspected were those associated with seismic duct supports inspected

ATTRIBUTES:

Equipment (Ducts, ~~Dampers~~, Supports)  
~~Instrumentation & Controls (Separation & Craftsmanship)~~  
Documentation (Installation & Inspection)

ACCEPTANCE CRITERIA:

FSAR Sect 9.4 R.G. \_\_\_\_\_  
Specifications MS-85 Procedure \_\_\_\_\_

~~Drawings: 2122-ME-0334, 2128-ME-0333, 2121-ME-0332~~  
RESULTS: Supports inspected ~~cont~~ revealed dimensional discrepancies and  
welding deficiencies observed by the NRC inspectors.\* These supports were  
submitted to the licensee for analysis by Corporate Consulting & Development  
Company Ltd. (CCL). These supports were found to be within the scope of  
the CCL report as which was documented in NRC report 50-445/84-10.  
No discrepancies were observed during inspection of the duct segments.

\* RB-905-ID-1G, 4J AND 4N

RESOLUTION: N/A

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: HVAC seismic duct supports and associated duct segments

Procedures: Bahnsen Procedure DFP-TVSI-001, Rev 10, July 21, 1983

"Ductwork Fabrication Procedure"

Bahnsen Procedure DFP-TVSI-003, Rev 7, May 6, 1981

"Duct Support Fabrication & Installation Procedure"

Bahnsen Procedure DFP-TVSI-004, Rev 10, April 17, 1984

"Drilled-In Expansion Bolts Installation" Procedure"

Bahnsen Procedure DFP-TVSI-003, Rev 8, May 4, 1983

"Duct Support Design Fabrication & Installation Procedure"

Letters: CCL letter to Bahnsen Service Co. of May 22, 1984

CCL letter to Bahnsen Service Co. of May 25, 1984

REPORT: CCL REPORT A-579-83 EVALUATION OF

NON-CONFORMING WELDS TVSI CPSES DUCTWORK

INSP. RPT. NO: 50-445/84-16

PAGE: Att 2-27

INSPECTOR: Oberg

Bennett

Skow



INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: HVAC - ADDITIONAL DOCUMENTS REVIEWED

(CBI Documents/Drawings related to the assemblies welded to the containment liner plate)

- Master Check List - Item # 1, 3, 19 (Pole # 50-F)
- Shop Release For Shipment Check List (7/30/76)  
(8/23/76)(12/9/76)
- Material Heat Number Sheet (12/9/76)(8/23/76)  
(8/2/76)
- CBI Telecopy #817-897-4000 5/25/84
- WPS - E 9018-C1 74-2427/8 (Rev-4-3/15/77)
- Welder Performance Qualification Test No 305  
(10/16/74)
- CBI QA Manual (ASME SECTION II PRODUCTS)  
Division 3, Section 8 - Welding
- CBI Drawing No 50, Rev 5 - 74-2427U
- Baknon Welding Procedure Specification  
BSC-20 (Rev 3 7/5/78)

RACEWAY INSPECTION DATA SHEET

ROOM: CONTAINMENT BUILDING ELEV 860 +905 DATE: 6/20/84

RACEWAY NUMBER/TYPE: (Tray, ~~Conduit~~)

T14WREB SECTIONS 09 THRU 13 ; T12GRBM SECTIONS 27 THRU 47

T14YRED SECTIONS 26 THRU 28 ; T12GRBM SECTIONS 51 THRU 67

T14GRDE SECTIONS 19 THRU 40 ; T14ORDX SECTIONS 02 THRU 06

T13GRCL SECTIONS 28 THRU 51 ; T14GRPZ SECTIONS 02 THRU 06

ATTRIBUTES:

Type & Size	Identification	Documentation (Installation & Inspection)
Tray Covers	Fill Factor	Connections
Grounding	Supports	Separation (Physical/Electrical)
Craftsmanship		

ACCEPTANCE CRITERIA:

FSAR Section 8.3	R.G. _____
IEEE 384	
Specification _____	Procedure _____

RESULTS: INSPECTED 108 SECTIONS OF CABLE TRAY FROM THE ABOVE 11 RACEWAYS.

THIS IS APPROXIMATELY 924 FEET OF CABLE TRAY. 92 SUPPORTS WERE ALSO  
INSPECTED. ALL CABLE TRAY SECTIONS AND 77 SUPPORTS INSPECTED WERE PROPERLY  
INSTALLED AND THE DOCUMENTATION WAS IN ORDER. 15 SUPPORTS DID NOT HAVE  
PROPER DOCUMENTATION TO SHOW THE AS BUILT CONDITION. THOSE CABLE TRAY

RESOLUTION: NCRs M84-01834, M84-01835, and M84-01836 WERE  
SUBSEQUENTLY WRITTEN TO DOCUMENT THE DEFICIENCIES.

INSP. RPT. NO: 84-17 PAGE NO: Att 2-29 INSPECTOR: MARTIN SKOW

RACEWAY INSPECTION DATA SHEET

ROOM: CONTAINMENT BUILDING (CONTINUED)  
ELEV 860 + 905

DATE: 6/20/84

RACEWAY NUMBER/TYPE: (Tray, Conduit)

T12 ORBK SECTIONS 41 thru 42

T13 ORCJ SECTIONS 43 thru 44

T12 ORBK SECTION 49

T14 BREC SECTION 37

ATTRIBUTES:

Type & Size	Identification	Documentation (Installation & Inspection)
Tray Covers	Fill Factor	Connections
Grounding	Supports	Separation (Physical/Electrical)
Craftsmanship		

ACCEPTANCE CRITERIA:

FSAR Section 8.3	R.G. _____
IEEE 384	
Specification _____	Procedure _____

RESULTS:(CONTINUED) HANGERS ARE: 6645, 6642, 6632, 6638, 6503, 6504, 6505, 6567, 6576, 6577, 6578, 5491, 5498, 5499 AND 5519. IN TWO CASES, 3 SEPARATE HANGERS SHARED A COMMON PIECE WHICH WAS ANCHORED TO THE WALL. THIS USE OF A COMMON PIECE IS A DOCUMENTED ALTERNATIVE TO OTHER TYPES OF HANGERS, BUT WAS NOT A DOCUMENTED ALTERNATIVE IN THESE CASES.

RESOLUTION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

INSP. RPT. NO: 84-17 PAGE NO: Att 2-30 INSPECTOR: MARTIN SKOW

INSPECTION DATA CONTINUATION SHEETINSPECTION ELEMENT: CONTAINMENT BUILDING ELEV 860 + 905 (CONTINUED)RAILWAY INSPECTION DATA - RESULTS (CONTINUED)

THOSE HANGERS WERE 6502, 6504, 6505, 6576, 6577, AND 6578. CABLE TRAY  
HANGER 6567 HAD A BEVEL WALKER FOR A HILTI BOLT MISALIGNED. CTH 6632  
AND 6638 HAD DIMENSIONS BEYOND ALLOWED TOLERANCE. CTH 6642 AND 6645  
HAD WELDS LOCATED IN DIFFERENT PLACES FROM THOSE SPECIFIED. CTH 5491,  
5498 AND 5499 HAVE NO ENGINEERING APPROVAL FOR WELDING TO IMBEDDED PLATE  
IN CONJUNCTION WITH HILTI BOLTS. CTH 5519 REQUIRED GROUT BETWEEN  
THE BASE PLATE AND THE FLOOR, GROUT WAS NOT USED.

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INSPECTION DATA CONTINUATION SHEET

CONTAINMENT BUILDING ELEV 860 & 905 (CONTINUED)

INSPECTION ELEMENT: RACWAY INSPECTION DATA

1. THE CURRENT ISSUE OF THE FOLLOWING DRAWINGS WERE UTILIZED TO INSPECT  
THE CABLE TRAY AND ASSOCIATED SUPPORTS:

<u>2323-E1-0502-11</u>	<u>2323-S-0901</u>
<u>2323-E1-0502-12</u>	<u>2323-S-0902</u>
<u>2323-E1-0502-13</u>	<u>2323-S-0903</u>
<u>2323-E1-0502-14</u>	<u>2323-S-0913</u>
<u>2323-E1-0502-15</u>	<u>2323-E1-0502-S</u>
<u>2323-E1-0502-16</u>	<u>2323-E1-0502-01-S</u>
<u>2323-E1-0502</u>	<u>2323-E1-0503-S</u>
<u>2323-E1-0502-01</u>	<u>2323-E1-0510-S</u>
<u>2323-E1-0502-17</u>	<u>2323-E1-0510-01-S</u>
<u>2323-E1-0510-01</u>	<u>FSE-00220-MAP</u>
<u>2323-E1-1702</u>	<u>FSE-00221</u>
<u>2323-E1-1702-01</u>	<u>FSE-0022B (MAP)</u>
<u>FSE-00159 Series</u>	<u>FSE-00229-MAP</u>
<u>FSE-00179 Series</u>	<u>2323-E1-1800</u>

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INSPECTOR: MARTIN  
SNOW



RACEWAY INSPECTION DATA SHEET

ROOM: Containment Bldg. 860 & 905 Levels DATE: 6/20/84

RACEWAY NUMBER/TYPE: (~~Tray~~, Conduit)

C 13φ 11886, C 13φ 10134, C 13φ 11306, C 13φ 10286, C 13φ 11956,  
C 13φ 30511, C 13φ 07849, C 13φ 08750, C 13G 10132, C 12G 11303,  
C 13G 10285, C 12G 11497, C 13G 30512, C 13G 07923, C 13G 07405,  
C 13G 13834, C 14W30537, C 14Y 30522, C 12φ 16078, C 12G 09120

ATTRIBUTES:

Type & Size	Identification	Documentation (Installation & Inspection)
<del>Tray Covers</del>	<del>Fill Factor</del>	Connections
Grounding	Supports	Separation (Physical/Electrical)
Craftsmanship		

ACCEPTANCE CRITERIA:

FSAR Section 8.3 R.G. 1.75  
IEEE 384  
Specification ES-100 Procedure QI-QP-11.9-23, QI-QP-11.3-40  
QI-QP-11.10-1

RESULTS: All of the conduit inspected (33 sections) and the associated  
supports were installed in accordance with 5-910 drawings and the  
appropriate design drawings, and properly documented on inspection reports.

RESOLUTION: N/A

INSP. RPT. NO: 50-945/84-16 PAGE NO: Att 1-33 INSPECTOR: Oberg  
Bennett

RACEWAY INSPECTION DATA SHEET

ROOM: Containment Bldg. 860 & 905 Levels DATE: 6/20/84

RACEWAY NUMBER/TYPE: (Frey, Conduit)

13Ø30365, 14B 09362, 14Y30536, 14Y13155, 12Ø08110,  
14Ø15162, 14R 30556, 14G 20499, 12Ø11957, 13Ø 10117,  
13G 07379, 12G 07924, 14Y30554,

ATTRIBUTES:

Type & Size	Identification	Documentation (Installation & Inspection)
<del>Frey Covers</del>	<del>Fill Factor</del>	Connections
Grounding	Supports	Separation (Physical/Electrical)
Craftsmanship		

ACCEPTANCE CRITERIA:

FSAR Section 8.3 R.G. 1.75  
IEEE 384  
Specification ES-100 Procedure QI-QP-11.3-23, QI-QP-11.3-40  
QI-QP-11.3-1

RESULTS: N/A

RESOLUTION: N/A

INSP. RPT. NO: 50-445/84-46 PAGE NO: Att 1-39 INSPECTOR: Oberg  
Bennett

## GENERAL INSPECTION DATA SHEET

INSPECTION ELEMENT: CABLE SEPARATION BARRIER MATERIAL (SBM) DATE: 6/19/84

ATTRIBUTES: QUALIFICATION OF MATERIALS, PROCUREMENT, FABRICATION, INSTALLATION, CRAFTSMANSHIP, DOCUMENTATION.

ACCEPTANCE CRITERIA: G&H SPECIFICATIONS 2323-MS-30 AND 2323-MS-38H; REGULATORY GUIDE 1.75; 10CFR50, APP.R; IEEE 384; PROCEDURE EEI-25, R3; PROCEDURE QI-QP-11.3-44, R12, AND REGULATORY GUIDE 1.29.

RESULTS: THE SBM DOES CONFORM TO THE SPECIFICATION AS EXHIBITED BY DOCUMENTED TEST RESULTS AND THE INSTALLATION OF THE SBM WAS ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS. (SEE CONT. SHT.)

RESOLUTION: \_\_\_\_\_

INSP. RPT. NO: 84-16 PAGE: ATT-1-35 INSPECTOR: MARTIN

INSPECTION DATA CONTINUATION SHEETINSPECTION ELEMENT: CABLE SEPARATION BARRIER MATERIAL (SBM)

IN ADDITION TO SHEET METAL BARRIERS, CPSES IS UTILIZING A BLANKET MATERIAL SUPPLIED BY B. B. INSULATION, INC. THE BLANKETS ARE 1 1/2 INCH THICK CERAFIBER MATERIAL COVERED WITH AMETEK SILTEMP FABRIC, WITH THE COVER BEING STITCHED TOGETHER WITH ASTRDQUARTZ THREAD. THESE BLANKETS ARE USE TO MEET THE REQUIREMENTS OF REGULATORY GUIDE 1.75 AND THE RADIATION ENERGY SHIELD REQUIREMENTS OF 10CFR.50, APPENDIX R, FOR CABLES, PACEWAY, JUNCTION BOXES, AND INSTRUMENTATION. THE SILTEMP FABRIC PROVIDES PROTECTION FOR THE FIBER MATERIAL AND INSURES THAT THE FIBER MATERIAL REMAINS IN PLACE DURING INITIATION OF FIRE SUPPRESSION SYSTEM OR USE OF FIRE HOSE. THE BLANKETS ARE FABRICATED ON SITE IN A SEWING SHOP AREA. THE BLANKETS ARE SEWN IN A MANNER TO INSURE THAT THE 1 1/2 INCH THICKNESS, AND SIZED FOR A 2" OVERLAP DURING INSTALLATION. THE NRC INSPECTOR REVIEWED THE PROCUREMENT, TESTING AND INSTALLATION DOCUMENTATION AND INSPECTED 15 AREAS WHERE SBM MATERIAL WAS INSTALLED (SEE CONT. SHEET)

INSP. RPT. NO: 84-16 PAGE: Am 1-36 INSPECTOR: MARTIN

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: SEPARATION BLANKET MATERIAL

THE FOLLOWING DOCUMENTATION WAS REVIEWED:

G&H SPECIFICATION 2323-MS-384

G&H SPECIFICATION 2323-MS-30

DESIGN CHANGE AUTHORIZATIONS 17,470, R.6

" " " 18,569, R.O

" " " 18,627, R.O

B&B QUALIFICATION REPORT FOR INSULCO/HEMYC  
CABLE WRAP SYSTEM

PROCEDURES EEI-25, REV.3 AND QI-RP41.3-44, REV.12

NUMEROUS TEST REPORTS FROM SOUTHWESTERN LABORATORIES  
FOR THE CHEMICAL TESTING OF THE SBTM BY LOT.

PURCHASE ORDER PACKAGE CPF-10794-5 AND THE  
ASSOCIATED R.I.P.s AND M.P.E.s.

PURCHASE ORDER PACKAGE CPF-10882-5 AND THE  
ASSOCIATED R.I.P.s AND M.P.E.s.

INSP. RPT. NO: 84-16 PAGE: Att 2-37 INSPECTOR: MARTIN



COMPONENT INSPECTION DATA SHEET

ROOM Containment Bldg. 905 Level

DATE \_\_\_\_\_

COMPONENT IDENTIFICATION: Hydrogen Recombiners; TBX-6HREEL (6HREEE) -01/02;  
Serial No. 7824914/5

ATTRIBUTES INSPECTED: Installation, maintenance, anchor bolting, foundation

ACCEPTANCE CRITERIA: Westinghouse Manual CP-0001-041; 2323-51-0534;  
2323-51-0551; DC/DDA # 928

RESULTS: Installation, Foundation, and anchor bolts were found to be in accordance  
with the installation drawings. Type Class "B" storage was required. Maintenance had been  
performed properly during storage in the warehouse. Installation of the hydrogen  
recombiners was completed in December, 1982 (Unit #2) and February, 1983 (Unit #1). Maintenance  
is required every 2 years and has not yet been performed since equipment has been  
installed for less than 2 years. Review of procurement package revealed out of spec voltage  
readings (13v vice  $10 \pm 2v$ ) for comparator output on pages 15 and 17 (unit #2).

RESOLUTION: Licensee was informed of out of spec voltage readings. Quality release N-41424  
rev. 1 was obtained by licensee from Westinghouse stating that voltages were satisfactory.  
Discussions with Startup and Westinghouse personnel revealed that voltage readings do not  
affect the operation of the equipment, and that equipment has successfully completed  
preoperational testing.

INSPECTION REPORT NO. 50-445/84-16

PAGE NO. 111-30 INSPECTOR Oberg / Bennett

PROCUREMENT INSPECTION DATA SHEET

ROOM CONTAINMENT - UNIT 1

DATE 6/20/84

ITEM IDENTIFICATION: Pressurized Spray Valves (2)

Air-Operated, V-ball valves

Serial No 6448863; 6448864

Uses Bailey Positioner, Fisher Controls

Instruction Book: W 5 710-99-H045 Rev 0

CP-0001-009A

SUPPLIER Westinghouse (Fisher Controls Company)

PROCUREMENT SPECIFICATION NO/TITLE: E-678844 CONTROL VALVES

ASME SECTION III, CLASSES 1, 2 + 3

ATTRIBUTES INSPECTED: SEE DATA SHEET

ACCEPTANCE CRITERIA: ANSI N45.2.13-1976

RESULTS: 2 PO specified (Admin + Technical) - All items of acceptance criteria were acceptable.

RESOLUTION: NA

PROCUREMENT INSPECTION DATA SHEET

ROOM CONTAINMENT 905'-860' LEVELS

DATE 6/20/84

ITEM IDENTIFICATION: ELECTRIC HYDROGEN RECOMBINER

TBX-GHREEE-01 ; TDX-GHREEE-02 ANS Safety Class II

Enclosure cabinets

SUPPLIER WESTINGHOUSE - NUCLEAR ENERGY SYSTEMS - PITTSBURGH, Pa

PROCUREMENT SPECIFICATION NO/TITLE: Equipment Specification 957426

Rev 0 (1/25/78)

ATTRIBUTES INSPECTED: Review of Purchase Order; QA Program; Documentation

Requirements etc. See data sheets —

ACCEPTANCE CRITERIA: ANSI N45.2.13-1976

RESULTS: Units were ordered in 1978. Quality Procurement Specification QPS-917-01, Rev 0 + Quality System Requirements QCS-1, Rev 7 were specified; hold points for QC inspection. All items specified for procurement document review were acceptable.

RESOLUTION: N.A.

PROCUREMENT INSPECTION DATA SHEET

ROOM CONTAINMENT - UNIT 1

DATE 6/20/84

ITEM IDENTIFICATION: PRESSURIZER RELIEF SYSTEM BLOCK VALVES

(2) VALVE ID Nos: 3GM88FNH SER: 0012; 0013

meter operated valves.

SUPPLIER W ELECTRIC CORP (Electro-Mechanical Division  
Cheswick, Pa.

PROCUREMENT SPECIFICATION NO/TITLE: G-679852, Rev 1 + Interim  
Change No 1 (5/30/79); No 2 (11/4/74); No 3 (3/20/75)

ATTRIBUTES INSPECTED: SEE DATA SHEET

ACCEPTANCE CRITERIA: ANSI N45.2.13-1976

RESULTS: All attributes specified in procurement specifications  
and related Purchase Order were found to meet  
acceptance criteria

RESOLUTION: NA



INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: CONTAINMENT - Procurement Documents Reviewed

Hydrogen Recombiners

- Purchase Order 546-ALP-27980 BE (+CN-001+002)
- Equipment Specification 953426 Rev 0 (11/1/78)
- Drawing (W) 8760D69 Sheet 5 - REV I

Block Valves (Pressure Relief)

- (W) Drawing 8372D25 (Rev 1)
- Equipment Specification G-678852 Rev 1 of 12/15/73 + Interim Change No 1; No 2; No 3
- W Quality Release QR-27585
- B+R RIR 03860 6/14/77
- P.O. 546-NRK-214153 BN (+CN-01 thru 019)

Spray Valves

- Equipment Specification G-678844 Rev 2 (3/10/78)
- P.O. 546-CCF-252003-BN (CN-001 thru 004)
- P.O. 546-CCF-178390-XN (CN-001 thru 030-024) (ADMIN P.O.)
- W QR N-49052 (Rev 0, 1 + 2)
- B+R RIR 12181
- FISHER DWG 55A1225 (Rev C)

INSP. RPT. NO: 50445/8416 PAGE: A12-42 INSPECTOR: OBERG



INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: PROCUREMENT DOCUMENT REVIEW

(Based on ANSI N45.2.13-1976)

- Scope of Work
- Technical Requirement
- QA Program Requirements
- Right of Access
- Documentation Requirement
- Non conformance
- Review of Procurement Documents

## GENERAL INSPECTION DATA SHEET

INSPECTION ELEMENT: "AS-BUILT" PROGRAMDATE: 6/20/84

ATTRIBUTES: Procedures adequate to ensure drawings are timely and

ACCEPTANCE CRITERIA: ANSI N45.2; ANSI N45.2.9 (1947); ANSI N45.2.9 DRAFT II, R0 (1973); ANSI N45.2.11 (1974)

RESULTS: Program<sup>and schedule</sup> for ensuring generation and completion of as-built design documents was found to be adequate. Implementation was adequate except in area of drawing control for the Control Room stick files.

RESOLUTION: N.V. issued for failure to maintain control of drawings in control room file. Criterion II, Appendix B.

INSP. RPT. NO: 50-445/8416 PAGE: ATT 2-44 INSPECTOR: OBORG

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: "AS-BUILT" PROGRAM - DOCUMENTS

REVIEWED:

• N.O. PROCEDURE NDC-102, REV 1 DRAWING + SPECIFICATION

CONTROL

• STA PROCEDURE STA-306, REV 5 DRAWING + SPECIFICATION

CONTROL

• MASTER RECORDS INDEX

• OPERATIONS QUALITY SURVEILLANCE REPORTS: QSR-84-008

• TUGCO AUDIT REPORT TUG-45

• TUGCO MONITORING DISCREPANCY REPORTS: 82-19 thru 25;  
83-14 thru 83-21 and 83-25, 26, 27

• DRAWINGS: 2323-MI-0300/301 ; 2323-MI-0261/262 ; 2323-MI-  
0232 ; 2323-MI-0250/251 (ASSOCIATED DCAs AND CMCs)

• DESIGN CHANGE LOG AFFECTED DOCUMENT UPDATE REPORT -  
(FOR DRAWINGS LISTED ABOVE)

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INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: "AS-BUILT" PROGRAM - ENGINEERING ORGAN-  
IZATIONS - PROCEDURES REVIEWED

- TNE-AD-1 Rev 2 12/16/83 Organization
- CP-EP-3.0 Rev 6 9/9/83 Organization

These procedures define the engineering organizations responsible for CPSES engineering work.

TNE is scheduled to assume all engineering responsibilities for Unit 1 on August 1, 1984

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: As-Built: TNE-DC-1 Design Control

General Requirements (Rev 2; 1/20/84) - Contains an outline of the general framework and requirements for the performance and control of design activities.

TNE TUGCO Nuclear Engineering (CPSES) (Manager) has overall responsibility for implementation of the design control procedures.

Identified the following <sup>areas</sup> related to control of design activities - (also references to implementing procedures)

Design Input (TNE-DC-3, 4, 7 + 11)

Design Documentation (TNE-DC-3, 4, 5, 7, 11, 12, 15 + 16)

Interface Control

Design Verification (TNE-DC-8, 10)

Document Control

Design Change Control

Corrective Action (procedural nonconformances) (TNE AD-5)

Records (TNE-AD-4)

Audits (TUGCO QA DEPT PROCEDURES)



TEXAS UTILITIES  
SERVICES, INC.

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: AS-BUILT PROGRAM

CP-EP-18.0 Rev 0 8/14/81 - Control of Records  
Turnover Activities

Established general control of activities  
involving turnover of safety related records  
generated during design, procurement and construction  
phases.

Para 3.3 - Required a plan for turnover including  
a summary of documents ; Identification/index  
of specific documents; and anticipated schedule.

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: AS-BUILT DRAWINGS

C.P.E.P. 4.5 R1 2/18/90 Design Verification

General document regarding Design Verification

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INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: As-Builts: TNE-AD-4 - Control of Engineering Documents - Contains a matrix of document control attention responsibility. Specifically identifies the following documents:

- Specifications
- Vendor Documents
- Drawings
- Design Verification
- Design Engineering package
- Engineering Change Notice

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INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: As-Builts: TNE-DC-7 Preparation and  
Review of Design Drawings - Applies to new  
drawings and drawings transferred to TNE  
custody. Final issue drawings (prepared by  
the original designer - G+H, Westinghouse) - effect  
the transfer of drawing control. Final issue  
drawings are reviewed as required by TNE  
Manager

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## INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: AS-BUILTS - VENDOR SPECIFICATIONS(PROCUREMENT)

• Procurement specifications (G+H) to be used for reference only. New specs will be written when procurement actions are required.

• W to retain procurement specifications; TNE to assume control of all documents.

• Some procurement specifications with OPS DCC (TUGCO)

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INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: DESIGN VERIFICATION (AS-BUILT PROGRAM)

1. Change Verification Checklist<sup>(CVC)</sup> for CMCs and DCAs

Ref: G+H Project Guide - Section 24 "Processing  
CMCs and DCAs" 2/3/83

• CMCs and DCAs dealing with piping changes  
are as-built verified (pg V-71)

• Design review shall performed on CMCs and DCAs  
for safety-related system + components.

• Reviewing engineer<sup>(G+H)</sup> determines necessity for including  
a CMC or DCA in the appropriate G+H documents on  
CVC, line 6.

1. CMCs and DCAs may or may not be included  
in the applicable drawings, as identified on computer  
change log.

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INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: AS-BUILT DRAWING SELECTED FOR VERIFICATION

FOLLOWING DRAWINGS WERE UNDER CONTROL OF TNE:

<u>DWG NO.</u>	<u>REVISION</u>	<u>DATE ISSUED</u>	<u>TITLE</u>
M1-0300	CP-5	84 02 25	F. D. HVAC
↓ M1-0301	CP5 (CP4)	84 05 15	" " " SHE
↓ M2-0261	CP4 (CP3)	84 05 17	" " SAFETY IJECT.
↓ M1-0262	CP4 (CP3)	84 05 17	" " " "
M1-0232	CP4	84 02 08	" " CONT. SPRAY
M1-0250	CP4	84 03 15	" " REACTOR COOLANT
M1-0251	CP5	84 03 08	" " " "

• (CP4) INDICATS REVISION FOUND ON CONTROL ROOM STICK

OTHER DATA RECORDED INDICATES INFORMATION FROM

"DCC CURRENT DRAWING LIST" DATED 5/22/84.

• Determined that TUGCO DCC was responsible for keeping control room drawings current. (STATION 003)

• ↓ 3 of 7 drawings checked were out of date.

## INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: AS-BUILT PROGRAMREVIEW OF: STA-306 (Rev 5, 7/19/83) Drawing  
and Specification Control

- Prescribes controls for receipt, filing, distribution and maintenance of drawings and specifications.
- Requires distribution of drawings IAW distribution card after receipt of aperture cards. (no time specified)

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## INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: "AS-BUILT" PROGRAM -

- REVIEWED TUGCO DCC CONTROL OF DRAWINGS

DETERMINED THE FOLLOWING:

- TUGCO DCC uses a manual card system for determination of applicable CMC's and DCA's.
  - CONSTRUCTION DCC uses a TNE computerized method for tracking CMC's and DCA's.
  - DCA Log Cards (in TUGCO DCC) are used to track CMC's and DCA's to a specific drawing (although a computer terminal is in TUGCO DCC)
- The two methods do not agree when applicable lists of DCA's and CMC's are compared.
- Data for M1-0262 and M1-0301 was examined and found not to agree.

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GENERAL INSPECTION DATA SHEET

INSPECTION ELEMENT: U.I. 8323-06

DATE: 6/20/84

QA Audits - NRC Inspection Report 50-445/8323.

ATTRIBUTES: N.A.

ACCEPTANCE CRITERIA: N.A.

RESULTS: Determined that the licensee has performed and documented four QA Audit since August, 1983. This meets the intent of the unresolved item.

RESOLUTION: See attached continuation page.

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INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: QA AUDITS

TCP-80 CONSTRUCTION/TURNOVER COMPLETION ACTIVITIES - FUEL BUILDING (3 ROOMS) CONDUCTED 8/15-26/83

TCP-88 ENGINEERING/CONSTRUCTION/QC: TURNOVER COMPLETION ACTIVITIES (AUX + SAFEGUARDS BUILDINGS - ELEVATIONS 873 AND ABOVE) CONDUCTED 10/31-11/15/83 (ELECTRICAL AND MECHANICAL AREAS)

TCP-95 TURNOVER COMPLETION No 1 DIESEL GENERATOR BUILDING - CONDUCTED 2/20-24/84 and 2/27-3/2/84

TCP-103 AREA COMPLETION/TURNOVER AUXILIARY BUILDING - CONDUCTED 4/24-5/4/84

TCP-105 AREA COMPLETION/TURNOVER ACTIVITIES - CONDUCTED 5/29-6/8/84 (REPORT HAS NOT BEEN RECEIVED)

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